Fever Phobia: Urgent Fears in Urgent Care

Urgent message: Fear of fever leads many parents to seek urgent care. Addressing their fears should be part of the care of febrile children.

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Abstract

In several studies, researchers have found that a large percentage of parents have fever phobia, or inaccurate beliefs about the harmfulness of an elevated body temperature. Those studies were conducted in primary-care settings, so we performed a study in an urgent care setting to test our hypothesis that parents bringing their febrile children to an urgent care center are more concerned about fever than are parents in the primary-care setting. We administered a 35-item questionnaire to 337 patients who brought febrile children to one of three urgent care centers. We found that 90% of parents believed that fever could have bad health consequences, 50% would give antipyretics to children with temperatures of <38°C, and that 50% would even wake their children during the night to give them antipyretics. We did not find, however, that parents at urgent care centers were more worried about fever than patients at primary-care centers are. We believe that urgent care health-care providers must consistently teach parents that fever is not dangerous but that instead, the child's overall condition is what merits attention.

Introduction

Fever phobia is a term coined by Barton Shmitt in 1980 to describe inaccurate beliefs about the harmful nature of elevated body temperature. In his seminal study, he collected responses to a 1-page questionnaire from 81 patients in a hospital-based pediatric clinic. He asked parents to define what they considered a high fever; what, if any, damage they felt high fever could do; how worried they were about fever; and when they would treat a high fever with antipyretics.[1] Of those parents who responded, 92% felt that fever could do serious damage, particularly to the brain, and most parents would wake their child to lower the fever. He showed

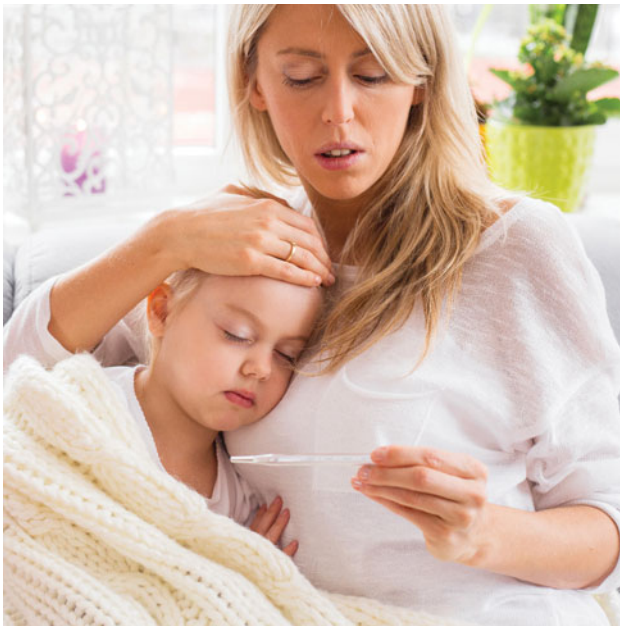

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Table 1. Self-Reported of Degree of Worry

Degree of Worry	Schmitt[1] (n = 81)	Crocetti et al[3] (n = 340)	Current Study (n = 337)
Very worried	63	56	32.6
Worried	36	34	54.5
Not worried	1	10	12.7

that 63% of parents were very worried about fever, 36% were somewhat worried, and only 1% reported themselves to not be worried at all. Two years later, Kramer et al administered a similar interview to 340 parents in two upper-middle-class private practices.[2] In that setting, 56% of parents were found to be very worried, 34% were somewhat worried and 10% were not worried about fever. Contrary to the expectations of the authors, the parents of the highest socioeconomic status within the study sample were the most likely to be worried.

In 2001, Crocetti et al repeated Schmitt's study[3] with 340 parents at two sites. Two decades later, the percentage of parents presenting to pediatric outpatient settings who felt that fever can seriously damage their child continued to be reported 90%. Similar fears have been found around the world in countries as diverse as England,[4] Norway,[5] Canada,[6] and Saudi Arabia.[7]

The original studies were conducted among parents visiting their primary-care health facility. In the study by Schmitt and that by Crocetti et al, some of the parents were accompanying children who were ill. Kramer conducted his study specifically among the parents of febrile children. The study by Karwowska et al was done among parents of two groups of children presenting to an emergency department (ED), one group for febrile illness and the other for injuries, and among parents of healthy children in kindergarten and first grade. The parents in each group expressed similar concerns. However, significantly more parents in the fever group felt that dehydration or brain damage could be caused.

As of the time this article was written, there had been no studies of this phenomenon in an urgent care center. It was believed that perhaps parents who use an urgent care center represent a segment of the population that is more concerned about fever than the general population, because they are seeking care for their child outside the usual location of care and often outside the usual hours of care. For this purpose, we conducted our study in the urgent care setting.

Materials and Methods

Terem Emergency Medical Centers is a privately owned medical services company based in Jerusalem, Israel, that establishes and manages freestanding urgent care clinics.

The interviews were conducted in one of three clinics in Jerusalem and Modiin. The instrument used was a structured interview consisting of 35 items addressing demographic information, beliefs regarding fever, and parental practices in the treatment of fever and in seeking care for fever. These interviews were conducted by trained research assistants, primarily nurses and medical students who work in the center.

The population studied was a convenience sample of 337 parents who presented with a child between the ages of 2 months and 10 years for a chief complaint of fever to one of the three clinics.

Results

Fever was defined as a value of <38°C by 36% of the parents. Our findings are as follows:

- Percent of parents who would give antipyretic treatment to children with temperatures of <38°C: 50%
- Percent of parents who said they believe that something bad could happen from fever: 90%
- Percent of parents who were worried about what fever could do to their child: 54%
- Percent of parents who were very worried about the effects of fever: 36%
- Percent of parents who were not worried at all: 12.5%
- Percent of parents who would wake their children during the night to give them antipyretic treatment: 50%

There was no statistically significant difference in degree of worry between groups based on parental age or education. Almost all (93%) of parents had given antipyretics prior to seeking care, most of whom (84%) believed that there was adequate response to their treatment but sought care anyway.

Discussion

The overall percentage of parents who think that something bad can happen from fever is fairly consistent between studies. Schmitt[1] reported 94%, Crocetti et al[3] reported 91%, and we found 90%. The degree of worry is shown in **Table 1**. Contrary to our hypothesis, parents studied in the urgent care center setting were less likely to report themselves as very worried, in contrast to the findings of Schmitt and Crocetti et al. Perhaps parents who use urgent

Table 2. Percentage of Parents Who Listed a Serious Sequela of Fever in Reported Studies

Sequela	Schmitt[1] (n = 81)	Kramer et al[2] (n = ?)	Crocetti et al[3] (n = 340)	Karwowska et al[6] (fever = 209; injury = 160; school = 141)	Current Study
Seizures	15	48	32	70/64/70	53
Dehydration	4	4	4	80/78/67	24
Brain damage	46	27	21	53/46/49	17
Death	8	11	14	35/34/25	3
Coma	4	Combined with seizures	2	NA	4
Blindness	3		1	NA	0
Really sick	12		2	NA	11
Other	2	10	14	NA	18

NA = not applicable.

care are not more worried but rather are using urgent care because of the convenience it offers. Further analysis of the data collected may shed light on this issue.

A comparison of beliefs regarding serious sequela is found in **Table 2.**

Over time, the belief that seizures can cause brain

damage has diminished but has not been eliminated. On the other hand, the fear of seizures due to fever has greatly risen. Our study and that of Karwowska et al,[6] both conducted in non-primary-care settings, show greater fear than the studies of Schmitt[1] and of Crocetti et al.[3] Perhaps parents who are more concerned about seizures are more likely to seek late-hour care. The markedly elevated rate seen in the study by Kramer et al[2], however, cannot be explained by the differences in the care setting.

"Although we continue to tell parents that fever is not a disease in and of itself, we continue to teach multiple methods to lower the body temperature. Here too, we are inconsistent."

Waking a child to give antipyretic treatment is a common practice among parents. The percentage of 58% in our study is similar to that found by Schmitt (48%) and by Kramer et al (53%), but much lower than the findings of Crocetti et al (85%).

Fever phobia is not a benign phenomenon. It leads parents to treat with antipyretics, often at incorrect and dangerous doses.[8] It would thus seem that it behooves us to try to reduce this fear and teach a rational approach to fever and its management. A number of studies have shown some efficacy of education in ameliorating mistaken concepts on a local basis.[9–12]

Education works best when the message is consistent. However, careful study of these educational endeavors shows lack of consistency among them. For example, an approach by Sarrell and Kahan[12] taught parents that children must be seen by medical personnel if they have a temperature >39°C, even telling parents to go to an ED if the primary-care provider is not available. In contrast, the position taken by Walsh states there is no need for immediate evaluation for fever alone.[13] There is not even complete agreement on the definition of fever. Most of the US studies used 38°C as the cutoff for fever. Yet Sarrell and Kahan[12] taught parents that fever starts at 38.5°C.

Although we continue to tell parents that fever is not a disease in and of itself, we continue to teach multiple methods to lower the body temperature. Here too, we are inconsistent. Some articles push nonpharmacologic measures to reduce temperature, such as sponging, and others state that such measures are useless and only add to the discomfort of the child.[14,15] Furthermore, even though we stress that temperature-lowering is unnecessary and potentially even interferes with the body's ability to fight infection,[16,17] we continue to study ways to even better reduce fever.[18]

Part of the problem is that many health-care providers also have fever phobia. In the study by Karwowska et al, a similar percentage of ED physicians, nurses, pediatricians, and family physicians felt that fever can lead to seizures. Almost 20% of pediatricians and 40% of family physicians believed that fever causes brain damage. One-third of family physicians felt that fever could lead to death (compared with 6% of ED physicians, 5% of ED nurses, and 7.7% of pediatricians). In a questionnaire completed by pediatricians in Massachusetts, 65% believed that fever itself could be dangerous to a child. Of these, respondents believe that the most common complications were as follows: seizures, 58%; dehydration, 21%; brain damage, 10%; and obtundation, 9%. When asked what was the most serious complication, the pediatricians chose as follows: seizure, 30%; brain damage, 21%; dehydration, 17%; obtundation, 5%; and death, 26%.[19]

In many cases, our actions speak louder than words. One of the first actions that parents experience in health-care encounters is measuring the child's temperature. It is not unusual for the next step in the care of the febrile child to be questioning the parent about what temperature-lowering medication has been given and then offering more medication to further lower the fever. Although health-care professionals need information about fever to help arrive at the diagnosis of the child's illness, we should be careful about the manner in which we ask the question. We should take the opportunity to ask parents how they measured the temperature, because meta-analysis shows that tactile temperature has a specificity of approximately 50%.[20] Furthermore, studies have shown that less than half of parents know how to accurately measure temperature.[21]

Because fever alone or its value has not been shown to be correlated with the probability of serious infection, we should use medical encounters to focus questions on how the child is acting. We can use physical examination as an opportunity to review how to look for signs of dehydration or respiratory distress, which *are* important conditions for parents to recognize.

Conclusions

Parents bringing their children to urgent care centers have fever phobia, although perhaps to a lesser extent

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than in those bringing their children to primary-care clinics. All health-care providers in the urgent care setting should work as a team to provide a consistent message that fever is *not* dangerous and that what requires evaluation instead is the overall condition of the child. We should particularly stress that febrile seizures are uncommon and by definition self-limiting and benign.[22] Therefore, there is no need to aggressively treat 95% to 98% of the population for a condition that affects only a very small minority (2%–5%), especially when antipyretic treatment has not been shown to prevent such seizures anyway.[23] ■

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