

MOTHERS' KNOWLEDGE, PERCEPTION AND MANAGEMENT OF FEVER IN CHILDREN

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Objective – Fever is a common medical problem in children which often prompts mothers to seek immediate medical care. The aim of this study was to survey mothers about their knowledge, perception and management of fever in their children. **Patients and methods** – The study involved 240 mothers who brought febrile children to Afshar Hospital in Yazd, Iran. An assessment of the mothers' knowledge, perception and management of fever in their children through answers to a structured questionnaire were the focus of this study. **Results** – In this study, twenty-one percent of the mothers used a liquid crystal forehead thermometer. Forty-six percent treated febrile children with acetaminophen or ibuprofen. Fifty-eight percent of mothers perceived a risk of convulsions in children with fever if it is untreated. Fifty-five percent of mothers think that teething causes fever. **Conclusion** – Most mothers perceive that fever is harmful and dangerous for children. Also, their knowledge is poor and the temperature is not measured accurately. Mothers' misconceptions about fever reflect the lack of health education in our city.

Key words: Mothers ■ Children ■ Fever ■ Knowledge ■ Management.

Introduction

Having a sick child is an anxious time for parents who are frequently very concerned about their child and have difficulty assessing the severity of the illness. One of the main indicators of an illness is fever. Fever is a common childhood problem and is one of the commonest reasons why parents bring their children for medical attention. Fever has traditionally been considered as an oral temperature above 37.8 °C or rectal temperature of 38.4 °C (1). Temperatures measured at other sites are usually lower. The threshold for defining a fever varies significantly between

different individuals, since all children's temperatures may differ by as much as 0.6 °C (1).

Fever itself is not life-threatening unless it is extremely and persistently high, such as higher than 41.6 °C, when measured rectally. Fever may indicate the presence of a serious illness, but usually the most usual causes of fever are common infections. However, many conditions other than infections may cause a fever (2).

Mothers are unable to define fever accurately, they tend to overestimate its dangers, and visit clinic unnecessarily, leading to excessive utilization of health care services (3). Anecdotal experiences suggest that physicians contribute to mothers' misconceptions

about fever, although it is unclear which part of the patient-doctor interaction promotes this fear (4).

The purpose of the study was to determine the status of knowledge, perception and management mothers about fever in their children. The study was undertaken in the Afshar polyclinic in Yazd, Iran.

Patients and methods

This descriptive study was undertaken in the Afshar polyclinic, Yazd, Iran. The target population of this study were mothers who brought their children to the polyclinic in 2012. On arrival at the polyclinic the mother was asked to complete a questionnaire, which contained 12 questions. The questionnaire items were designed to ascertain their knowledge, perception, management and fears concerning fever in their children. The questions were framed in order to enable the average lay mother to understand and respond, and an attempt was also made to obtain definitive data. The appropriateness of responses was determined on the basis of current medical literature. Data analysis was by SPSS version 13 and data expression was in percentages.

Results

A total of 240 mothers who brought their febrile children to the Afshar clinic in Yazd, Iran were interviewed. A description of the sociodemographic characteristics of the mothers of febrile children is presented in Table 1. Most mothers surveyed were under 30 years old. Most mothers participating in the study were high school or university graduates. Roughly two-thirds of respondents were caring for one or two children.

The results showed that the thermometers most commonly used in the home are forehead fever strip (21.7%). It also showed that the percentages of usage of glass and electronic were 10.4% and 3.3%, respectively.

Table 1 Social and demographic characteristics of 240 study mothers

Parameters	(n; %)
Age	
<30	126 (52.5)
30-39	76 (31.7)
≥40	38 (15.8)
Education	
Illiterate	30 (12.5)
Primary /secondary school	56 (23.3)
High school	90 (37.5)
University graduate and above	64 (26.7)
Occupation	
House wife	189 (78.7)
Employed	51 (21.2)
No. of children	
1	92 (38.3)
2	75 (31.3)
3	48 (20.0)
≥4	25 (10.4)

Table 2 Comparison by mothers of hand detection of fever and thermometer

Comparison of hand detection of fever with thermometer	(n; %)
Not as good a thermometer	162 (67.5)
As good as a thermometer	37 (15.4)
Don't know	36 (15)
Better than thermometer	5 (2.1)
Total	240 (100)

Table 2 shows that 67.5% considered use of a thermometer as a more accurate method of detecting fever than palpation.

In total, 36 (15%) mothers read a glass thermometer correctly, and 33 (13.8%) of them read a glass thermometer at 1-3 minutes. Of the 240 cases (100%), 145 cases (60.4%) responded that they did not know which temperature is considered to be normal for their child. Seventy - six cases (31.7%) responded that it is 37 °C and 19 cases (7.9%) stated 20 °C. To the question: "Above what temperature would you consider your child

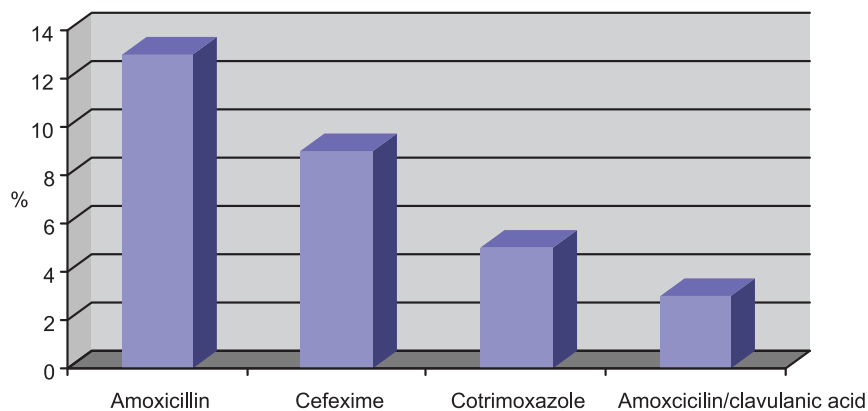


Fig. 1 List of antibiotics that administered by mothers.

to have a fever?" 88 mothers (36.7%) responded 38 °C. Seventy-six (31.7%) mothers gave no treatment for fever and 32.9% would treat a fever by antipyretics alone, 43 (17.9%) by sponging alone and 42 mothers (17.5%) treat fever by both sponging and antipyretics.

This study showed that the most common self-medicated antipyretic in fever management in the children was acetaminophen (37.9%). It also demonstrated that the percentages of usage of ibuprofen and herbal remedies were 8.8% and 0.3%, respectively. Fig. 1 shows the percentages of antibiotics administered by mothers to their febrile children.

Most of the mothers considered that convulsions (141 cases; 58.8%), convulsion and brain damage (46 cases; 19.2%), brain damage (12 cases; 5%) and death (12 cases; 5%) could result from fever without treatment. One hundred and twenty-three (51.3%) mothers expect body temperature to be normal on a hot day, and 28 mothers (11.7%) above normal. One hundred and thirty-three (55.4%) believed teething caused fever, 83 (34.6%) did not and 8 (3.3%) were not sure. One hundred and eighty-six (77.5%) mothers felt that a child with a fever should always be seen by a doctor, and 163 mothers (67.9%) believed a child with a high fever should often be admitted to hospital to control the fever.

Discussion

The surveyed mothers represented a broad demographic spectrum. In our study, nearly half of the mothers were younger than 30 years and most of them had high school or university graduate education. Thirty-five and four-tenths percent of the mothers have a thermometer at home and the most popular thermometer was the liquid – crystal forehead strip, but most mothers believed that the use of a thermometer is the best method for detecting a fever.

This is in striking contrast to hospitals in Iran and the United States of America, where the most common thermometer is a glass thermometer (5, 6). Most mothers use a forehead fever strip at home, because like many mothers in other countries, they are unable to read a glass thermometer (7). It is therefore not surprising that only 10.4% of mothers in this study were able to use a glass thermometer. Most mothers did not know when a thermometer should be read and 13.8% of them would read a thermometer after 1-3 minutes. This time would reflect the time used by nurses and doctors for oral temperature measurement (6, 8, 9).

In our study, 31.7% of mothers did not have a sound understanding of the normal range of body temperature. A study showed (10) that the normal range of children's body

temperature when measured orally is from 36.0 °C to a high of 37.4 °C. A rise in temperature may be caused by physical exercise, humid or hot weather and other factors (11). In this study 11.7% of mothers believed that body temperature would be raised above normal on a hot day. It also showed a lack of knowledge of regulating temperature. The common idea of the association of fever with teething has persisted to this very day for a long time (12). In our study 55.4% of mothers thought that teething could cause fever. In another study as much as a quarter thought that teething would cause a low grade fever (13, 14). In our study 67.5% of mothers believed that using their own hands to check for a fever is not as good as using a thermometer, but Al-Eissa et al. (10) demonstrated that the majority of mothers believed that they could tell whether their child had a fever by touching the child.

This study indicates that mothers have poor knowledge and perception of normal body temperature and fever, and shows that child health care providers have apparently not done enough in educating mothers about normal body temperature and which temperature should be considered a fever.

Conclusion

Most mothers perceive that fever is harmful and dangerous for children. They have a poor knowledge of the problem, therefore they did not measure the temperature accurately. Mothers' misconceptions about fever reflect the lack of health education in our city.

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References

1. Brook I. Unexplained fever in young children: how to manage severe bacterial infection. *BMJ*. 2003;327(7423):1094-7.
2. Dalal S, Zhukovsky D. Pathophysiology and Management of Fever. *J Support Oncol*. 2006;4(1):9-16.
3. Crocetti M, Moghbeli N, Serwint J. Fever phobia revisited: have parental misconceptions about fever changed in 20 years? *Pediatrics*. 2001;107(6):1241-6.
4. Poirier MP, Collins EP, McGuire E. Fever phobia: a survey of caregivers of children seen in a pediatric emergency department. *Clin Pediatr*. 2010;49(6):530-4.
5. Shann F, Mackenzie A. Comparison of rectal, axillary and forehead temperatures. *Arch Pediatr Adolesc Med*. 1996;150(1):74-78.
6. Blumenthal I. What parents think of fever? *Fam Pract*. 1998;15(6):513-8.
7. Banco L, Jayashekaramurthy S. The ability of mothers to read a thermometer. *Clin Pediatr*. 1990;29(6):343-5.
8. Cutter J. Recording patient temperature – are we getting it right? *Prof Nurse*. 1994;9(9):608-16.
9. Clarke S. Use of thermometers in general practice. *Br Med J*. 1992;304(6832):961-3.
10. Al-Eissa YA, Al-Sanie AM, Al-Alola SA, Al-Shaalan MA, Ghazal SS, Al-Harbi AH, et al. Parental perceptions of fever in children. *Ann Saudi Med*. 2000;20(3-4):202-5.
11. Olson KC, Blum LS, Patel KN, Oria PA, Feikin DR, Laserson KF, et al. Community case management of childhood diarrhea in a setting with declining use of oral rehydration therapy: findings from cross-sectional studies among primary household caregivers, Kenya, 2007. *Am J Trop Med Hyg*. 2011;85(6):1134-40.
12. Jaber L, Cohen IJ, Mor A. Fever associated with teething. *Arch Dis Child*. 1992;67(2):233-4.
13. Sood S, Sood M. Teething: myths and facts. *J Clin Pediatr Dent*. 2010;35(1):9-13.
14. Barlow BS, Kanellis MJ, Slayton RL. Tooth eruption symptoms: a survey of parents and health professionals. *ASDC J Dent Child*. 2002;69(2):148-50.