Research Article

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Awareness of parents of children with fever <5 days attending the outpatient services of Peoples College of medical sciences and research centre, Bhopal, Madhya Pradesh, India

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ABSTRACT

Background: This study was conducted to assess the awareness of parents of children with fever <5 days attending the outpatient services of Peoples College of Medical Sciences and Research Centre, Bhopal, MP, India.

Methods: This was a hospital based, cross sectional study with total of 400 parents with febrile child having fever <5 days were included in the study after obtaining a written consent. Data was collected by one to one interview with the help of pre-tested, semi-structured questionnaire.

Results: It was found that 49.8% of parents did not know that fever is a symptom and not a disease. Nearly one third (37.5%) of parents were unaware of fact that fever can be measured with the help of thermometer. Only 37% of parents knew that threshold for fever is 1000f. Majority of the parents (69.2%) knew cold sponging can reduce fever. Danger signs of fever that prompt immediate medical consultation were known to 54.2% of the parents. More than fifty percent 54.2% of the parents were aware of complications of high grade fever (can lead to convulsion or brain injury).

Conclusions: It is evident from the present study that there is considerable lack of awareness and fear among the parents of children regarding fever, which leads to inappropriate practices for management and unrealistic expectations from the care givers. It is also observed that parental education has a direct positive correlation with awareness and practices.

Keywords: Fever, Febrile child

INTRODUCTION

Fever in a child is one of the most common clinical symptoms managed by paediatricians and other health care providers and a frequent cause of parental concern. It accounts, by some estimates, for one-third of all presenting conditions in children.1

Fever in a child commonly leads to unscheduled physician visits, telephone calls by parents to their child's physician for advice on fever control, and the wide use of over-the-counter antipyretics.

Fever is so common a symptom that an average child during the first two years of life may have 4-6 febrile episodes per year.²

Fever has been recognized as a sign of disease since the beginning of recorded history." Evidence suggests that most febrile episodes are not dangerous and are a beneficial response to infection by potentiating immunological reaction.3 Most of fevers are benign and do not need out of home consultation unless accompanied by other worrying signs or symptoms like change in mental status, convulsions, inability to feed, signs of cardiopulmonary compromise. In 1980 Shimit first coined the term 'fever phobia' since then many studies

have been done, but the fear of fever in parents mind is not only persisting but increased from 52% to 76% in 2001. 3.4 It is influenced by lack of information about fever management, inexperience with managing febrile children and low maternal educational level. 3.5 Majority of parents are afraid of complications of fever specially seizure or brain damage which is very rare event. 3.5

The most common causes of fever <5 day duration are upper respiratory tract infections and other viral infections which are self-limiting and for which emergency medical care is not required. These children can be observed and/or treated at home. However, it is important for parents to know as to when a child with a fever needs to be evaluated by a healthcare provider, when fever should be treated, and when it is reasonable to observe the child without treating the fever.⁶ Many parents administer antipyretics even when there is minimal or no fever, because they are concerned that the child must maintain a "normal" temperature.8 Harmful effects of fever alone are rare and are found mainly in very ill and compromised children or in children with fever persisting for more than 5 days, high core temperature (> 39°C) and fever in an infant less than 1 ~ 2 months of age or when it is associated with signs of severe underlying disease.6

Fever may be useful as a defence mechanism as the body's immune response can be strengthened at higher temperatures; however, there are arguments for and against the usefulness of fever, and the issue is controversial. With the exception of very high temperatures, treatment to reduce fever is often not necessary.

Many studies have revealed inadequate knowledge about fever detection and management among parents as well as an unrealistic fear of fever. Misconceptions about the dangers of fever are common. Unwanted fears about harm from fever causes lost sleep and unnecessary stress for many parents. This is called fever phobia. 10

It has been demonstrated that undue fear of fever among even highly educated parents of infants and young children is common which leads to overly aggressive treatment. This has included treating children with temperatures below 38°C, waking sleeping children to administer antipyretics, and over using physical methods that may be incorrect and uncomfortable. This undue concern about 'high' temperature in a child who is otherwise comfortable also leads to 'emergency' consultations from quacks and pharmacists leading to irrational drug use and pressurizing the physician to prescribe antibiotics.¹¹

Parents' knowledge, attitude and practices are extremely important for their children's health. There is lack of knowledge regarding this aspect of children's health, Thus this study was planned with objectives to find out the awareness, practices and expectations of parents of

children with fever <5 days attending the outpatient services of a medical college hospital and find out their association with socio-demographic factors.

Aim and objectives

To find out the awareness of parents of children with fever <5 days attending the outpatient services People's College of Medical Sciences and Research Centreand to find out their association with socio-demographic factors.

To know the awareness about fever as a symptom or as a disease in itself.

To find out the association of awareness regarding fever of parents of children with fever <5 days with their socio demographic variable.

METHODS

This is a hospital based, cross sectional study to assess the parent's knowledge, attitude and practices and for fever and its management.

The study was conducted at People's College of Medical Science and Research Centre, Bhopal from November 2013 to July 2015 in the department of Pediatrics. This study was approved by institutional research advisory committee (RAC) and institutional ethics committee (IEC) for research involving human subjects.

The study was carried out among 400 parents attending in People's College of Medical Science & Research Centre Bhopal. Parents with children less than 5 days of fever were interviewed while attending the paediatrics outpatient department before they consult the paediatrician. Parents were selected randomly.

Pre designed proforma was made which included questionnaire regarding demographic data included age of parents, accompanying parent, level of education attained, current occupation of parents, and number of children cared for by the parent. The questionnaire items were designed to ascertain parents' knowledge and fears concerning fever in their child. The questions asked were as measurement of fever, its management, expectation from physician and practices regarding fever. Questions were also asked regarding their age, sex, education, type of family, and family income. The questionnaire was pilot tested and validated after being translated in Hindi to assess the reliability of questionnaire. The score was measured by Chronbach's alpha, which was for awareness (0.833) which is reliable. The questions were also framed in a way as to enable the average lay person to understand and respond.

After taking informed consent, the questionnaire was asked by the investigator to the parents of the children.

Inclusion criteria

- Child having fever less than 5 day's duration.
- Informed consent from parent.
- Child not needed emergency medical care.

Exclusion criteria

- Fever ≥5 day's duration.
- Child needing emergency medical care.
- Parent did not give consent.
- If child was not accompanied by either mother or father.

Statistical analysis

The data obtained was subjected to statistical analysis with the consultation of a statistician. The data so obtained was compiled systematically. A master table was prepared and the total data was subdivided and distributed meaningfully and presented as individual tables along with graphs.

Statistical analysis was done using Statistical Package of Social Science (SPSS Version 20; Chicago Inc., USA). Data comparison was done by applying specific statistical tests to find out the statistical significance of the comparisons (socio demographic groups). The qualitative variables were compared using proportions.

Significance level was fixed at P <0.05. Statistical tests employed for the obtained data in our study were:

Chi-Square (χ^2) Test

This is a non-parametric test, used when data are expressed in frequency or proportion or percentages. It is useful for discrete data. Chi-square test was used to evaluate the statistical significance of differences in frequencies between subgroups. Chi-square checks the difference between observed and expected values. The formula used for chi-square test is:

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Where O = Observed frequency

E = Expected frequency

RESULTS

In the present study, 400 parents were interviewed. Among them 51.25% were fathers and remaining were mothers. More than sixty percent 254 (63.5%) of parents were less than 30 years of age.

Education

As shown in table above 10.75% parents were illiterate and 44.75% were educated up to tenth standard while 44.5% parents had 11th or higher education (55 parents were graduate and 30 post graduate)

Table 1: Sociodemographic factors.

Sociodemographic factor of interviewed parents	% (N=400)
Father	51.25% (205)
Mother	48.75% (195)
Age of parents	
Age ≤ 30 years	63.5% (254)
Age more than 30 years	36.5% (146)

Family type

Among the 400 parents, 150 (37.5%) were from joint family remaining belonged to nuclear family.

Nearly fifty percent of parents had income between (5000-12000) rupees/month.

Table 2: Education and family type.

Education of interviewed parents (N=400)			
Uneducated	10.75% (43)		
Education till 10 th standard	44.75% (179)		
Education above 10 th standard	44.5% (178) (55 parents graduates) (30 post graduates)		
Family type			
Joint family	37.5% (150)		
Nuclear family	62.5%(250)		

Table 3: Family income.

Family income in rupees/month	Number of parents (N=400) (%)
>32,050	10.0%(40)
16020-32049	15.0%(60)
12,020-16,019	15.8%(63)
8,010-12,019	22% (88)
4810-8009	23.8% (95)
1601-4809	11.5%(46)
Less than 1600	2.0%(8)

In the present study, 400 parents were questioned out of which 38% (154) parents knew that fever is a symptom and 49% regarded fever as an illness. Rest of the parents did not comment on it. Out of 154 parents who were aware of this fact (fever is a symptom), 43.8% were educated above 10th standard and a statistically significant (p=0.001) association was found between parents education and awareness of this fact.

More than half 52.2% (209/400) of the parents knew that the fever can be measured with the help of thermometer. This awareness was more among educated parents and statistically significant difference (p=0.001) was seen among educated parents 73.0% (130/178), as compared to eight 8/43 (18.6%) parents who were illiterate.

About one third of the parents31.0%(124) believed that the thermometer should be kept for one minute or less and 21.5% (86) knew that it should be kept for at least 3 minute for accurate measurement of fever. This awareness was more among higher educated parents22.5% (40/178), as compared to 9.3% (4/43) illiterate parents, joint family 24.0% (36/150) as compare to nuclear family 20.0% (50/250) (p=0.001 and 0.005) respectively.

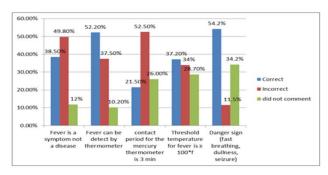


Figure 1: Awareness of parents regarding fever.

Threshold of fever as described by 37.2% (149) parents was above 100°F and this awareness was high (21.3%) among the educated parents was statistically significant (p=0.001).

Table 4: Awareness of parents regarding fever.

	Correct answer % (n)	Incorrect % (n)	did not comment % (n)
Fever I s a symptom not a disease	38.5% (154)	49.8% (199)	11.8% (47)
Fever can be detected by thermometer	209 (52.2%)	37.5% (150)	41 (10.2%)
Minimum contact period for the mercury thermometer is 3 min	86 (21.5%)	52.5% (210)	104 (26.0%)
Threshold temperature for fever is $\geq 100^* f$	149 (37.2%)	136 (34%)	28.7% (115)
Danger sign (fast breathing, dullness, seizure)	54.2% (217)	11.5% (46)	(137)

Majority (54.2%) of parents regarded fast breathing, dullness or seizure as signs that prompt immediate medical consultation, rest of the parents did not know these danger signs. Joint family (33.2%) had more awareness than nuclear family (28%) (p=0.01).

Table 5: The correlation of p value with different variable.

Questions	Age of parent Chi- square/p value	Education Chi- square/p value	Family type Chi- square/p value
Fever is a	1.49	48.07	7.216
symptom not a disease	0.684	0.001	0.065
Fever can be	0.110	121.38	5.39
detect by thermometer	0.946	0.001	0.068
Minimum contact	3.94	46.1	15.0
period for the mercury thermometer is 3 min.	0.413	0.001	0.005
Threshold	6.27	79.26	4.03
temperature for fever is ≥100 f	0.179	0.001	0.402
Danger sign	6.48	24.92	13.23
(fast breathing, dullness, seizure)	0.166	0.002	0.010

DISCUSSION

It is evident that majority of parents in the present study have poor knowledge of fever, its measurement and management. Childhood fever management is an emotional issue motivated by fear of harmful outcomes.

Awareness

In the present study nearly half (49.75%) of parents considered fever as a disease and only 38% of the parents knew it as a symptom. This is in contrast to the observation of Erichsen et al who found that 54% (13) parents considered fever as a manifestation of an infection and not a disease. This difference might be due to low education and awareness among parents interviewed in the study.

In the present study 37% parents defined fever threshold as 100^{0} f. Youssef et al in their study found that 25% of parents defined a temperature of less than 38.0° c (100.4^{0} f) to be fever. It is contrary to our study. This difference might be due low level of illiteracy among the mothers in studied population of Arab. ⁶ In 1998 in United Kingdom Blumenthal surveyed 392 parents. He found

that 30% of parents could not define normal temperature.⁸ Similar results were reported by Purssell's et al a decade later. Durousseau et al found that 42% parents knew fever threshold which is in agreement with the present study.⁴

In this study it was observed that half (52.2%) of the parents knew that the fever can be measured with the help of thermometer. Similarly in a Palestine study 61% of parents used thermometer to detect fever.⁵ In his study more than 50% of parents were graduates and it was found that knowledge of temperature measurement do significantly vary with education of parents (P=0.001). Education and mass awareness also affected the knowledge regarding time duration for keeping thermometer at axila. Only one third 124 (31.0%) of parents knew that the thermometer should be kept for one minute at axila and 21.5% (86) knew that it should be kept for at least 3 minute for accurate measurement of fever. This is in contrast to study done in Oldham hospital, Blumenthal et al who stated that 40% of parents did not know the exact duration of keeping thermometer at axila.5

Twenty eight percent (28.2%) parents in the present study regarded fast breathing, dullness and seizure as the signs that prompt immediate medical consultation. This is in accordance with the study conducted at Palestine.⁵ The Palestinian study was conducted outside in general population as compared to present study which was a hospital based study. This awareness does vary with family type. In this study parents belonging to joint family had more 33.2% (83) awareness then nuclear family (p=0.01). The experiences of the elders might have contributed to this awareness in joint families.

More than fifty percent of the parents 54.2% in the present study were aware of complications of high grade fever (can lead to convulsion or brain injury). Awareness was higher 61.6% (90) among parents who are more than 30 years of age as compared to younger parents. This is similar to the study done by Crocetti et al who concluded that 21% of parents believed that fever can cause brain damage and 91% parents believed that it can Causes harm. Youssef et al also reported that parents have high fear of fever related complication and 35% parents believed that it can Cause brain injury. This was attributed to the facts that in their study majority of parents had more than 2 children and were of more than 30 year of age.

In the present study two third 278 (69.5%) of parents knew paracetamol is an antipyretic and is used for fever management. Paracetamol can Cause liver or kidney injury was answered by 41.5% (166) of parents in the present study. In the Palestinian study 53.2% parents believed antipyretics used to reduce fever were harmful.⁵ Allergic reactions (20.9%), kidney damage (16.2%) were the most harmful outcomes reported by parents in their study.⁵ Similarly another survey by Crocetti et al showed

that most (73%) of the parents believed antipyretics causes liver, stomach and kidney damage.³

Three fourth of the parents in the present study knew that non-pharmacological treatment like cold sponging can reduce fever, while few (14.8%) parents believed that over clothing can reduce fever. This awareness had a direct positive correlation with the parents' education. While comparing the findings with similar study by Crocetti et al it was found that73% of caregivers sponged their child to treat a fever. When compared to Canadian study it was found that around 80% parents were aware of the fact that cold sponging and declothing can reduce fever. The sponging and declothing can reduce fever.

In the present study awareness regarding correct use of antibiotics was observed among one fifth of parents. It was more (28.7%) among well-educated parents as compared to 7% among illiterate parents. This knowledge was not significantly affected by parents' age or family type. Enarson et al in their study found three forth parents (74.1%) correctly identified it to be bactericidal, few parents 27.1% defined it as anti-viral. This difference may be due to high education and mass awareness in Canada.

Majority of parents (73.2%) in the present study knew about expiry date given on medications by the manufacturer. This knowledge was significantly higher (87.1%) in more educated parents (p=0.001) and also in parents from joint family.

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Majority of parents (73.2%) in the present study knew about expiry date given on medications by the manufacturer. This knowledge was significantly higher (87.1%) in more educated parents (p 0.001) and also in parents from joint family.

It is evident from the present study that there is considerable lack of awareness and fear among the parents of children regarding fever, which leads to inappropriate practices for management and unrealistic expectations from the care givers. It is also observed that parental education has a direct positive correlation with awareness and practices. It is recommended that health education regarding common pediatric ailments should be provided to the parents at every contact with the health care providers. Audio visual aids regarding use of thermometer for fever measurement, method of cold sponging and measuring the dose of medication can be displayed and utilized in the waiting room where parents wait to visit the physician.

This was a hospital based study, a place where parents come with high expectations. Similar study if conducted in community may reveal different results. It is a single centre based study hence data cannot be generalised to general population. A follow up feedback from the parents at subsequent visit to the hospital after providing them with health education regarding fever, its measurement and management will go a long way in emphasizing the role of providing health education to the parents at every contact with the health care providers.

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Institutional Ethics Committee

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