ORIGINAL ARTICLE

The Perceived Informational Needs of Family Caregivers of Children Hospitalized in a Burn Department: A Cross-sectional Study

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Children are most vulnerable to burn injuries, and their families are their most important source of support. Therefore, it is necessary to identify the information needs of such parents and support them to help children adapt to the new situation, recover to pre-accident conditions, and reintegrate into school and society. This study aimed to investigate the perceived information needs of family caregivers of children admitted to the burn wards of hospitals. This cross-sectional study was conducted on 200 family caregivers of children admitted to the burn ward of a hospital in Tabriz, Iran. Participants were selected through convenience sampling, and the required data were collected by using questionnaires on socio-demographic information, information needs, information resources, and information acquisition methods. The obtained data were analyzed statistically using descriptive statistics (mean, standard deviation, frequency, and percentage) and inferential statistics (Mann–Whitney, Kruskal–Wallis, and Spearman correlation tests). Results indicated that the greatest informational need among family caregivers was related to the child's condition. The treatment team was identified as the most important source of information for them. It was found that information should be provided in a comprehensive and understandable manner, while maintaining honesty and human dignity. The study findings contribute to our understanding of the specific information needs of family caregivers in managing the medical care of children with burns. These findings can serve as a basis for interventions and support services aimed at meeting the needs of these families and improving the quality of care for children with burns.

Key words: burns; family caregivers; needs.

INTRODUCTION

A burn is an injury to the skin or other body tissues primarily caused by heat, radiation, electricity, friction, or contact with chemicals. Burns are a major global health concern, causing an estimated 180,000 deaths annually in low- and middle-income countries.[1] Furthermore, burn injuries are the fourth most common cause of trauma worldwide, requiring medical interventions such as surgery for approximately 11 million people each year.[2] Approximately 90% of nonfatal burns in children occur in low- and middle-income countries.[3] Injuries and accidents account for 16.6% of deaths among Iranian children aged under 6 years, with traffic accidents (37.5%), drowning (17.9%), and burns (12.1%) being the most common accidents in this age group.[4] Burns are the second leading cause of unintentional injury and the fifth leading cause of nonfatal injuries in children.[1,5,6] Children are more vulnerable to burns because of their small size, sensitive skin, and higher risk-taking behavior, particularly in deprived and densely populated areas.[7] They are also at the highest risk of burn injuries due to their rapid growth, impulsive behavior,

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Data availability: The datasets generated and/or analyzed during the current study are not publicly available due to participants' privacy but are available from the corresponding author upon reasonable request.

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and lack of awareness.[7] Burn injuries can psychosocially affect both children and their family members, regardless of children's age.[8] When a child is unexpectedly admitted to the hospital, parents and siblings may experience severe stress.[9] A child's burn injury has a psychological effect, especially on the mother, who may go through financial and marital difficulties in addition to stress, anger, a sense of guilt, anxiety, depression, and post-traumatic stress symptoms. Moreover, such incidents add to parents' responsibilities.[10] The family plays a crucial role in supporting children in such situations.[11] Since children may be unable to report symptoms or treatment preferences due to their age or health condition, parents should communicate with the medical staff on their behalf and actively participate in their care.[12] It is hence necessary to address the needs of families and children in such situations.[11] According to Maslow's hierarchy of needs, meeting the needs of family members is essential for achieving the highest level of functioning. Thus, preventing long-term crises requires promoting family-centered care and identifying, assessing, and meeting these needs. The early identification of these needs is among the basic responsibilities of nurses.[9] Understanding the needs of parents and supporting them can children adapt to the new situation, recover to pre-accident conditions, reintegrate into school and society, and develop healthy emotional relationships in the future.[6,13] As a care model, family-centered care guarantees that care is organized for the whole family, not just the child or a single person. However, in developing countries such as Iran, there is poor knowledge of family-centered care practices, the needs of parents and children, and relevant the facilitators and barriers. Therefore, there is a need for further studies in such countries to address the needs of hospitalized parents and children.[14] Parents provide both short- and long-term care for their children as family caregivers. As a result, they need to have access to trustworthy sources of health information to make correct decisions and provide the best medical care for their children.[9] Since parents are considered the primary advocates for their children's well-being, they can provide their children with medical care of higher quality if their needs are properly identified and met.[15] Therefore, this study aims to determine the perceived information needs of families of children with burns admitted to medical centers.

METHODS

The study population in this cross-sectional descriptive study consisted of family members of children admitted to the pediatric burn ward of Sina Teaching Hospital of Tabriz in 2022. This center is renowned as the largest and most well-equipped burn treatment center in northwest Iran. Due to the limited number of patients in the pediatric burn ward of this hospital, participants were selected through convenience sampling. The inclusion criteria were as follows: willingness to participate in the study, accidental or unintentional burn injuries confirmed by family members, children aged under 12 years, a minimum length of stay (LOS) of 24 hours, presence of at least one support person from among first-class family members (such as mother, grandmother, or sister) with at least basic literacy skills. Family caregivers of children who were in the active phase of mental illness, as expressed by themselves or based on a special checklist, were excluded from the study. A pilot study was conducted on 20 support people to determine the appropriate sample size (SD = 18, d = 0.15 SD). Based on the results obtained from the pilot study and the sample size formula, the sample size was determined to be n = 170. Considering an attrition rate of 20%, the final sample size was decided to be 200.

Data collection

The required data in this study were collected using author-made questionnaires. The first questionnaire was used to collect data on the demographics of family caregivers and children and the clinical conditions of children. The items were about general information such as the age, gender, and educational attainment of children and family caregivers, occupational status of family caregivers, family relationship between family caregivers and admitted children, family economic status, marital status of caregivers, place of residence, place of accident, history of previous hospitalization due to burns, location and extent of wounds, burn percentage, cause of burns, depth of burns, and LOS.

The second questionnaire evaluated family caregivers' perceived information needs. It consisted of 17 items related to the information needs of families, 6 items concerning information resources, and 3 items about information acquisition methods. An open-ended question was included at the end of each section to allow participants to add any other important points.

The authors went through several stages to develop the research questionnaires. First, they developed an initial questionnaire comprising 28 items about information needs, information resources, and information acquisition methods, based on an extensive review of the literature. The validity of the questionnaire was then assessed using the face and content validity methods, and its reliability was measured using Cronbach's alpha.

To check the questionnaire's face validity, the authors provided the questionnaire to 10 family members to evaluate its clarity, appropriateness, and ambiguity in face-to-face interviews. The research group discussed the participants' feedback and suggestions and made the necessary changes to the questionnaire. To ensure content validity, the questionnaire was given to 12 experts, including faculty members from Tabriz University of Medical Sciences and educational and clinical supervisors of burn wards. The research group discussed their comments and suggestions and then made the necessary changes. The content validity index (CVI) and content validity ratio (CVR) were calculated to assess quantitative content validity. A CVR of 0.56 or higher and a CVI score of 0.79 or higher were considered acceptable.[16] Based on expert views, 26 items received higher scores, while 2 items that received lower scores were excluded from the questionnaire. The reliability of the questionnaire was assessed using Cronbach's alpha, which was equal to 0.84.

Participants were instructed to select their preferences from a list of information needs, information resources, and information acquisition methods. The frequency (percent) for each item was then determined based on the participants' responses.

Table 1. Caregivers Demographic Characteristics (n = 200)

Variable		*N* (%)	Variable			*N* (%)
Relative to the child	Mother	197 (98.5)	Economic status of the family		Low	141 (70.5)
	Sister	3 (1.5)			Medium	40 (20)
					High	19 (9.5)
Education level	Low diploma	122 (61)	Marital state		Married	193 (96.5)
	Diploma	57 (28.5)			Single	3 (1.5)
	University	21 (10.5)			Divorced	4(2)
Job	Housewife	179 (89.5)	Residence		Urban	84 (42)
	Employed	21 (10.5)			rural	116 (58)
Number of children in the family (except for the child with burn)	No other children	52 (26)	Age (y)	Mean (SD)	Min	Max
	1	90 (45)				
	2	43 (21.50)		32/50 (7/82)	17	57
	3	10 (5)				
	≥4	5 (2.5)				

Data analysis

The obtained data were statistically analyzed in SPSS-13. Descriptive statistics were used to summarize and describe the data. Since the Kolmogorov–Smirnov test indicated that the data followed a non-normal distribution pattern, nonparametric tests were employed for further analysis. The Mann–Whitney and Kruskal–Wallis tests were used to determine significant differences between the groups. The relationships between variables were also examined by the Spearman correlation test. The significance level in all statistical tests was decided to be $P < .05$, indicating that any observed differences or correlations with a P-value less than .05 were considered statistically significant.

RESULTS

A total of 200 family caregivers of children with burns participated in this study. Table 1 presents the demographics of caregivers. The data showed that all caregivers were female. The majority of them were mothers of children, married, and a homemaker, had a high school diploma, a low economic status, and 2 children, and were living in rural areas. Most families reported no history of burns or emotional–psychological problems among other family members. Additionally, most of the children were male and under the school age. The primary cause of burns was unintentional contact with boiling water, mostly in the kitchen in the absence of parents. The majority of the children had no history of burns or seizures. The mean age of the caregivers and children was 32.50 years and 56.21 months, respectively. The mean burn percentage was 10.29%, and the mean LOS was 5.54 days.

Figure 1 represents the families' perceived information needs, with the most frequent needs listed first (child's condition, complications, and postdischarge care) and the least frequent needs listed last (spiritual adaptation to the child's burns and complications, method of solving financial problems related to burn treatment, physical coping with the child's burn and its complications).

Figure 2 shows the perceived frequency of families' need for information resources. The results showed that the most common information resources needed by families were the medical staff, training manuals, and peers, respectively. These resources provide families with the necessary information to understand and manage their child's medical condition, treatment, and care.

The data presented in Table 2 showed all families should receive comprehensive, understandable, and honest information, while their human dignity is maintained.

Table 3 makes a comparison between family caregivers with various demographic characteristics in terms of perceived information needs, information resources, and information acquisition methods.

"Perceived information needs" showed a significant relationship with caregivers' educational attainment, caregivers' age, and economic status of the family. "Information resources" also demonstrated a significant relationship with caregivers' educational attainment, place of residence, history of burns in other family members, caregivers' age, and LOS. However, there was no significant relationship between "information acquisition methods" and the demographics of caregivers.

DISCUSSION

This study investigated perceived information needs in families with children admitted to medical centers for burns. The results showed that most of the children were male and under school age. They were unintentionally burned to the second degree on their limbs (hands and feet) by boiling water and hot liquids. The study findings were consistent with the results of Logmani et al, Jordan et al, and Mobayen et al who also found a higher incidence of burns in boys. The children who participated in this study aged 1–5 years; they had scald burns from hot liquids, most of which occurred on the limbs and accounted for a burn percentage of 10 or less. The mean LOS for child burn victims was 5 days.[17–19] The overall incidence of burns was slightly higher in boys than in girls, probably because families impose fewer restrictions on boys.[19] Children aged under 5 years ago through a developmental stage in which they become less aware but more impulsive, curious, and physically active.[20]

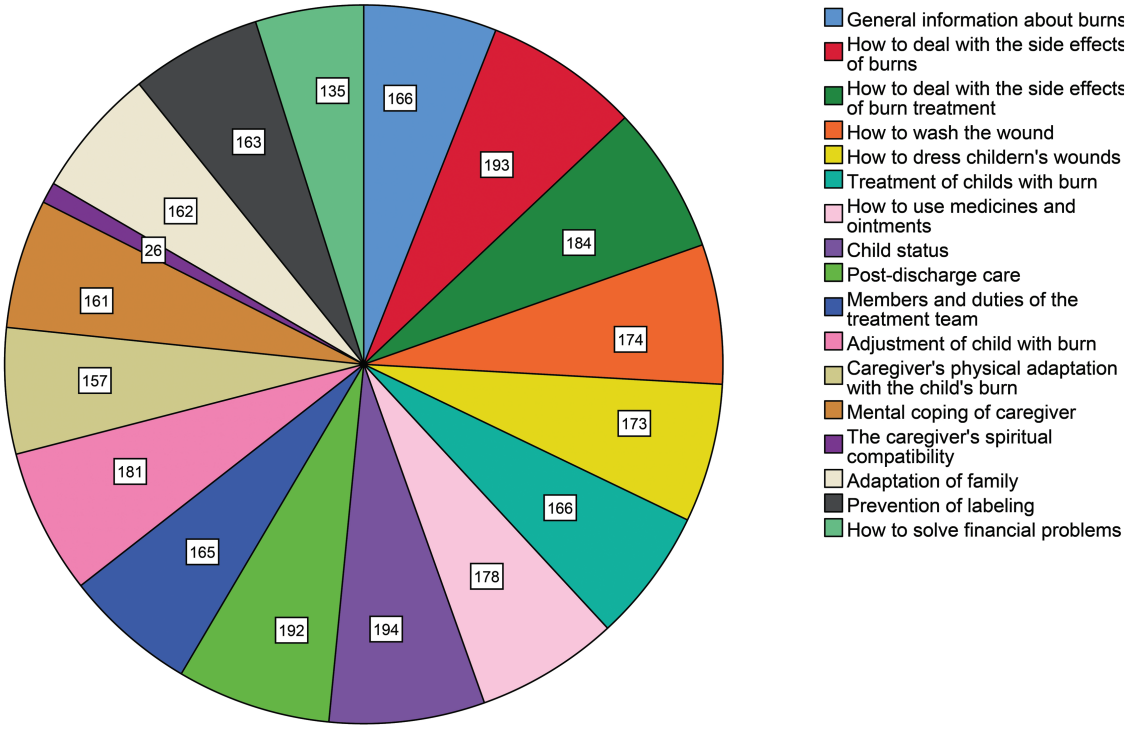

Figure 1. Frequency of Families' Perceived Information Needs

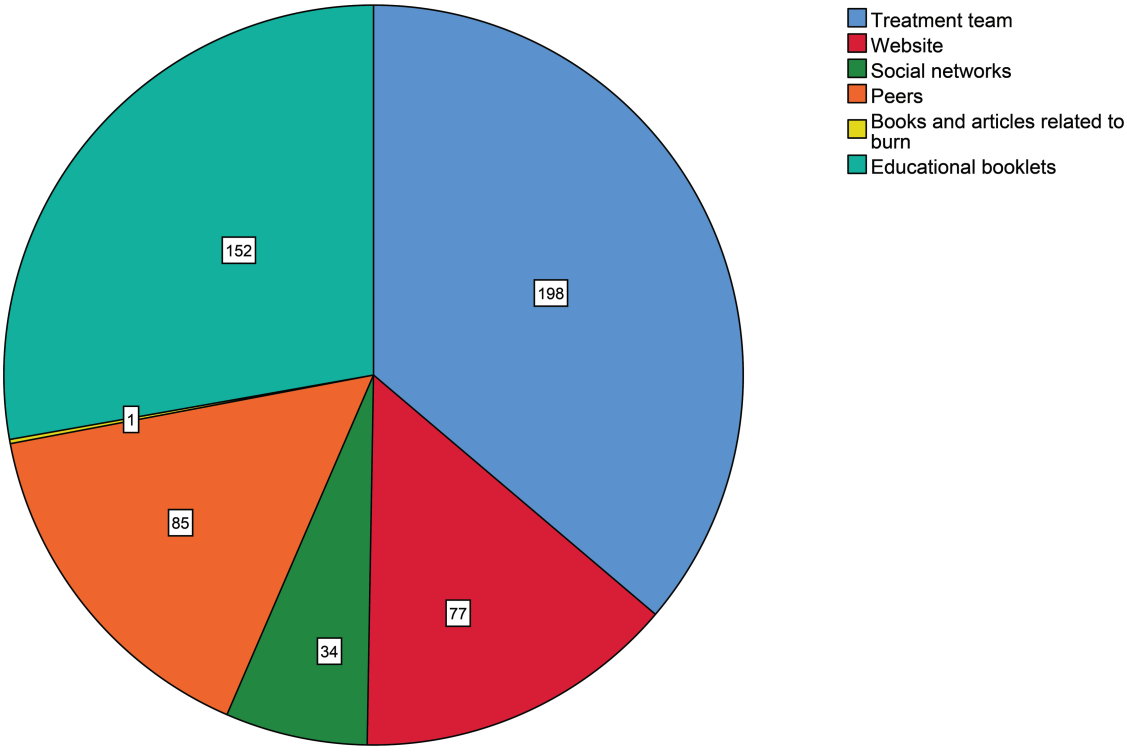

Figure 2. Frequency of Families' Need for Information Resources

The study results also revealed that the majority of family caregivers were mothers with low educational attainment. They were primarily housewives, married, residing in rural areas, and had poor economic status. As primary family caregivers, mothers play a vital role in providing physical care and psychosocial support for their children.[21] Previous studies

Table 2. Methods of Receiving Information

	Yes	No
Method of receiving information	***F* (%)**	***F* (%)**
Comprehensibly and understandably	200 (100)	0
Honest	200 (100)	0
Preserve human dignity	200 (100)	0

Table 3. Comparison of Information Needs, Sources, and Methods of Receiving Among Family Caregiving With Family Caregiver Demographic Characteristics

		Information needs		Information resources		Information receive methods	
Variable		**Mean rank**	**Test**	**Mean rank**	**Test**	**Mean rank**	**Test**
Relative to the child	Mother	100.86	$U = 125.5$	99.93	$U = 182.5$	100.5	$U = 295.5$
	Sister	43.83	$Z = -1.737$	138.17	$Z = -1.18$	100.5	$Z = 0$
			$P = .082$		$P = .238$		$P = 1$
Caregiving job	Housewife	101.07	$U = 1679$	100.61	$U = 1860.5$	100.5	$U =$
	Employed	90.95	$Z = -0.777$	99.6	$Z = -0.079$	100.5	1879.5
			$P = .437$		$P = .937$		$Z = 0$
							$P = 1$
Residence	Urban	91.56	$U = 4113.5$	112.47	$U = 3866.5$	100.5	$U = 4872$
	Rural	106.04	$Z = -1.784$	91.83	$Z = 0$	100.5	$Z = 0$
			$P = .074$		$P = .01$*		$P = 1$
The history of burns to other members	Yes	107.61	$U = 3386$	86.07	$U = 3063.5$	100.5	$U =$
	No	97.38	$Z = -1.116$	105.44	$Z = -2.144$	100.5	3799.5
			$P = .264$		$P = .032$*		$Z = 0$
							$P = 1$
Education level	High school	110.18	$\chi^2 = 10.145$	85.41	$\chi^2 =$	100.5	$\chi^2 = 0$
	Diploma	85.47	df = 2	124.96	23.022	100.5	df = 2
	College	80.79	$P = .006$*	121.81	df =2	100.5	$P = 1$
					$P =$		
					0*		
Family economic status	Expenditure equals income	79.58	$\chi^2 = 17.978$	107.53	$\chi^2 = 1.866$	100.5	$\chi^2 = 0$
			df = 2		df = 2		df = 2
	Expenditure more than income	110.71	$P = 0$*	97.07	$P = .393$	100.5	$P = 1$
	Expenditure less than income	64.08		111.16		100.5	
Marital status	Married	101.12	$\chi^2 = 3.212$	99.9	$\chi^2 = 1.395$	100.5	$\chi^2 = 0$
	Single	43.83	df = 2	138.17	df = 2	100.5	df = 2
	Divorced	88.5	$P = .201$	101.25	$P = .498$	100.5	$P = 1$
Number of children in the family (except for the child with burn)	No other children	87.34	$\chi^2 = 8.685$	96.25	$\chi^2 = 4.748$	100.5	$\chi^2 = 0$
	1	96.48	df = 4	108.77	df = 4	100.5	df = 4
	2	114.63	$P = .069$	95.33	$P = .314$	100.5	$P = 1$
	3	116.5		76.6		100.5	
	≥4	135.5		88.1		100.5	
Age (y) of caregiver			$R = .232$	$R = -0.163$			
			$P = .001$*	$P = .021$*			
The length of hospitalization			$R = -.077$	$R = 0.16$			
			$P = .278$	$P = .023$*			

have reported that low income, low educational attainment, unemployment, and poor living conditions increase the risk of burn injuries.[22] There may be more duties and distractions for mothers when they are at home lead to more distractions and responsibilities. In addition, poor socioeconomic and educational status of parents can increase the risk of accidents due to an unsafe home environment, unsafe equipment, or small living space, all of which can be attributed to poor economic status.[23] Higher educational attainment is associated with better employment opportunities as well as attitudes and knowledge that can help prevent burn injuries.[24]

Similar to some previous studies, this study found that mothers were the primary caregivers for children with burns.[21,25] In most societies, mothers assume the main responsibility for the care and support of their children and families. They play a crucial role in educating children and promoting their well-being, managing household tasks, and controlling family health.[26]

The study results indicated that the most important information needs of families were related to the child's condition, managing the postdischarge complication of burns, and postdischarge care information needs are subjective and arise when individuals seek solutions to their specific problems. Information access enables individuals to cope with different situations.[27] Families must receive timely and comprehensive information. Parents need information about their child's improvement, rehabilitation, and how to protect their children. The absence of relevant information led to worry and a lower quality of care.[28–30] These findings are consistent with the results of some previous studies. For example, McGarry et al reported that families or caregivers were primarily looking for information about the course of treatment and burn prognosis.[29] However, in a study conducted by Rao et al on the needs of caregivers of children with cancer, the primary information need of caregivers was access to disease-related information. This discrepancy highlights the difference between burns and cancer.[31] Zarei et al found that more than half of parents desired information about their child's burn injuries discharge. Burn survivors and their families are left to handle their own lives after discharge without the support of medical staff. Effective discharge planning can ensure continuity of care, timely discharge, improved satisfaction, and lower readmission rates, enabling parents to manage their children's injuries at home.[32–34]

The least important information need expressed by family caregivers in this study was related to spiritual adaptation to their child's burn injuries, which is consistent with the findings of Karahan et al. They expressed gratitude that their child survived and adapted spiritually to the new situation, perceiving the incident as an inevitable divine exam. Regarding physical adaptation, the results corroborated the parents' emphasis that they were mainly concerned with their child's health. Family caregivers, mostly mothers, usually seek information about the physiological requirements of their children such as sleep, nutrition, self-care, and physical adaptation. However, social, cultural, and economic conditions and limited hospital facilities often make it difficult for mothers to manage their children's self-care practices.[35]

The study results demonstrated that the medical staff, training manuals, and peers were the primary information resources needed by families. Previous studies also found that most families preferred to receive necessary and reliable information from the medical staff because of their expertise in this field.[36,37] In a study on patients with dementia and their nonprofessional caregivers, Soong et al showed that the internet, the medical staff, relatives, and friends were the main information resources for the participants, which is not consistent with the results of this study. This difference can be attributed to the lower educational attainment of caregivers, their concerns about misinformation, difficulties in finding information in simple language, and challenges in locating specific information.[38] On the other hand, books and articles were less commonly used as information resources, possibly due to the low educational attainment of most support.[37] Regarding the method of receiving information, consistent with the results of the present study, other studies stated receiving information in an understandable, honest, and human dignity manner, which may be the reason that following these methods leads to effective communication between the treatment team and the family, and the family can easily ask their questions and increase their awareness and control.[12,28,39]

Based on these findings, healthcare professionals should identify and meet the information needs of families of children admitted to medical centers with burn injuries. Comprehensive and timely information can help caregivers to control their anxiety, provide better medical care to their children, and promote therapeutic outcomes. Healthcare professionals should do their best to address caregivers' concerns about their child's condition and also manage complications and postdischarge care. They should also consider the socioeconomic background and educational attainment of caregivers to provide them with accessible and understandable information. Collaboration with peers and support groups can also be beneficial in addressing caregivers' informational and emotional needs.

The study results showed a statistically significant difference between caregivers with different levels of educational attainment in terms of the mean score of information needs and information resources. This means that the caregivers with higher educational attainment showed higher information needs and desire for searching information resources. Individuals who need advanced knowledge and information focus more on documented information and are interested in integrating and interpreting information. By contrast, those who do not need to know are less motivated to search further.[40] The study results also demonstrated a statistically significant difference between caregivers with different economic statuses in terms of the mean information needs. In other words, caregivers with a lower economic status showed greater information needs. Due to limited access to information resources as a result of low income, information needs remain unsatisfied.[41] The study results also indicated that the mean score of "information resources" in families who were living in urban areas and had no history of burns in other members was higher than in families who were living in rural areas and had a history of burns in other members. There are many barriers for villagers to access and use reliable health information, including geography, distance, inclement weather, and lack of financial resources and specialized healthcare services.[42] These results are consistent with the findings of some previous studies.[43,44]

There was a direct and significant correlation between the mean score of "information needs" and the support person's age; accordingly, older caregivers obtained higher scores on "information and support needs." There was an inverse and significant correlation between the mean score of "information resources" and the support person's age; this means that older caregivers obtained higher scores on "information resources." These results are consistent with the findings of some previous studies.[43,44]

Similar to any other research project, this study faced some limitations. This study focused on a specific population of families with children admitted to the pediatric burn ward of Sina Teaching Hospital of Tabriz for burns. Therefore, the findings should be cautiously generalizable to other populations or medical conditions. Additionally, the data were collected through self-report tools, which would have caused recall bias or social desirability bias. Future studies are recommended to explore the information needs of family members of such children in different cultural contexts and investigate the effects of different educational interventions on the fulfillment of these needs. There was no comprehensive, standard questionnaire to assess the information needs of family members of such children. Therefore, a valid and reliable author-made questionnaire was used in this study for data collection. Another limitation of this study was the sample size; this was because the number of children admitted to hospitals of Tabriz was limited, there was only one specialized pediatric burns center in this city, and the duration of the nursing master's programs was very short. It should be also noted that fathers of children could not be their support person due to the ward's rules. Other research limitations were cultural considerations and the risk of infection transmission due to the presence and movement of caregivers of admitted children.

Family members of children with burn injuries admitted to medical centers have specific information needs related to their child's condition, management of complications, and postdischarge care. Healthcare professionals need to recognize and address these needs to support families during nosocomial and home care. Comprehensive and accessible information helps family caregivers provide better medical care to their children and improve their therapeutic outcomes.

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