

A Cross-Sectional Descriptive Study Assessing Knowledge and Performance of the Parents at the Time of Fever in Children

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Abstract

Aim: The aim of the present study was to assess knowledge and performance of the parents at the time of fever in children and how they act when encountering children's fever.

Methods: In this cross-sectional descriptive study, the studied population included parents of children less than 10 years admitted to Department of Pediatrics for 12 months. Samples were selected using the convenience sampling method and were enrolled after informed consents were obtained. Sample size was determined as 200 parents of children under 10 years.

Results: The total number of mothers included in this study was 200. 144 (72%) of them have more than three children. The majority of mothers have neither job nor sufficient income that suffices the basic needs of life, such as food and clothing. 80 (40%) mothers have good knowledge about preschool childhood fever, and 94 (47%) of them show good management practices toward childhood fever. Approximately half of all mothers responded correctly regarding the definition of fever (48%), best site for measuring the temperature of under 5-year children (51%), and types of antipyretics (55%). Better responses are observed regarding the complications of fever (60%), choosing the proper type of antipyretic (64%), increasing the antipyretic dose is not beneficial in lowering high fever (66%), and dose calculation of antipyretic (61%). Mothers show correct responses regarding diagnosing fever by forehead touch or thermometer (46%), consulting a physician or health care facility once the fever is detected (44%), and the proper site for measuring temperature by thermometer for under-five children (52%). Only 35% of the studied group can correctly calculate the dose of antipyretic. Better responses are observed regarding the proper way to administer the pre-scribed antipyretic doses, using alternative medicine such as lukewarm water compresses, and administration of antibiotics with medical advice.

Conclusion: This study indicated more than one-third of mothers had good knowledge about childhood fever, and a quarter of them showed good management practices towards preschool childhood fever. The mothers' management practices towards fever were significantly related to some factors, which are young age, fewer children, higher educational level, sufficient income, and good knowledge.

Keywords: Children, Fever, Knowledge, Performance.

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Introduction

Fever is considered a frequent symptom in childhood and is cause of almost 65% to 70% of all pediatric visits. [1] Fever is a self-limited disease but causes discomfort among parents and is the reason of distress and anxiety to them. These aspects combined raise health care costs and lead to unnecessary use of antibiotics. Additionally, parents tend to make unnecessary telephone calls and visits to doctors, which may end up in unrequired laboratory tests or even unnecessary prescription of medications to children only to soothe parents' concerns. [2,3]

Fever is one of the most common presenting complaints in paediatrics and general practice and is the cause of nearly 70% of all paediatric visits. A number of studies have investigated parents' knowledge, perceptions, theories and practices of childhood fever. [4-8] Parents frequently perceive fever as a disease rather than as a symptom or sign of illness⁵, as defined by Schmitt in 1980 who introduced the term "fever phobia" to describe parents' fearful view of fever. [6] Insufficient knowledge of parents concerning the cause of fever, and misconceptions about its effects on their children's health frequently lead to excessive fear and anxiety. [7] A frequent finding is that parents

are not correctly informed about temperature, defining fever as a medical term. [9-11] Impicciatore et al. studying mothers' perceptions and attitudes towards fever and its treatment found that most mothers did not know how to manage fever. [12] Two studies in Greece reached to the same conclusions; Anagnostakis et al. found that parents had incorrect perceptions about fever and worried about temperatures that were considered normal [13], while Mathioudakis et al. found that only 1.4% of parents correctly evaluated and treated fever and 64.6% used the wrong dosages of antipyretics. [14]

Knowledge is known as a set of information that individuals need to administer and manage their health condition. [15] Knowledge combined with parents' decision making, values, perceived barriers, motivation, and social beliefs, can lead to positive practices towards the management of diseases. [16] Parents' decisions about medication and healthcare-seeking behavior in acute illness are influenced by knowledge, sociodemographic characters, and public beliefs. [17] Previous studies in different parts of the world revealed varied parents' knowledge and practices toward childhood fever management. [17-20] Therefore, it is essential to assess the parental knowledge and behaviour towards their feverish child and their relation to parental sociodemographic characters to avoid mismanaging of fever at home and to decrease the overload on healthcare services.

The aim of the present study was to assess knowledge and performance of the parents at the time of fever in children and how they act when encountering children's fever.

Materials and Methods

In this cross-sectional descriptive study, the studied population included parents of children less than 10 years admitted to Department of pediatrics, SKMCH, Muzaffarpur, Bihar, India for 12 months. Samples were selected using the convenience sampling method and were enrolled after informed consents were obtained. Sample size was determined as 200 parents of children under 10 years.

Data Collection Tool

Data was collected using questionnaires containing 14 items on the demographic characteristics of the

mother and child, as well as 21 items on the parents' actions when their children have fever. To determine the validity of the questionnaire after the design, 12 of the faculty members will be consulted. The validity of the tool in this study is content validity and its Cronbach's alpha value was 0.94.

Implementation

In this cross-sectional descriptive study, samples (300 parents of children under 10 years) were selected using the convenience sampling method among the children admitted to Children's Hospital of Tabriz. Inclusion criteria included parents having a child of less than 10 years (confidentiality of information was observed). Data were collected using questionnaires on parents' practices when encountering children's fever through face-to-face interviews by a general practitioner.

A part of the questionnaire (14 items) included parents' demographic characteristics (age, gender, and education, family size and number of children, family economic status and place of residence) and child's demographic characteristics (age, gender, history of hospitalization and seizures, weight, diet, and body temperature). Twenty-one items were on parents' practices when encountering children's fever.

Ethical Considerations

- 1) Explaining the objectives of the study to parents.
- 2) Obtaining written consent from parents.
- 3) Information obtained from parents was kept confidential.
- 4) Ethical principles were observed and reported regarding the use of resources in the research.

Data Analysis Method

Data were analyzed using SPSS version. Descriptive statistics (frequency, percentage, mean and standard deviation) was used to assess parents' knowledge and practice and their socio-demographic characteristics, and inferential statistics (Chi-square test) was used to examine the relationship between variables (in this study, if the level of significance (P-value) was less than 0.05, null hypothesis was rejected, meaning that the variables were related).

Results

Table 1: Sociodemographic characteristics of mothers and their knowledge and management practices of preschool childhood fever

Variables	No. (Total = 200) (%)
Age	
≤30 Years	96 (48)
>30 years	104 (52)
Number of Children	
<3	56 (28)

≥3	144 (72)
Educational level	
Preparatory and Secondary education	180 (90)
University graduate education	20 (10)
Working status	
Not working	184 (92)
Working	16 (8)
Income	
Insufficient	160 (80)
Sufficient	40 (20)
Knowledge about preschool childhood fever	
Bad	90 (45)
Moderate	30 (15)
Good	80 (40)
Practice towards preschool childhood fever management	
Bad	
Moderate	56 (28)
Good	94 (47)

The total number of mothers included in this study was 200. 144 (72%) of them have more than three children. The majority of mothers have neither job nor sufficient income that suffices the basic needs of life, such as food and clothing. 80 (40%) mothers have good knowledge about preschool childhood fever, and 94 (47%) of them show good management practices toward childhood fever.

Table 2: Percentages of correct knowledge scores of mothers about preschool childhood fever and its management

Knowledge	Yes N%	No N%
Fever definition	48 (48)	52 (52)
Best site for measuring temperature	51 (51)	49 (49)
Complications of fever	60 (60)	40 (40)
Antipyretic types	55 (55)	45 (45)
Choosing the proper type of anti-pyretic	64 (64)	36 (36)
Alternative treatment of regimens effectiveness	45 (45)	55 (55)
Increasing anti-pyretic dose is not beneficial	66 (66)	34 (34)
Dose calculation	61 (61)	39 (39)

Approximately half of all mothers responded correctly regarding the definition of fever (48%), best site for measuring the temperature of under 5-year children (51%), and types of antipyretics (55%). Better responses are observed regarding the complications of fever (60%), choosing the proper type of antipyretic (64%), increasing the antipyretic dose is not beneficial in lowering high fever (66%), and dose calculation of antipyretic (61%).

Table 3: Percentages of correct management practices scores of mothers toward preschool childhood fever.

Practices	Yes N%	No N%
Method to diagnose fever	46 (46)	54 (54)
Best site for measuring temperature	52 (52)	48 (48)
Consulting physician once fever is detected	44 (44)	56 (56)
Calculation of anti-pyretic dose	35 (35)	65 (65)
Appropriate method to administer anti-pyretic	62 (62)	38 (38)
Using alternative method	75 (75)	25 (25)
Antibiotic administration with medical prescription	56 (56)	44 (44)

Mothers show correct responses regarding diagnosing fever by forehead touch or thermometer (46%), consulting a physician or health care facility once the fever is detected (44%), and the proper site for measuring temperature by thermometer for under-five children (52%). Only 35% of the studied

group can correctly calculate the dose of antipyretic. Better responses are observed regarding the proper way to administer the pre-scribed antipyretic doses, using alternative medicine such as lukewarm water compresses, and administration of antibiotics with medical advice.

Table 4: Correlation between sociodemographic characteristics and mothers' knowledge and management practices of fever, and correlation between mothers' knowledge and practice

Items	Knowledge <i>r</i> *	<i>p</i> -Value	Knowledge <i>r</i> *	<i>p</i> -Value
Age	-0.139	0.016	-0.359	<0.001
Number of Children	-0.240	<0.001	-0.316	<0.001
Educational Level	0.368	<0.001	0.212	<0.001
Working Status	0.276	<0.001	0.007	0.920
Income	0.228	<0.001	0.176	0.004
Knowledge	1		0.495	<0.001

Mothers' knowledge about childhood fever is significantly correlated with younger mothers and a lesser number of children. Moreover, the knowledge is significantly correlated with higher educated mothers, working mothers, and sufficient income. The mothers' practices for the management of fever are significantly correlated with younger mothers, lesser number of children, higher educated mothers, and with sufficient income.

Discussion

Fever is a response from the body to some situations, the most common of which is infection. Hypothalamus is a part of the brain responsible for controlling body temperature. Hypothalamus uses raising the body temperature as a way to deal with infectious agents. [21] However, reasons other than infection may also cause a rise in body temperature. [22] Fever can also be a response to the release of internal fever factors during infections, inflammatory, rheumatism, and malignancy processes, as well as external factors such as microbes and toxins. [22,23] Parents usually become extremely worried when their child's body temperature rises. However, in many cases, children recover without needing any treatment and merely by 2 to 3 days of rest and parental care. Studies show that many parents use antipyretics even when the child has a low-grade fever or does not have a fever at all. [23,24] Thus, fever is still one of the most common reasons that parents make a doctor's visit or use emergency services. [24,25] In some sources, frequency of visits to the doctor due to fever in children has been reported as 19 to 30%, or about 50% in other sources. [22,23]

The total number of mothers included in this study was 200. 144 (72%) of them have more than three children. The majority of mothers have neither job nor sufficient income that suffices the basic needs of life, such as food and clothing. 80 (40%) mothers have good knowledge about preschool childhood fever, and 94 (47%) of them show good management practices toward childhood fever. Approximately half of all mothers responded correctly regarding the definition of fever (48%), best site for measuring the temperature of under 5-

year children (51%), and types of antipyretics (55%). Better responses are observed regarding the complications of fever (60%), choosing the proper type of antipyretic (64%), increasing the antipyretic dose is not beneficial in lowering high fever (66%), and dose calculation of antipyretic (61%). Mothers show correct responses regarding diagnosing fever by forehead touch or thermometer (46%), consulting a physician or health care facility once the fever is detected (44%), and the proper site for measuring temperature by thermometer for under-five children (52%). Only 35% of the studied group can correctly calculate the dose of antipyretic. In the study by De bont et al., 88% of mothers knew the correct definition of fever. [26] A previous study that was conducted in France reported that 88.3% of parents with one or more children aged < 5 years showed good knowledge about fever while only 53.6% of them showed good practice towards fever management. [26] Another previous study demonstrated that parents had good levels of general knowledge regarding fever and its management but showed a reluctant attitude or improper delayed action in managing fever. This improper attitude was assumed to be due to the lack of confidence of the parents to manage their children's fever properly. [27] However, these findings were inconsistent with the results of a study in Saudi Arabia that revealed that (94.2%) of Saudi parents displayed poor knowledge about preschool childhood fever and 56.8% of them displayed poor management practices' scores. [28] In the previous studies, the differences in the cultural backgrounds play an important role in the variability between their findings.

Better responses are observed regarding the proper way to administer the pre-scribed antipyretic doses, using alternative medicine such as lukewarm water compresses, and administration of antibiotics with medical advice. Mothers' knowledge about childhood fever is significantly correlated with younger mothers and a lesser number of children. Moreover, the knowledge is significantly correlated with higher educated mothers, working mothers, and sufficient income. The mothers' practices for the management of fever are significantly correlated with younger mothers, lesser number of children, higher educated mothers, and with

sufficient income. However, only half of the mothers in the present study reported correct knowledge. A possible explanation for these findings is that most of the mothers in the present study were not highly educated, and according to other studies that were conducted in Jordan and Kuwait, the level of education of parents is a determinant of their knowledge about childhood fever and its management. [29,30]

Previous studies revealed that the sociodemographic variables such as age, the number of children, education, occupation, and family income had significantly affected the parents' knowledge about childhood fever. [29,30,31] The previous finding was concordant with ours, revealing that the mothers' knowledge about childhood fever and management practices were significantly correlated to some sociodemographic factors. The young mothers and mothers with fewer children had better knowledge and management practices for childhood fever. These findings may be explained by the fact that young mothers were better educated than older ones in this study, and as was mentioned before, the level of education is a main determinant of knowledge. In addition, the mothers with fewer children may be more anxious about their child's illness, and once the fever is detected, they immediately seek medical care. On the other hand, two previous studies were reported that parents' knowledge and management practices towards childhood fever were significantly positively correlated with parents' age and the number of children that was explained by having better experience. [28,29] Moreover, the higher educated mothers and sufficient income showed better knowledge and management practices. A previous study that was conducted in Iran assessed the knowledge and performance of parents towards their childhood fever was consistent with these findings. The Iranian study reported that the parents' education raises their knowledge about pediatric fever and its management. In addition, better education decreases the parents' phobia from fever and its complications. [32]

Conclusion

This study indicated more than one-third of mothers had good knowledge about childhood fever, and a quarter of them showed good management practices towards preschool childhood fever. The mothers' management practices towards fever were significantly related to some factors, which are young age, fewer children, higher educational level, sufficient income, and good knowledge. According to the results of this study, we recommend the introduction of health education interventions to target parents to be fully informed and empowered caregivers for their feverish children. Similar population-based studies are

advised to achieve the generalization of results. Moreover, further studies are recommended to assess other factors that may be related to the domestic management practices towards childhood fever.

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