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Original Research Article

A study on parental perspectives towards childhood fever

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ABSTRACT

Background: Parents play an important role in recognizing and treating paediatric fever as well as initiating home treatment. Their knowledge and attitude can greatly influence paediatric fever treatment and parental phobia may at times lead to overtreatment of fever. Objectives of this study was to assess the knowledge, attitudes and practices of parents towards childhood fever.
Methods: This cross-sectional observational study was conducted in the Paediatric department at Saveetha Medical College, Chennai. Data collection from parents was done using a questionnaire to study the knowledge, attitude and practices of parents towards fever and its management in children. Data analysis was done using SPSS 16 software.
Results: Total 100 parents participated in the study, most of participants were mothers (69%) and 51% were between 20-30 years. 67% parents believed that fever could cause harmful effects like convulsions and delirium whereas 61% parents believed that consumption of large doses of antipyretic is harmful. Majority of parents 87% were aware that vaccinations can cause fever. Around 82% of parents declared that they had sleepless nights whenever their child was febrile. Majority of the parents 95% stated that they confirmed the presence of fever in their child by tactile assessment. About half the parents preferred using injections for reducing fever than oral medications.
Conclusions: The study revealed presence of high levels of anxiety in majority of parents highlighting the need for reassurance and counsel ling by health professionals. Since most of the parents relied on tactile assessment for fever, there is a need to educate them about proper use of a thermometer for accurate detection and better assessment of fever.

Keywords: Antipyretics, Anxiety, Counselling, Intramuscular injections, Management, Tactile assessment

INTRODUCTION

"Of the three great scourges of mankind: fever, famine and war, fever is by far the most terrible". Sir William Osler

One of the core parenting skills is to ensure optimal health and well- being of children. Parents play a pivotal role in recognizing sickness in their child, consulting the doctor, administering medications and taking responsible decisions to improve health. Although health professionals assume a dominant role in treating children, it is the ultimately the parents who deliver the prescribed treatment at home. Knowledge among parents about home management and interventions for common childhood illness like fever is therefore important. The knowledge and attitudes of parents are variable and can influence the outcome of child's health since poor parental knowledge can be a risk factor for poor child health while measures to strengthen parental knowledge can lead to positive impact on the child's health.

Fever is one of the most common symptoms in childhood and its incidence among children under five years is reported as 19-30 % of all patients presenting to the emergency room out of which 1.6-3% are diagnosed with

occult bacteraemia.[1] Fever is defined as temperature elevation of greater than 38ºC or 100.4ºF.[2] Childhood fever commonly occurs due to infections and occasionally due to inflammatory diseases, neoplasms and other causes.[3] Most of the time, fever of short duration is associated with viral infections which are seasonally occurring and self-limiting in nature.

Fever has a beneficial effect in the host by boosting the immune reactions such as phagocytosis, interferon and antibody production against microorganisms. Several studies have reported that fever in children generates considerable concern among parents since they believe that fever is harmful. Children may experience poor activity, loss of appetite, headache, dehydration or febrile seizures during the febrile episode.[3,4] Currently there is no evidence to believe that high grade fever leads to brain damage or other bodily harm. Thus, treatment of every episode of fever is not justified in healthy children except for those children with previous history of febrile seizures.

There is variability in the time when the child is taken to health facility for treatment. Parents may seek treatment within a few hours of developing fever while others seek medical care after a few days of initiating home treatment. Parents are concerned about immediate control of fever for which they adopt a variety of measures including administering antipyretic drugs and tepid sponging. Fever is usually recognized by the parent by tactile assessment and some parents administer antipyretic medication at home before visiting the hospital. Parents also differ in their attitudes regarding measuring body temperature.[4] Although rectal temperature is regarded as the gold standard for temperature recording, NICE guidelines recommend using axillary temperature assessment for children between 4 weeks and 5 years.

Paracetamol is the most common antipyretic used in children which can be purchased over the counter. Paracetamol is available in different formulations as drops, syrups, tablets, suppositories and injectable forms. Fixed drug combinations of paracetamol with anti-histaminic and nonsteroidal anti-inflammatory drugs maybe inadvertently administered. Although paracetamol is considered as a safe drug, frequent drug administration or high drug dosage may produce toxicity while under-dosing may be ineffective for temperature reduction. Some parents prefer injections for immediate fever control and antibiotics as well.

Parents are concerned about fever and its potential complications.[5] Since the general level of parental knowledge on treating paediatric fever as well as parental attitudes in semi-urban Chennai are unknown this study was undertaken. This study has been conducted with the aim of studying the knowledge, attitudes and practices of parents towards fever and fever management in children in rural south India.

METHODS

The study is questionnaire based, cross-sectional, prospective study. The duration of study is four months.

The study population of Indian parents of children age between 6 months to 10 years, recruited using convenience sampling. The sample size is of 100 parents.

Inclusion criteria

- Parent of all children between age 6 months to 10 years.

Exclusion criteria

- Parents who were not willing to participate in the study.

It is a questionnaire-based study. This study was conducted in the paediatric out-patient department during February to May 2018 at Saveetha Medical college, Chennai. Institutional ethics committee approval was obtained. A questionnaire was prepared to study the knowledge, attitude and practices of parents towards fever and management in children. A literature search to identify similar research studies and current practices in management of fever in children was performed. The content and face validity of the questionnaire was done by asking eight subject experts in peadiatric to systematically review the questionnaire for representation, clarity and relevance. The questionnaire was translated in local language in Tamil. The questionnaire was pilot tested by administering to ten parents in OPD and suitable modifications were made.

The questionnaire had two sections, first section for obtaining demographic data such as relationship to the child, age of parent, first time parent or not, address, qualification and profession Second section contained 19 items to study the knowledge, attitudes and practices of fever. The items were written in accordance with current best practices for fever management in children. Initial five items were targeted at assessing knowledge with yes/no answer format.

To assess the attitudes and practices of parents, 14 items were prepared for rating responses on a 5- point Likert scale as never /rarely /sometimes /frequently / always. Some of the items were I am very anxious when my child is suffering from fever, I am sleepless at night till my child is completely alright, I confirm fever in my child by touching and feeling the body temperature, I confirm fever in my child by using a thermometer, I consult the doctor immediately when my child has fever, I give only home remedies for my child without antipyretics, I treat my child with antipyretic by buying from pharmacy directly etc. The questionnaire was administered to a convenience sample of 100 parents visiting the paediatric

outpatient department who were enrolled after obtaining written consent and analyzed.

Statistical analysis

SPSS statistical analysis software.

RESULTS

As observed in Table 1, total of 100 parents visiting paediatric outpatient department participated in the study by filling the questionnaire. Most of participants were mothers (69%), the commonest age of parent was between 20-30 years (51%) and 26% were first time parents. Most of parents had studied till intermediate school (69%) and majority were from non-health industry (97%).

Table 1: Demographic data of parents participating in the study (n=100).

Variable		N (%)
Gender	Female	69
	Male	31
Age of parent	20-30	51
	31-40	37
	41-50	8
	>50	4
Whether first time parent	Yes	26
	No	74
Qualification	Elementary school	15
	Intermediate school	69
	High school	15
	University	1
Profession	Health industry	3
	Non-health industry	97

As seen in (Table 2), which has questions on parental knowledge about childhood fever, 42% parents were aware of occurrence of fever when body temperature was raised above 100.4ºF and 67% parents believed that fever could cause harmful effects like convulsions and dehydration delirium whereas 61% parents believed that consumption of large doses of antipyretic is harmful. Majority of parents 87% were aware that vaccinations can cause fever. It was noted that majority of parents 67% were unaware of the common causes of fever in children like viral infections, malaria or urinary tract infection.

While assessing the attitudes of parents as seen in (Table 3), 82% of parents declared that they had sleepless nights whenever their child was febrile and 73% are anxious always or sometimes when the child develops fever. About 80% stated that they have fear while giving antibiotics prescribed by the doctor. Most parents 95% confirm the presence of fever by tactile assessment whereas 18% reported using a thermometer to record fever.

In this study, it was seen that around 75% of the parents preferred to consult the pediatrician immediately. Half the participants stated that they start self-treating their child with antipyretics such as paracetamol immediately. Majority of the parents, 83% preferred to give one antipyretic rather than giving multiple antipyretics. 93% of parents said that they administered the dose of antipyretic only after discussion with the doctor and 70% adopted other measures such as body sponging to reduce fever. Only 15% parents treated the child by buying the drugs over the counter from the pharmacy. It was seen that 53% parents preferred using injections to reduce fever than oral medications.

DISCUSSION

Parents play an important role in recognizing and treating paediatric fever as well as initiating home treatment. Individual parental behaviors which can widely differ across the community are affected by their educational status and interlinked with sociocultural factors which mould the way people think about health and illness. In the present study 40% parents were aware of presence of fever when temperature was greater than 38˚C compared with an Irish study in which about 63.1% of parents were able to correctly identify fever.[6] In a Danish study conducted on twenty-one parents regarding knowledge and attitudes of parents towards fever, five themes emerged including parental concern, help-seeking behavior, parental knowledge, parent fever management practices and initiative.[7] In this study majority of parents seemed to be aware of fever developing following immunizations. Parental anxiety and concern were found to be high in the present study as 67% reported to be very anxious most of the time, 11% were anxious sometimes and 27% did not have any anxiety. Attitudes of parents can strongly influence their perception of disease, reaction and responses. In a Taiwan study, most parents followed Western medical advice to manage childhood fever and 31.1% of parents combined this with traditional folk treatments.[8] Fear or fever phobia which may arise in parents is understandable considering the risk of developing febrile seizures and brain injury due to hyperpyrexia.[9,10] This phobia can make them overtreat their child leading to drug overdosage causing complications. In a study conducted in USA to assess parent management of child after vaccination, it was observed that antipyretic use in the first 48 hours after vaccination was 64%, primarily to prevent and/or treat fever and pain.[11]

Parent concern can also lead to unnecessary administration of parenteral injections. Parental anxiety and concern was found to be quite high in the present study and as much as 87% parents said that they spent sleepless nights which was similar to a Latino study which was a questionnaire based targeting 180 parents and it was seen that 90% of Latino parents were very worried, 6% were somewhat worried about the potential harm caused by fever to their child. In the same study about 57% parents agreed that fever can be caused by an infection like a virus.[12]

In a study conducted on Latino parents, 76% parents stated that they owned a thermometer and checked their child's temperature using it. In the present study very few parents (18%) admitted to using thermometer and majority parents 95% assessed their child by tactile assessment before initiating on medication.[12] In a Californian study, 35% mothers stated that they used a thermometer to measure the temperature.[13] Tactile temperature assessment although convenient is not accurate. Educational interventions will be necessary to teach parents about measuring fever with a thermometer before administering medication. Nowadays digital thermometers are widely available and easy to use compared to glass thermometers.

Table 2: Parental knowledge regarding childhood fever (n=100).

Question	Yes n (%)	No n (%)
I consider body temperature above 100.4ºF as fever.	42	58
Consumption of large dose of antipyretic drug during a high fever is dangerous.	61	39
I am aware of the side effects such as seizure which untreated fever may cause.	67	33
I am aware of the common causative factors of fever such as viral infection, malaria or urinary infection.	33	67
I am aware of the child immunization for diphtheria, tetanus vaccine causes fever.	87	13
I am aware of the side effects such as dehydration which high fever may cause.	67	33

Table 3: Attitudes and beliefs of parents regarding childhood fever (n=100).

Question	Frequently/ Always n%	Sometimes n%	Rarely/ never n%
I am sleepless at night till my child is completely alright.	82	7	11
I get very anxious when my child is suffering from fever.	62	11	27
I have fear in giving antibiotics prescribed by the doctor when my child has fever.	67	13	20
I confirm fever in my child by touching and feeling the body temperature.	95	0	5
I confirm fever in my child by using a thermometer only.	18	1	81
I consult a paediatrician or physician immediately.	75	17	8
I treat my child by myself with antipyretics such as paracetamol immediately.	40	14	46
When the temperature is not going down, I give two or more antipyretic.	15	2	83
I give the right dose of antipyretic only according to my paediatrician's order.	93	1	6
I also use other remedies such as cold sponging for body temperature control in addition to antipyretic drug.	70	1	29
I give only home remedies and medicines for body temperature and no antipyretic.	21	4	75
I treat my child with antipyretic based on previous advice by doctor or paediatrician.	17	9	74
I treat my child with antipyretic by buying from the pharmacy directly.	15	7	78
I prefer using injections to reduce fever than oral medicines.	53	7	40

Paracetamol is the most common prescribed antipyretic drug in paediatric fever. Paracetamol at sub-therapeutic doses of 10 mg/kg are less effective for control of fever whereas dosage of 15 mg/kg are effective with a lower risk of adverse effects compared to other drugs like ibuprofen. Paracetamol induced hepatotoxicity in younger children is a well-known complication and fixed drug combinations of paracetamol with ibuprofen are not recommended, 61% parents agreed that consumption of large dose of antipyretics during fever is dangerous. Parents may believe that intramuscular injections for fever are superior to oral medication and have faster onset of action. In the present study almost half of the parents said that they preferred using injections to rapidly reduce fever compared to oral medications while 40% parents did not prefer injections to oral medications. A study which compared the pharmacokinetics of oral paracetamol versus intramuscular paracetamol given to patients with acute falciparum malaria with high fever revealed that both methods were able to achieve mean steady state therapeutic drug levels in serum.[14] During the dengue fever season, the physician must avoid

unnecessary intramuscular injections in managing febrile episodes. Unnecessary intramuscular injections can be associated with local complications such as pain swelling or abscess formation.

Majority of parents consulted the doctor immediately and 40% of parents-initiated paracetamol therapy as soon as child had fever while 15% of parents bought over the counter medication. According to the NICE guidelines, tepid sponging is not recommended for fever reduction whereas other studies state that the effects of tepid sponging are marginal. On the contrary tepid sponging can lead to more discomfort, shivering and excessive crying. In this study large number of parents 70% used other remedies such as cold sponging for body temperature control in addition to antipyretics.

It is crucial for the medical professional to reassure parents, build confidence by health education and allay anxiety whenever the child presents with fever and this can lead to better and safer practices as well as lesser usage of intramuscular injections to children. Parent education and creating awareness about the do's and don'ts in fever treatment is the first step in management.

CONCLUSION

The study revealed presence of high levels of anxiety in majority of parents highlighting the need for reassurance by health professionals. Since most of the parents relied on tactile assessment for fever, there is a need to educate them about proper use of a thermometer for accurate detection and better assessment of fever. There is also an urgent need to educate parents about harmful effects of administering of intramuscular injections for reducing temperature. Healthcare professionals should play an important role in educating parents and strengthening their knowledge for managing common problems like febrile illness in children.

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