

## Investigating the Educational Needs of Mothers to Prevent the Occurrence of Contractures in Burned Children

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### Abstract

**Background:** Burns in children are one of the most common injuries and often cause appearance changes, contractures, disturbances in the normal movements of joints, social isolation, and depression. Since mothers, as the main caregivers, have a unique and essential role in providing physical care and also improving psychosocial functioning, follow-up treatment, and taking care of the complications of burns in their children, the present study aims to investigate the educational needs of mothers of children with burns to prevent contracture.

**Methods & Material:** This descriptive-cross-sectional study was conducted in Motahhari Burn Center from January to September 2024. 150 mothers of burned children were selected through convenient sampling. The data collection tool included a demographic information questionnaire and a 40-item questionnaire to assess the educational needs of mothers. Data were analyzed using SPSS version 26 software.

**Result:** Educational need in the cause and predisposing factors of contracture in the dimensions of not doing physical therapy (3.22), motivational and spiritual factors (3.02), not using anti-scar devices (3.22), and financial problems (3.06) were at an average level. Also, mothers' educational needs in the care and prevention field in the nutrition dimension (3.77) were at a medium level. In the dimensions of wound care (2.95), proper dressing (2.85), positioning of burned limbs (2.88), and physical therapy (2.64), the use of anti-scar devices (2.87), and mobility and activity (2.87) were at a high level. 44% of mothers in the contracture causes section, 47.4% in the burn care, and 62.6% in the prevention of contracture section had a severe educational need. No correlation was observed between demographic variables and the educational needs of mothers in the mentioned three sections ( $p \geq 0.05$ ).

**Conclusion:** Mothers have a high educational need regarding the prevention of contracture in children with burns, and to provide proper care from mother to child, the educational needs of mothers must be met. Considering that no meaningful relationship was found between demographic information such as mother's and father's occupation and academic level, it can be concluded that education should be given the same for all parents regardless of academic level and occupation.

**Keywords:** Burns, Child, Contracture, Needs Assessment, Mother

### 1. Introduction

Burn means damage to body tissue caused by heat, chemicals, electricity, sunlight, or radiation. The most common causes of burns are injuries caused by hot liquids and flames [1]. Burns are in the fourth category of the most common traumas after

traffic accidents, falls, and interpersonal violence [2]. According to the report of the World Health Organization, 322,000 people die every year due to burns all over the world, and more than 95.0% of this type of death occurs in developing countries [3]. The highest rate, 11.6 per 100,000 people, is in Southeast Asia,

and the lowest rate is 1 person per 100 people in high-income countries. In our country, on average, 1375 deaths occur annually due to burns [4]. In children, burns are a public health problem and the fifth cause of non-fatal injuries in the world [1]. Injuries caused by burns represent a stressful experience and have consequences such as delayed growth and development, and behavioral and social problems inside or outside the family [4]. After recovery, the survivors need rehabilitation, reconstruction, and spiritual, physical, and economic support for many years [5]. In terms of depth, burns are divided into four degrees [6]. First-degree burns are usually treated without any special measures. In higher-degree burns, especially on the joints, the resulting scars cause contracture in the form of skin adhesion, limb flexion, and restricted movement of the area [7].

Extensive burn wounds are among the problems of patients who are referred to rehabilitation departments [8]. Over the years, many treatment methods have been used to treat this disease. Non-surgical treatments include physiotherapy and the prescription of restorative ointments. When these measures are ineffective, surgery is the last option [9]. Burns in children also pose challenges for parents due to unpleasant health consequences because they are usually unaware of how to take care of their children [10]. Due to having the greatest influence on the child's life, parents play a unique role in providing physical care, psychosocial improvement, and follow-up rehabilitation care for the child [11]. Good parental caregiving performance is important in improving outcomes for children with burns [12]. Meanwhile, parents' information about how to support and care for their child during hospitalization is not enough [13,14]. Abdelhafiz (2015) stated in a study that parents, especially mothers, do not have enough information about how to prevent the unpleasant complications of burns such as contracture, and how to take care during hospitalization and after discharge, consequently, they experience a lot of stress [15]. In the study of Farzan (2023), the method of treating burns in children had a significant relationship with the level of knowledge of mothers [16]. As long as these informational needs remain unrecognized, we should not expect significant improvements in the complications and consequences of burns in children. Because the prevention of contraction in children requires careful and early intervention by parents [17]. Therefore, it is necessary to carry out organized interventions to measure and determine the educational needs of mothers as a key element in child care and provide related training based on that [18]. In this regard, nurses, who have the

most interaction with parents and sick children, can play the most important role [19]. Relying on their knowledge and experience, nurses can help the family by playing a supporting role so that they face the least stress when the child is hospitalized [20]. Giving parents information about the child's illness, how to treat it, meeting the child's care needs, and also about the parents' responsibilities during the child's hospitalization will play a significant role in reducing the tension in the parents [13,14]. Based on the researcher's clinical experiences, unfortunately, not much attention is paid to the potential abilities of the family to support the child with burns. At the same time, most families do not have much knowledge about the complications of burns, especially contractures. Therefore, this study was conducted to determine the educational needs of parents of children with burns to prevent contracture.

## 2. Methods

This descriptive-cross-sectional study was conducted in Motahari Burn Center located in Tehran province of Iran from January to September 2024. The research community included mothers of burned children who entered the research through convenience sampling.

### 2.1. The Inclusion Criteria Included

- Hospitalization of the child in the burn ward
- Being a child in pre-school age (less than 6 years old)
- The presence of 2nd and 3rd-degree burns or a combination of 2nd and 3rd degrees in the upper body (hand, axillary, and neck areas) in a child
- Passing the acute stage of burns (first 48 hours of burns) in a child
- Being of Iranian origin
- Mother's ability to speak Persian
- Mother's willingness to participate in research

### 2.2. The Exclusion Criteria Included

- Incomplete completion of the questionnaire
  - Distorted answers in the questionnaire
  - Occurrence of an unforeseeable incident during the completion of the questionnaire for the child or mother and the need for emergency intervention
- Using the following formula and taking into account the confidence level of 95.0% and the error of 5.0%, the sample size was estimated to be 139 people, and taking into account the 10.0% dropout, 150 people were considered.

$$n = \frac{\left(Z_{1-\frac{\alpha}{2}}\right)^2 * (p * (1 - p))}{d^2} = \frac{1.96^2 * (0.1 * (1 - 0.1))}{0.05^2} = 139 + 0/10 \cong 150$$

### 2.3. The Research Tools Included

The data collection tools in this research include:

- 1- 15-item demographic profile (age, education level, field of study, number of family members, parent's occupation, and family life status,...).
- 2- The researcher-made questionnaire to investigate the educational needs of mothers in two sections (contracture causes, and contracture care and prevention) based on a 5-point Likert scale

(strongly disagree, disagree, have no opinion, agree, strongly agree).

A- The contracture causes section with 12 items in 4 dimensions; lack of physical therapy (4 items), motivational and spiritual dimension (3 items), non-use of anti-scar devices (3 items), and financial dimension (2 items).

B- The contracture care prevention section with 28 items in 7 dimensions; nutrition (4 items), proper dressing (4 items), wound

care (6 items), physiotherapy (4 items), mobility and activity (3 items), positioning of burned limbs (3 items), and anti-scar devices (4 items).

The level of educational need is classified as low (4-5), medium educational need (3-4) and high (1-4).

In this research, to check the face validity, the questionnaire was given to 10 physiotherapists, wound experts, and nurses with burn expertise, and their corrective comments were applied. To check the validity of the content validity, the questionnaire was given to 10 faculty members of different faculties of nursing and midwifery, and the items were checked for relevance and necessity. CVIAve equivalent to 0.87 was obtained and confirmed. To check the reliability, the retest method was used in 10.0% of the samples and it was confirmed with Cronbach's  $\alpha$  of more than 79.0% [21,22].

#### 2.4. The Method of Collecting Information and Analyzing Data

At first, the researcher, with the code of ethics and permission to conduct research, went to the Iran University of Medical Sciences and then to the selected hospital. After coordinating with the hospital director and obtaining permission from the educational supervisor, held briefing sessions for mothers with burned

children in groups of 4-6 people which lasted within 3 months. In each meeting, the researcher first introduced herself to the mothers and stated the objectives of the research. After obtaining informed consent, the questionnaires were given to the mothers who were eligible for this research. Considering that a large number of mothers were illiterate, the researcher patiently read all the questions aloud to the mother and applied the mother's opinion to each item.

Data analysis from the questionnaire was done using SPSS version 26 computer software. Mean, standard deviation, frequency, and percentage were used to describe the demographic information and educational needs of mothers. Pearson and Spearman correlation tests were used to determine the relationship between demographic variables and the care, prevention, and causes of contracture.

#### 3. Results

The results of the present study showed that 53.3% of the children were in the age range between two and four years. 46.0% of the mothers were between 21 and 30 years old, 62.7% were housewives and 50.7% of them had less than a diploma. Also, 64.0% of fathers had labor jobs and 49.3% of them had an educational level of below a diploma (Tables 1 and 2).

| Variable                      |          | n (%)      |
|-------------------------------|----------|------------|
| Child's age (years)           | <2       | 35(23.3%)  |
|                               | 2-4      | 80(53.3%)  |
|                               | 4-6      | 33(22.0%)  |
|                               | >6       | 2(1.3%)    |
| Previous burn history         | Yes      | 22(14.7%)  |
|                               | No       | 128(85.3%) |
| Gender                        | Girls    | 44(29.7%)  |
|                               | Boys     | 106(70.7%) |
| Burn percentage               | <5%      | 35(23.3%)  |
|                               | 5-10%    | 56(37.3%)  |
|                               | 10-15%   | 33(22.0%)  |
|                               | 15-20%   | 10(12.0%)  |
|                               | >20%     | 16(5.4%)   |
| Degree of burn                | Second   | 102(68.0%) |
|                               | Third    | 40(26.7%)  |
|                               | Mixed    | 8(5.3%)    |
| Burn site                     | hand     | 48(32.0%)  |
|                               | Armpit   | 24(16.0%)  |
|                               | Wrist    | 22(14.7%)  |
|                               | Neck     | 12(8.0%)   |
|                               | Combined | 44(29.3%)  |
| Place of residence            | City     | 103(68.7%) |
|                               | Village  | 47(31.3%)  |
| Hospitalization period (days) | 3-7      | 83(55.3%)  |
|                               | 8-14     | 56(37.3%)  |
|                               | 15-21    | 10(6.7%)   |
|                               | >28      | 1(0.7%)    |
| <i>n=frequency (number)</i>   |          |            |
| <i>%= percentage</i>          |          |            |

Table 1: Demographic Characteristics of a Child with Burns

| Variable                    |                       | n (%)     |
|-----------------------------|-----------------------|-----------|
| Mother's age(years)         | <20                   | 12(8.0%)  |
|                             | 21-30                 | 69(46.0%) |
|                             | 31-40                 | 58(38.7%) |
|                             | >40                   | 11(7.3%)  |
| Mother's job                | housekeeper           | 94(62.7%) |
|                             | laborer               | 50(33.3%) |
|                             | Governmental employee | 5(3.3%)   |
|                             | freelance             | 1(0.7%)   |
| Father's job                | laborer               | 96(64.0%) |
|                             | Governmental employee | 51(34.0%) |
|                             | freelance             | 3(2.0%)   |
| Mother's education          | illiterate            | 28(18.7%) |
|                             | under diploma         | 76(50.7%) |
|                             | diploma               | 42(28.0%) |
|                             | academic              | 4(2.7%)   |
| Father's education          | illiterate            | 32(21.3%) |
|                             | under diploma         | 74(49.3%) |
|                             | diploma               | 40(26.7%) |
|                             | academic              | 4(2.7%)   |
| Economic situation          | weak                  | 63(42.0%) |
|                             | medium                | 70(46.7%) |
|                             | rich                  | 17(11.3%) |
| Number of children          | 1                     | 56(37.3%) |
|                             | 2                     | 75(50.0%) |
|                             | >3                    | 19(12.7%) |
| <i>n=frequency (number)</i> |                       |           |
| <i>%= percentage</i>        |                       |           |

**Table 2: Demographic Characteristics of Parents of Children with Burn**

In the burn care and contracture prevention section, the greatest educational need is related to nutrition, and the least educational need is related to physical therapy. In the part of the causes of contracture, the greatest educational need is related to the aspect of not doing physical therapy and the motivational aspect, and

the least educational need is related to the financial aspect (Table 3). 47.4% of mothers had a high educational need in the area of burn care, 62.6% in the area of prevention of contracture, and 44.0% in the area of causes of contracture (Table 4).

| Variable                           |                                   | M ± SD *    |
|------------------------------------|-----------------------------------|-------------|
| Causes Contracture                 | Failure to do physiotherapy       | 3.02 ± 0.59 |
|                                    | Lack of motivation                | 3.02 ± 0.59 |
|                                    | Failure to use anti-scar products | 3.22 ± 0.64 |
|                                    | Financial problems                | 3.06 ± 0.70 |
| Burn Care                          | Rich nutrition                    | 3.72 ± 0.66 |
|                                    | Wound care                        | 2.95 ± 0.63 |
|                                    | Proper coverage                   | 2.85 ± 0.61 |
| Contracture Prevention             | Physiotherapy                     | 2.64 ± 0.65 |
|                                    | Mobility and activity             | 2.78 ± 0.66 |
|                                    | Positioning of burned limbs       | 2.88 ± 0.70 |
|                                    | Anti-scar products                | 2.87 ± 0.64 |
| <i>* Mean ± Standard deviation</i> |                                   |             |

**Table 3: Mean and Standard Deviation of Educational Needs of Mothers in Different Dimension**

| Area of Educational Need     | High      | Medium    | Low     |
|------------------------------|-----------|-----------|---------|
|                              | n (%)     | n (%)     | n (%)   |
| Causes Contracture           | 66(44.0%) | 83(55.3%) | 1(0.7%) |
| Burn Care                    | 71(47.4%) | 74(49.3%) | 5(3.3%) |
| Contracture Prevention       | 94(62.6%) | 55(36.7%) | 1(0.7%) |
| <i>n= frequency (number)</i> |           |           |         |
| <i>%= percentage</i>         |           |           |         |

**Table 4. Frequency and Percentage of Mothers of Children with Burns According to Different Levels of Educational Needs**

Considering the significance level of less than 0.05, no relationship was observed between demographic variables and educa-

tional needs in the departments of causes of contracture and burn care and prevention of contracture (Table 5).

| Area of Educational Need | Causes Contracture |      | Burn Care |      | Contracture Prevention |      |
|--------------------------|--------------------|------|-----------|------|------------------------|------|
|                          | r*                 | P**  | r*        | P**  | r*                     | P**  |
| Child's age              | -.053              | .516 | -.097     | .239 | -.111                  | .177 |
| Previous burn history    | .036               | .666 | .106      | .196 | .122                   | .141 |
| Gender                   | -.16               | .51  | -.102     | .572 | -.027                  | .764 |
| Burn percentage          | .126               | .124 | .271      | .431 | .269                   | .4   |
| Degree of burn           | .023               | .783 | -.076     | .354 | -.15                   | .128 |
| Burn site                | -.002              | .976 | .151      | .291 | .086                   | .296 |
| Place of residence       | .617               | .617 | -.025     | .765 | -.061                  | .456 |
| Hospitalization period   | .037               | .65  | -.088     | .282 | -.107                  | .191 |
| Mother's age(years)      | .118               | .152 | -.112     | .172 | -.121                  | .141 |
| Mother's job             | .073               | .376 | .041      | .615 | .025                   | .761 |
| Father's job             | -.038              | .643 | -.001     | .986 | -.062                  | .45  |
| Mother's education       | -.156              | .56  | -.026     | .752 | -.043                  | .62  |
| Father's education       | .032               | .699 | .069      | .399 | .05                    | .541 |
| Economic situation       | .022               | .792 | -.018     | .823 | -.082                  | .32  |
| Number of children       | .065               | .429 | -.029     | .172 | -.053                  | .518 |
| <i>*r=regression</i>     |                    |      |           |      |                        |      |
| <i>**P= p valuea</i>     |                    |      |           |      |                        |      |

**Table 5: Correlation of Demographic Variables with Different Areas of Educational Needs**

#### 4. Discussion

Nurses deal with different groups in terms of age, gender, education level, economic status, occupational and health status, housing, and so on. So they should use appropriate educational methods and tools to convey health information to them [23]. According to the findings of this research, about mothers of children with burns, the highest age group was between 21 to 30, and the lowest was under 20. In terms of education level, the majority of mothers had a diploma and a minority had a university education. Regarding the level of education of fathers, the result was similar. Dehghani et al.'s 2018 study showed that most of the fathers and mothers of children with burns had less than a diploma, which is in line with the findings of this study [24]. On the other hand, "housekeeping" was reported as the most common job and profession of mothers. Also, the most occupation that fathers were engaged in was "laborer" and the least was "self-employed". Most of these families had two children, and one child and three or more than three children were the least frequent categories, respectively.

In terms of economic status, the largest group belonged to the "average" economic status and less than 12.0% of families were in a good economic status. In line with this study, Mohhadd Ardabili et al., 2014, also showed that the economic status of people who suffered burns was at an average level [25]. In the study of the demographic information of children with burns, most of the children with burns belonged to the age group of 2 to 4 years, while the least belonged to the age group above 6 years. This shows that the highest probability of burns in children can be in the age group of two to four years, in other words, toddlers. Therefore, to design a better educational program regarding the prevention of burn and its complications, it is necessary to better identify the characteristics of this age group from the physical, psychological, and social aspects.

In line with this study, Yakupu et al. 2022 and MG Jeschke et al. 2020 showed that burns are more common in children under 4 years old [26,27]. Also, in confirmation of the above results, the study of Kavos Shaheswari Nia et al. 2021 showed



that children under 5 years of age were the most common age group with burns [28]. It seems that young children are more prone to burn accidents due to high curiosity, lack of judgment and correct awareness, lack of movement skills, playfulness, and carelessness. More attention from parents to this age group can prevent burning and its side effects. Therefore, educating families in the field of taking care of children is very important [29]. In this research, second-degree burns have given the most involvement, and the highest percentage of burn sites belonged to the group of 5.0 to 10.0% and children's hands respectively. In this regard, Dehghani et al., 2018 showed that second-degree burns and burns below 10.0% are the most common degree and extent of burns in children [24]. Also, according to the study of Muhaddith Ardabili et al., 2013, hands and parts of the elbow constitute 39.0% of burn injuries [25].

Destruction of the function of the hands in burns is very common, and at the same time, the complications caused by it are very undesirable. Involvement of the hands is mainly associated with many physical problems that severely affect the ability of the patient to take care of him/herself [30]. The present study showed that the educational needs of mothers in the part of care in the dimension of nutrition with a score of 3.72 is at an average level. Lam et al. 2018 state that nutrition is very important in burn patients and to improve burn wounds and general health, patients should be encouraged to eat a diet with high protein or calories and fresh fruits and vegetables and avoid ready-made foods. It is better to drink 6 to 8 glasses of water a day and avoid caffeine and alcohol. Food supplements and multivitamins should also be used daily [3].

According to the results, the educational needs of mothers in the two dimensions of wound care and appropriate dressing are equal to 2.95 and 2.85, respectively, and at a high level. In this regard, Moghimian et al., 2022, stated that wound care and proper dressing are very important in preventing burn complications, and home caregivers usually forget care instructions. The best solution is to write down and clearly explain the care steps for them [31]. In this regard, the results of Cook et al.'s 2020 study showed that patient education can be significantly effective in healing burn wounds after discharge from the hospital [32]. Therefore, since mothers have a strong need for training in the aspect of wound care and proper dressing, nurses should give mothers the necessary training in the form of brochures or pamphlets so that they can refer to the contents if they forget. The educational need of mothers in the prevention part in 3 dimensions of physical therapy, immobility and activity, and positioning the burnt limb was equal to 2.64, 2.78, and 2.88, respectively, and was placed at a severe level. Improper rehabilitation and care in the acute period of burns may lead to secondary deformities and various degrees of functional disorders of the hands. During the care of burned upper limbs, the patient should be encouraged to move adequately within the normal range of motion. Incomplete rehabilitation or delayed rehabilitation is an important factor in the destruction of organ function and the subsequent negative consequences [33,34]. Due to scarring and deformity in organs, the self-care ability of burn patients is disturbed as an important indicator in the social re-adjustment of patients. However, if the patients receive proper care and the scars or deformities are

removed from the organs, they will regain full self-care ability [35]. Patient education has a positive effect on the prevention of burn complications. However, despite the importance of this issue, unfortunately, not enough attention is paid to teaching movements related to burn areas to hospitalized patients. This causes worsening of deformity and contracture and disabilities caused by burns. Movement therapy is very important in burn patients and it directly prevents adhesions, shortening of surrounding tissues, and movement limitations of joints [36]. The most important point in movement therapy is to have a suitable and understandable training program for the patient [37].

In line with the results of the present study, AbdElaal et al. 2022 showed that the implementation of physiotherapy programs in burn patients significantly reduces the complications of burns, especially contractures [38]. In fact, it is very important to position the burned body. Putting the organs in the right position is effective in reducing the swelling, obtaining the full range of motion of the joints, and providing the right conditions for wound healing. The correct position of the joints helps to maintain the range of motion and prevents the shortening and gathering of the wound [39]. Adults show more cooperation in observing the correct condition of the joints, but children cannot understand this issue in most cases, and splints are used for them [40].

Regarding the use of anti-scar devices, which is in the prevention section, the educational need of mothers is equal to 2.87 and at a severe level. The use of devices such as splints, pressure bandages and most importantly anti-scar clothes stop the growth of scars and prevent contractures by applying pressure. Therefore, in addition to education about the importance of using these tools, mothers should be taught how to use them and the necessary follow-up. Anti-scar burn clothes have the most effect in the treatment of scars, which are used after splints and compression bandages. Considering the healing process of the burn wound and the formation of a scar, wearing special anti-scar burn clothing is effective in keeping it soft and preventing its deformity [41]. The educational needs of mothers in the cause and predisposing factors of contracture in the 4 dimensions of non-physiotherapy, non-use of anti-scar, motivational and spiritual, and financial means were in the range of 3-4, in other words, at an average level. Although care in the early stages after the accident focuses on stabilizing the patient's physical condition, nurses should also pay attention to the psychosocial needs of the patient and his family to better cooperate in improving the treatment process [42].

In this regard, Saavedra 2021 states that financial problems make the family unable to take the child to the relevant centers for physical therapy, and the cost of providing burn clothes is high. Financial problems also make the family unable to meet the child's nutritional needs [43]. Pearson and Spearman correlation coefficient was used to measure the correlation between demographic variables with the care and prevention department and the causes of contracture. According to the results of the Pearson correlation coefficient with a significance level greater than 0.05, there is no relationship between the age of the child and the age of the mother with educational needs in the area of care and prevention and the causes of contracture. In line with these results,

the study of Dehghani and his colleagues in 2018 showed that there is no significant correlation between age and the average educational needs score [24]. Also, the results of Spearman's correlation coefficient showed that there is no relationship between educational needs and age and education of father and mother with a significance level greater than 0.05. In line with the above results, Abo El Enin Elsayed et al. and Cetinkaya et al. state that the educational needs of mothers are not related to the academic level [44,45]. It seems that regardless of the education level that the mother has, due to the unknown condition of the burned child and the new experience of taking care of the child in this condition, mothers need training on how to take care of their child. Also, there was no significant relationship between parents' occupation and educational needs. Considering that in this study, variables such as education and occupation did not affect the need for education, education should be given equally to everyone. It is better not to differentiate between educated or working mothers and other housewives and uneducated mothers to provide educational interventions.

## 5. Conclusion

The results of this research showed that mothers have a strong need for education regarding the care and prevention of contractures and a relatively high need for education about the causes of contractures. Considering that the occurrence of contracture after burns is very common and since the mother spends most of her time taking care of the child due to her caring role, to provide proper care from the mother to the child, the educational needs of Mothers must be measured. On the other hand, the education process is not possible without determining educational needs [46]. Therefore, by determining the educational needs of mothers, it is possible to educate them on the causes of contractures and care and prevention of contractures and to a large extent prevent problems for children. Education is a suitable solution for transferring knowledge and special skills to people in special situations. If the training is effective, the person can take responsibility for taking care of him/herself and others [47]. In this way, by identifying the educational needs of mothers of burned children, nurses can prevent many of the consequences of burns, such as contractures and limitations, by educating parents. The results of this research are used in the nursing care of patients, especially hospitalized children, in the departments of burns, management and policy-making, education, and research in nursing.

Among the limitations of the study, we can mention the crowdedness of the department due to the daily visits of doctors, and with the arrangements made, the questionnaires were given to the mothers during the quiet hours of the department. Also, there was a possibility of non-cooperation of some mothers due to the fear of leaving their children alone, which was solved by replacing a caregiver while completing the questionnaires by the mothers. Among the uncontrollable limitations were the cultural conditions, and the physical and mental conditions of the mothers, such as fatigue, and nervous tension, which could have affected the way they responded.

## Declarations

### Ethics approval and consent to participate

The code of ethics was obtained from the biological committee of the Ministry of Health and the necessary permits were obtained from the officials of the University of Medical Sciences of the Islamic Azad University of Tehran (Date: 14/01/2024, Number: IR.IAU.TMU.REC.1402.267). While presenting an official letter of introduction to Motahari Burn Accident Hospital, the purpose and nature of the research were explained to all the research units and written consent was obtained. Also, the people were assured about the confidentiality of the information, no need to mention their name and family name in the questionnaire, and no coercion to participate in the research.

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