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# The Maternal Experiences of Child Care with Fever: a Qualitative Study

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#### Abstract

#### Background

One of the most common symptoms of diseases in infancy period is fever, and the concerns occurred could lead to encouraging parents to control fever as soon as possible. This study has been conducted to explore experiences of mothers caring children with fever.

#### Materials and Methods

This qualitative study was conducted using conventional content analysis. The data were collected through 14 unstructured individual interviews with a purposive sampling among the mothers having children with fever admitted to pediatric ward of Shahid Sadoughi hospital, Yazd-Iran. Data analysis was performed on a continuous and consistent comparisons basis.

#### Results

The mean and standard deviation of variables of mothers' age (year), length of hospitalization of children (day), and age of children with fever (year) were  $5.17 \pm 28.25$ ,  $2.7 \pm 4.2$ , and  $2.3 \pm 1.7$ , respectively. The experiences of participants were revealed in three themes of "concern penetration", "in search of fever control", and "discomfort".

#### Conclusion

Since the occurrence of fever is associated with concerns of parents and self-medication to control fever and discomfort of mothers, it is essential for the health care providers to design and implement the appropriate family-centered interventions to improve awareness and the performance of parents.

Key Words: Child, Experience, Fever, Iran, Mother, Qualitative research.

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### **1- INTRODUCTION**

Fever is one of the most common symptoms of diseases in infancy period, and it has been introduced as a reason for the increased referrals to hospitals. 30% of children who come to visit the pediatrics have fever (1), and about 40% of children under 6 months experience fever (2). Simultaneously with the fever, parents get anxious (3-5) and the concerns occurred lead to encouraging them to control fever as soon as possible, and this phenomenon is growing (6), so that fear and anxiety occur with fever in many mothers and it is called "fever phobia" (7). This fear does not stem from the fever itself, but from its possible side effects (8); and febrile convulsions and brain damage with it (9), dehydration and nausea (10) have been reported as causes of fear by most mothers. Therefore, the majority of mothers try to control their fever fast so that they can prevent higher fever (9).

Many of the mothers start the treatment at home before visiting a physician (11), while fever is an indication of protecting performance of the body against invading pathogens (9), and fever is not a disease itself, it is a complex physiological response of the body against the disease (12). But parents mistakenly believe that higher fever is associated with the severity of disease, so they begin antipyretic therapy as soon as possible (13). Acetaminophen and Ibuprofen are of the commonly used antipyretic most medications (14); and mothers use these drugs more than enough, and incorrectly manage the fever (15). Most of the mothers stay up during the night and sometimes wake their children up to control the fever and prescribe more medicine. Doing so, they disrupt the child's rest in addition to their own rest, and increase their own fatigue. On the other hand, they expose their child to complications of high doses of the drug, so that acetaminophen-induced liver damage and ibuprofen- induced kidney damage may occur (17). Another common method used to reduce body temperature is cooling the outer body done using a sponge and cold water bath, while there is little and insufficient evidence about the effects of cooling of the body on fever reduction (18). Furthermore, taking of the clothes and exposing the body of child with fever to open air, fanning children, preventing child form being in blanket (19), are of the other cares provided by mothers to reduce fever in children. How mothers manage fever in children is affected by ethnic and racial diversity (20), level of education, socio-economic culture. status and subjective norms (17). Although many studies have been done quantitatively on the performance of the parents caring children with fever, and extensive knowledge has been provided in relation to the performance level and method, deeper identification of care method needs further reflection, and the knowledge resulted from this deep reflection can help the health care providers to determine effective educational programs in order to reduce the negative performances and reinforce the positive ones (21), in a way that qualitative studies can be the provider of this knowledge, but there are few qualitative studies related to the mothers of children with fever and the affecting factors (22). Thus, the current study has been conducted to explore experiences of mothers caring children with fever.

### **2- MATERIALS AND METHODS**

This is a qualitative research with conventional content analysis approach. Participants in this study included 14 Iranian mothers, with the ability to speak Persian, interested in participating in research with the ability to communicate and transfer the experiences of care of children suffering from fever. Demographic characteristics of the participants are shown in Table.1. Research field was pediatric ward of Shahid Sadoughi hospital Yazd city of Yazd province, the Central of Iran. Being present in the ward and after primary communication, and introducing herself and explaining the purpose and importance of research for visitors, the researcher conducted the needed coordination for interviews with people who were willing to participate in research; oral and written informed consent were taken from all participants before the interview, and they were informed that they are free to get out of the research, and the researcher is obliged to observe all principles of research ethics, including confidentiality and anonymity of participants. Time and place of the interview were based on the willingness of participants, often after visiting hours and in the conference room or after child discharge and telephone coordination and determination of appointment so that the researcher can visit participants in their own house.

Data collection method was deep individual and unstructured interviews started with an open question, and then, the questions and answers were continued with regard to the objectives of the research based on the way of response by the participants. The interview was started by questions including "please tell me, how did you take care of your child when he had a fever?", "Why did you care for him/her?", then, based on the participants' answers, the interviewer used exploration questions such as "Would you please give me an example" or "please, explain more about the issue".

All interviews were recorded by tape recorders with the permission of participants, and at the end of the interview, the participant was asked to state the additional content she has in the mind, and after thanking, the researcher also stated the possibility of subsequent interviews. Considering the interest of the participant, duration of an interview was an average of 40 minutes varied between

60 and 90 minutes. Sampling was done purposefully and continued to reach saturation. It was tried to collect data and select participants from mothers with the highest diversity of different economic, academic, and social levels, indigenous or non-indigenous, having children with different ages (infants, toddler, young, school age). A total of 14 unstructured in-depth individual interviews were qualitative Conventional conducted. content analysis was used for data analysis. This approach is used for subjective interpretation of text data; in this method, through systematic classification process, codes and themes are identified. Content analysis is beyond the objective content extraction from text data, and in this way, hidden themes and patterns can be revealed from within the data content of the study participants. Thus, concurrent with data collection, recorded interviews were transcribed line by line. It was read many times to understand the content of the statements of the participants, and then, the meaning units and primary codes were extracted. The codes were then classified based on similarities (23).

The proposed method was used to evaluate and increase the reliability and validity which are equivalent to the scientific strength of findings in the qualitative research of Guba and Lincoln (24). According to this method, four criteria of validity, transferability, reliability and verifiability were considered for credibility assessment. For and acceptability of data, the principal investigator tried to have continuous involvement with the data. To increase the transferability, findings were evaluated by two specialists in the field of qualitative studies that were outside of the research team. To verify the accuracy of the data and extracted concepts, the participants were reviewed.

Variables	Number (	Number (%)	
	High school	1(7.1)	
Education	Diploma	3(21.42)	
	College education	10(71.42)	
	Housewife	10(71.42)	
Job	Employee	4(28.57)	
Native	Yes	9(64.28)	
	No	5(35.71)	
Gender (child)	Girl	8(57.14)	
	Boy	6(42.86)	
The age average of mothers (year) 28.25_+5.17			
The age average of children (year) 2.3+_ 1.7			
The average length of hospitalization (day) 4.2_+ 2.7			

**Table-1**: The demographic characteristics of the participants

### **3- RESULTS**

Fourteen mothers of children with fever were interviewed in this study. Mean and standard deviation (SD) of age of mothers (year), length of hospital stay for children (day), and age of children with fever (year) were  $28.25 \pm 5.17$ ,  $4.2 \pm 2.7$ , and  $2.3 \pm 1.7$ , respectively. In line with the question "how mothers explain care for children fever?" with the experiences of participants were revealed in three themes of "concern penetration", "in search of fever control" and "discomfort". Then, we discuss each of the themes.

### **3-1.** Concern penetration

Onset of fever in children is associated with stress in mother. Increased fever, prediction of fever complications (seizures, mental retardation, and dehydration), prediction of hospitalization of children, concern of change in the parental roles, and inability to take care of a sick child were stated. Among the reasons cited, most parents agreed on the issue that fear of the occurrence of complications from fever are the greatest reasons for concern and their main motive to act quickly to control fever. "I was so concerned when I saw my child with fever; he is a little kid, so many thoughts surrounded me: what should I do in case of seizure, because it may affect his brain. He is not old enough so that he can take drugs easily; I was always worry that I could not take care of him" (Interview 4, indigenous mothers, an 8-month child).

In addition to concerns of increased risk of fever complications and increased fever, most of mothers were more concerned thinking about the possibility of child hospitalization, especially mothers, who had several children, were more concerned due to further responsibilities of parental role. "When the child got hot, I was worried about the possibility of brain damage on one hand, and that I could not take good care of my other child on the other hand. How can I say that when one's child is sick and has high temperature, the mother cannot think about anything else. She is always worried about the possibility of hospitalization, the mother has many responsibilities at home (Interview 7, nonindigenous mother, 1.5 year old child).

### **3-2.** In search of fever control

Mothers were trying to control the child's fever; they used methods of fever measurement, self-medication (drug therapy, foot bath, taking off the child's clothes, fanning, cooling the room air, and medicinal plants), and referring to physician. Most mothers stated that they attempted to measure the child's fever at beginning of the fever, and the measurement was performed in different forms including touching the forehead and body of the child, and understanding the difference between the temperature of the child's body and her body, using forehead axillary thermometer strips and thermometers. Most mothers stated that they had no tools for measuring the temperature of the body at home, so, they have estimated the severity of fever simply touching the child, and some mothers did not know how to operate and read the temperature and were unable to use the thermometer despite having a thermometer at home. A mother of a 9-month nursing baby stated about measuring the child's body temperature that: "The body was very hot, I didn't know how high the temperature was, I had a thermometer, but I didn't know how to use it" (Interview 7 indigenous mother - 3-year-old child).

When mothers diagnosed children with a fever, they started self-medication and mostly foot bath. Some used cold water for foot bath and stated that although they wanted to reduce fever with foot bath, the children started shivering and they stopped foot bath. Some added salt or alcohol to the water, but there was no reduction in the fever. Some mothers did foot bath with lukewarm water several times and had noticed a reduction in fever. "As soon as I felt my child's fever, I brought a tub of cold water and put his feet in the water, but he started shivering after a few minutes" (Interview 12 - indigenous mother - 2year-old child).

"I had heard that salt water can stop fever, but it was ineffective" (Interview 10 - nonindigenous mother - 4-year-old child)/ Drug therapy was an action done by most mothers. Two common drugs used were Acetaminophen and Ibuprofen. For drug administration, a small number of mothers determined and prescribed the required dosage based on their previous experience and previous prescription. They were sure about the correctness of the prescribed dosage; and the majority of mothers prescribed the drug without calculating the required dose and without the knowledge of how to determine the dose. Some mothers were afraid of the side effects of the drug, so, they tried to prescribed the drug very little and frequently. Some other were afraid of seizures and mental retardation, so, they used Acetaminophen and Ibuprofen at a short distance from each other. The use of medicinal plants (Descurainia sophia, violet flower. hibiscus and jujube), was reported effective by mothers. They prescribed the decoctions or liquids from these plants based on their own experience. Taking off the child's clothes, fanning, and cooling the room air were introduced as care techniques by mothers. Most parents went to visit the physician after primary medical treatment actions at home and seeing their ineffectiveness.

In fact, seeing the doctor immediately after the onset of fever was not their priority as a method of fever control. Mostly two days after the onset of fever and home care delivery and seeing ineffectiveness or increased fever, they had to see a doctor despite providing care at home. "I gave her Acetaminophen syrup several times, put his feet in the foot bath, no change occurred, so I took him to a doctor" (Interview 8 – non-indigenous mother – 3.7-year-old child).

## 3-3. Discomfort

Mothers suffered from disorders in terms of sleep, rest and nutrition during care for children with fever, in a way that, frequent staying up during the time when the child had a fever caused fatigue. On the other hand, because of the stress caused by the disease and the imbalance in life, they did not get enough food. "I didn't sleep well for three days. He had fever at night, I was worried, I couldn't sleep at night, or woke up suddenly" (Interview 2 – indigenous mother – 1-year-old child).

"When your child is sick, you cannot eat anything, because he/she cannot eat. I knew that my body had no energy and needed food, but everything was cluttered" (Interview 5 – non-indigenous mother – 2.8-year-old child).

### **4- DISCUSSION**

Statements made by participants showed that mothers' experiences in care of children with fever were concern penetration, in search of fever control and discomfort. Mothers' concerns were caused by rising fever. fever complications, hospitalization of children, changing parental roles and inability to care for the child. These findings were also confirmed in many studies that the incidence of fever in children causes concern for parents (25), but the cause of concern for mothers is different in different cultures and countries, in a way that mothers' lack of knowledge to control and manage fever, low age of the child with fever, low age of mother (26), being only one child (27), prediction of fever complications such as seizures and mental retardation (28), possibility of brain damage (29), are cited among the causes of concerns. These reasons are somehow different from the reasons identified in this study; this difference can be derived from

the research method so that the reasons mentioned were resulted from the quantitative studies while the current study is qualitative, and parents stated the causes of concern during interview based on what they have experienced, but in quantitative studies, researchers included predicted and pre-defined causes in the questionnaire, and conducted a survey. After concerns occurred, mothers attempted to search for fever control, and used body temperature control, self-medication and doctor visit. Most mothers touched the child's body to measure the temperature, some others did not how to apply and read thermometer despite having one at home. In literature, studies in various Asian, European and African countries reported different results in terms of how to control body temperature by mothers of children with fever, such that in the study done by Agrawal et al. (2013) in India, only 24 out of the 164 parents surveyed had used a thermometer to measure fever (30). In Turkey, among 816 mothers surveyed, 60% used the thermometer to determine the temperature of the child's body at home (27). In this study conducted by Oshikoya et al. (2008) in Nigeria, 83.3% of mothers touched the child's body (forehead - chest - limbs) with back of the hand and examined the fever (31); and in Italy, from 388 parents, 302 parents used a thermometer to measure the temperature of their child's body (32).

Differences in reported rates may be due to differences in the social, economic, cultural and educational status of mothers; because these factors are the most important determinants of the mothers' level of knowledge and how they manage the fever (33). The self-medications mentioned by mothers included drug therapy, foot bath, taking off child's clothes, fanning, cooling the room air, and medicinal plants. The literature review showed that in different countries, parents have used various methods to reduce the child's fever. Rajput et al. (2014) in India stated that the most common fever control methods included acetaminophen prescription, body bath with sponge and lukewarm water, using honey, sugar water and medicinal plants (34). Oshikoya et al. (2008) in Nigeria showed that existing methods of mothers to control the fever includes taking off the child's clothes and exposing the child's body to the air, bathing with lukewarm water, and cold water and fanning the child's body (35).

Rekain et al. (2014)introduced acetaminophen and towel soaked with cold water as methods of reducing fever in Mokoro (an African country) (36). Pereira et al. (2012)in Brazil identified Acetaminophen and Diprofen as common drugs used by parents to lower their children's fever (37). Through a review study on ways to manage fever in children by parents, Walsh and Edwards (2005) stated that the most common way is using antipyretics which are preferred by parents (38). In general, fever control by drug is of the conventional methods common in most countries surveyed, and other methods such as body bath, fanning, cooling and using medicinal plants are reported different depending on the type and context of studies. It can be interpreted that the social, economic, and educational levels, insurance status, and ethnicity of parents (39), are among the most important factors affecting the determination of the type of parents' actions to manage fever and can explain the differences in performance.

Another finding of the study was mothers' discomfort occurred as a result of fever in children and ongoing care of the child by mother. Conner, nelson (1999) the stated main needs of mothers with sick children to have a place to relax, bedding items, a quiet place and food. In fact, mothers need physical support and provision of food and sleep is very important (40), but usually during the child's illness, the mother's

needs are ignored (41). Following the failure to provide mothers' needs, they suffer from change of mood and decline in performance and physical health (42).

### 4-1. Limitations of the study

This study was conducted in limited society and explained perspective of mothers with children hospitalized in teaching hospital.

### **5-CONCLUSION**

The findings of the study indicated the fact that fever is a stressful event for mothers, and in most cases, the concern occurred is because of the risk of seizure with fever which is a driving factor for an immediate action to control fever. Most people often choose self-medication as a prior method to the doctor's visit, so, they visit the physician in case of ineffectiveness of self-medications in controlling fever. In the meantime, they cannot meet the basic needs such as sleep, rest and eating, so, they experience discomfort. Therefore, focusing on family care and the important role of mothers in the care of children with fever, and according to the themes identified, it seems necessary to put the required educations about fever and the resulted seizures, and how to properly manage fever at home as the priorities of the care team interventional program. It must also be designed, implemented and assessed.

### 6- CONFLICT OF INTEREST: None.

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