



Knowledge, Attitude and Practices of Mothers towards Fever and Its Home Management among Under Five Children in Kom Hamada City, Behira Governorate, Egypt

Manal Mohamed Alnaser Hassona^{1*}, Salwa Abd El-Mageed Atlam² and Safinaz El-Said Shalaby²

¹*Ministry of Health and Population, Faculty of Medicine, Tanta University, Egypt.*

²*Department of Public Health and Community Medicine, Faculty of Medicine, Tanta University, Egypt.*

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Fever is one of the most common presenting complaint in pediatric age and is the cause of nearly 70% of all pediatric clinic visits. Fever isn't a disease but a symptom of disease, so we need to do more to communicate the message to parents.

Aim: To assess knowledge, attitude and practices of mothers towards fever and its management at home among under five children and to find-out some factors influencing maternal knowledge, attitude and practices.

Subjects and Methods: A cross sectional study was carried out in Maternity and Child Health Care Center in Kom Hamada city, Behira Governorate. A sample of 384 mothers was included in the study. The study was done via a pre-designed questionnaire sheet filled through direct interview with target mothers to assess their knowledge, attitude and practice regarding fever management of their under five children.

Results: Most of the studied mothers had good knowledge (62%) and positive attitude (59.9%). But (39.3% and 38.8%) of them had bad and fair practice respectively. Bad practice was common in the age group 25-30, those having three or four children, urban residence and with decreased family income.

Conclusion: The results found that awareness was relatively good. The study highlights the numerous misconceptions regarding fever management. So health education of mothers is needed to improve mother's practice.

Keywords: Mothers; fever; home management; children.

1. INTRODUCTION

According to WHO, (2005) The healthy future of a society depends on the health of children, who are guardians of that future [1]. Reduction of the mortality rate in children under the age of five is one of the eight Millennium Developmental Goals of the WHO, (2015). Since mothers are usually the primary care givers for children especially under five years of age, it is vital to increase their knowledge related to the management of their children's illnesses [2]. Fever is one of the most common presenting complaints in pediatric and general practice and is the cause of nearly 70% of all pediatric visits. A number of studies have investigated mothers' knowledge, perceptions, and practices regarding childhood fever [3].

Fever is commonly defined as a temperature of 38°C or above [4]. Although fever is well known to be a natural defense mechanism, it is a remarkable source of fear for families. Even a slight increase in the body temperature of the child can stimulate efforts to reduce the temperature, and cause panic among family members. The anxiety and panic defined as fear of fever may sometimes cause mothers to use healthcare centers unnecessarily, as well as unwise treatment [5,6].

Mothers frequently perceive fever as a disease rather than as a symptom or sign of illness, as defined by Schmitt in 1980 who introduced the term "fever phobia" to describe mothers' fearful view of fever. Insufficient knowledge of mothers concerning the cause of fever, and misconceptions about its effects on their children's health frequently lead to excessive fear and anxiety [7].

Fever itself is not life-threatening unless it is extremely and persistently high, such as greater than 41.6 C (107 F) when measured rectally. Risk factors for worrisome fevers include age less than 2 years or recurrent fevers lasting more

than one week. Fever may indicate the presence of a serious illness, but usually, a fever is caused by common infections, most of which are not serious. The hypothalamus controls body temperature, it increases the body's temperature as a way to fight the infection. However, many conditions other than infections may cause a fever [8].

Fever in young children can be a diagnostic challenge for healthcare professionals because it is often difficult to identify the cause. In most cases, the illness is due to a self-limiting viral infection. However, fever may also be the presenting feature of serious bacterial infections such as meningitis or pneumonia. A significant number of children have no obvious cause of fever despite careful assessment. These children with fever without apparent source are of particular concern to healthcare professionals because it is especially difficult to distinguish between simple viral illnesses and life-threatening bacterial infections in this group. As a result, there is a perceived need to improve the recognition, assessment and immediate treatment of feverish illnesses in children [9].

Mothers tend to do aggressive handling towards an increase in body temperature of the child such as the giving antipyretic which is not required, which if the child is given excessively and inappropriately may cause complications and hepatotoxicity [10].

Mothers may occasionally use antipyretic drugs even at normal body temperatures, apply cold water or water with alcohol or vinegar to decrease body temperature, all of these practices are unnecessary and possibly even harmful for the child, and therefore negatively affect the child's health status [11,12].

Fever on its own does not require treatment, and guidelines recommend that antipyretics should only be used when the child is also distressed or in pain [4].

The UK-based National Institute for Health and Care Excellence (NICE) Guidelines discussed the assessment and management of feverish illnesses, especially home management of fever for children younger than 5 years [13].

Also, several national health agencies and medical societies have disseminated recommendations for healthcare practitioners and pamphlets for mothers with key steps to guide the management of fever symptoms. These steps include the method for measuring temperature, the threshold for defining fever, indications for starting antipyretic drugs [14,15]. Most healthcare professionals are conscious that fever in itself is not injurious to health; however, we need to do more to communicate the message to parents [16].

Minimizing the gap between recommendations and practices (by mothers) could improve the quality of care of children [17].

Proper management of feverish child at home is of utmost importance in alleviating child condition and minimizing the burden on limited health services. This is the motive behind initiation of this study. **The aim of this work was to** assess the knowledge, attitude and practices of mothers related to fever and its home management for their children

2. SUBJECTS AND METHODS

2.1 Study Design and Target Population

A cross sectional study design was conducted at Maternity and Child Health Care Center (MCHC) in Kom Hamada city, Behira Governorate, Egypt. The target population was mothers having child below 5 years old.

2.2 Sample Size

The minimum effective sample size was estimated to be 384 using the Epi Info program [15]. About 10% of the sample was added for the pilot the study.

2.3 Methods of Data Collection

The data was collected through direct interview with each mother attending the MCH center for any reason e.g. routine antenatal care, child vaccination or treatment and having under five children. According to the output of cases /day every 4th mother was included till the required

number is fulfilled. The study was pilot tested on 10% of the estimated sample (was not included in the study) to confirm validity as well as to detect the time taken for the interviewer to fill the questionnaire.

The questionnaire was extracted from previous literature [17,18]. It was composed of a part for socio-demographic information's of the participants and the other part assessed their knowledge, attitude and practices referred to National Institute for Health and Care Excellence (NICE) guidelines [19].

The following data were collected:

Sociodemographic Data: Age, number of children, age of youngest child, residence, education level of mother and father, occupation of mother and father and family income level.

Knowledge Data: Definition of fever, normal body temperature, methods of recognition of fever, part of the hand used to recognize fever, type of thermometer used for measurement of body temperature, site of measurement, time of keeping thermometer in body, fever is a disease or symptom, common causes of fever, symptoms associated with fever, benefits of low grade fever to the child, risks of fever for the child and treatment of fever.

Attitude Data: The preferred place for treatment of feverish child, the best way for home care to the capable of reducing fever, source for getting antipyretic drugs, the best method for calculating the dose of anti-pyretic, the suitable type of water used in compresses and the suitable part of the body to apply compress.

Practice of Mothers in the Last Attack of Fever: The first person consulted, the reason for choosing this person, methods of treating the child in the last attack of fever, the time for seeking medical advice, the way of calculating the dose of antipyretic drugs and the way of giving the dose of antipyretic drugs.

2.4 Scoring

Knowledge Scoring: Knowledge about fever and its management included 15 questions, 9 questions were scored by one for correct answer and zero for incorrect answer or don't know and the other 6 questions were scored by two for correct and complete answer, one for

correct and incomplete answer and zero for incorrect answer or don't know.

The total scores of knowledge' questions ranged from "0-21". It was categorized into three levels as the following:

- Poor knowledge < 50% (scored from 0-10)
- Fair knowledge 50%-75% (scored from 11-16)
- Good knowledge > 75% (scored from 17-21)

Attitude Scoring: Attitude towards fever management included 8 questions, each answer ranged from negative answer (scored 1) and positive answer (scored 2). The total scores of attitude' questions ranged from "8-16". It was categorized into two levels as the following:

- Negative attitude < 60% (scored from 8-12)
- Positive attitude \geq 60% (scored from 13-16)

Practice Scoring: Practice was assessed by inquiry using 7 questions about fever management; each answer was scored by zero for incorrect answer and was scored by one for correct answer. The total scores of practice ranged from "0-7". It was categorized into three levels as the following:

- Bad practice < 50% (scored from 0-3)
- Moderate practice 50-75% (scored from 4-5)
- Good practice > 75% (scored from 6-7)

2.5 Statistical Analysis

The collected data were organized, tabulated and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 21, SPSS Inc. Chicago, IL, USA). For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, which describe a categorical set of data by frequency, percentage or proportion of each category, comparison between two groups and more was done using Chi-square test (χ^2).

3. RESULTS

The study included 384 mothers having preschool child from those attending MCH in Kom Hamada city, Al Beheira governorate to study their KAP regarding Home management of fever among their preschool children. The

study revealed the following results:

- 1- Level of knowledge, attitude and practice regarding home management of fever:

The study revealed that fair and good level of knowledge was reported among about 2 thirds and one third respectively of studied (Fig. 1). Regarding attitude of mother, it was found that 59.9% had negative attitude while 39.1 showed positive attitude (Fig. 2).

The results showed that good level of knowledge was found among 21.9% only of the studied mothers while fair and low knowledge level was recorded among 38.8% and 39.3% respectively (Fig. 3).

- 2- Relationship between KAP of studied mothers regarding fever and its home management and their sociodemographic characteristics

Table 1 shows the relationship between knowledge level of the studied mothers about fever and its home management and their socio-demographic data. There were statistically significant differences between them in all items.

Table 2 shows the relationship between attitude level of the studied mothers towards fever and its home management and their socio-demographic data. There were statistically significant differences between them according to no. of children, education level of the father and family income level.

Table 3 shows the relationship between practice level of the studied mothers towards fever and its home management and their socio-demographic data. There were statistically significant differences between them in all items.

Table 4 show the correlation between total scores of knowledge, attitude and practice towards fever and its home management and age of mothers and age of the youngest child of the studied mothers. It show that there were highly statistically positive correlation between them according to total scores of knowledge and each of age of mother and age of the youngest child and also between total practice scores and age of the youngest child while according to total attitude scores there were negative statistically significant correlation between total attitude scores and age of mother.

Table 1. The relationship between level of knowledge of the studied mothers and their socio-demographic data

Socio-demographic data	knowledge level of the studied mothers (n=38)						X ² P value
	Fair (n=146)		Good (n=238)		Total (n=384)		
	n	%	n	%	n	%	
•Age of mother:							
≤25	59	62.1	36	37.9	95	24.7	41.766
>25-30	51	40.8	74	59.2	125	32.6	0.0001*
>30-43	36	22.0	128	78.0	164	42.7	
•No. of children:							
One & Two	70	35.9	125	64.1	195	50.8	17.190
Three & Four	73	46.8	83	53.2	156	40.6	0.0001*
Five & Six	3	9.1	30	90.9	33	8.6	
•Age of the youngest child:							
≤1	72	40.2	107	59.8	179	46.6	36.154
>1-3	60	55.0	49	45.0	109	28.4	0.0001*
>3-5	14	14.6	82	85.4	96	25.0	
•Residence:							
Urban	63	31.7	136	68.3	199	51.8	7.096
Rural	83	44.9	102	55.1	185	48.2	0.008*
•Education level of the mother:							
Illiterate	3	33.3	6	66.7	9	2.3	38.071
Primary school	9	50.0	9	50.0	18	4.7	0.0001*
Secondary school	95	52.8	85	47.2	180	46.9	
University degree	39	22.7	133	77.3	172	44.8	
Above university educ.	0	0	5	100	5	1.3	
•Occupation of mother:							
House wife	132	50.2	131	49.8	263	68.5	52.452
Employed	14	11.6	107	88.4	121	31.5	0.0001*
•Education level of the father:							
Illiterate	3	100	0	0	3	0.8	47.192
Primary school	0	0	6	100	6	1.6	0.0001*
Secondary school	89	53.3	78	46.7	167	43.5	
University degree	54	30.0	126	70.0	180	46.9	
Above university educ.	0	0	28	100	28	7.3	
•Occupation of father:							
Not a government employee	80	55.9	63	44.1	143	37.2	31.061
Government Employee	66	27.4	175	72.6	241	62.8	0.0001*
•Family income level:							
Sufficient	90	34.1	174	65.9	264	68.8	13.458
More than sufficient	0	0	8	100	8	2.1	0.001*
Less than sufficient	56	50.0	56	50.0	112	29.2	

4. DISCUSSION

The current study showed that as regard the relationship between knowledge level of the

studied mothers about fever and its home management and their socio-demographic data. There were statistically significant differences between them in all items.

Table 2. The relationship between level of attitude of the studied mothers and their socio-demographic data

Socio-demographic data	Attitude level of the studied mothers						X ² P value
	Negative (n=154)		Positive (n=230)		Total (n=384)		
	n	%	n	%	n	%	
-Age of mother:							
≤ 25	32	33.7	63	66.3	95	24.7	2.616
>25-30	50	40.0	75	60.0	125	32.6	0.270
>30-43	72	43.9	92	56.1	164	42.7	
-No. of children:							
One & Two	73	37.4	122	62.6	195	50.8	31.745
Three & Four	81	51.9	75	48.1	156	40.6	0.0001*
Five & Six	0	0	33	100	33	8.6	
-Age of the youngest child:							
≤1	74	41.3	105	58.7	179	46.6	3.698
>1-3	36	33.0	73	67.0	109	28.4	0.157
>3-5	44	45.8	52	54.2	96	25.0	
-Residence:							
Urban	79	39.7	120	60.3	199	51.8	0.028
Rural	75	40.5	110	59.5	185	48.2	0.866
-Education level of the mother:							
Illiterate	6	66.7	3	33.3	9	2.3	7.184
Primary school	9	50.0	9	50.0	18	4.7	0.126
Secondary school	74	41.1	106	58.9	180	46.9	
University degree	65	37.8	107	62.2	172	44.8	
Above university educ.	0	0	5	100	5	1.3	
-Occupation of mother:							
House wife	105	39.9	158	60.1	263	68.5	0.011*
Employed	49	40.5	72	59.5	121	31.5	0.915
-Education level of the father:							
Illiterate	0	0	3	100	3	0.8	53.435
Primary school	6	100	0	0	6	1.6	0.0001*
Secondary school	93	55.7	4	44.3	167	43.5	
University degree	55	30.6	125	69.4	180	46.9	
Above university educ.	0	0	28	100	28	7.3	
-Occupation of father:							
Not a government employee	59	41.3	84	58.7	143	37.2	0.126
Government Employee	95	39.4	146	60.6	241	62.8	0.722
-Family income level:							
Sufficient	92	34.8	172	65.2	264	68.8	19.240
More than sufficient	0	0	8	100	8	2.1	0.0001*
Less than sufficient	62	55.4	50	44.6	112	29.2	

As regard the relationship between attitude level of the studied mothers towards fever and its home management and their socio-demographic data. There were statistically significant differences between them according to number of children, education level of the father and family income level.

Our results were supported by study of Al Ateeq et al. [20], as they reported that most of the studied parents (54%) identified normal

temperature and 64% defined fever correctly. Fifty-six percent identified high fever, whereas 47% could not. Almost all the parents (95%) believed fever is harmful to their children. Forty-five percent of the parents thought they have enough information about fever, 31% do not, and 23% were not sure. In regard to fever complications, febrile convulsion was considered by 74% of parents, loss of consciousness and dehydration by 40%, brain damage by 32%, hearing loss by 27%, and

organ damage by 13% [20]. However, knowledgeable parents in this study, in regard to fever definition, were more compared to the other local study done by Al-Eissa et al. [21], where >70% of parents have a poor

understanding of the definition of fever and high fever [21]. Similarly, international studies were done earlier reported poor knowledge of parents about normal and high temperature [7].

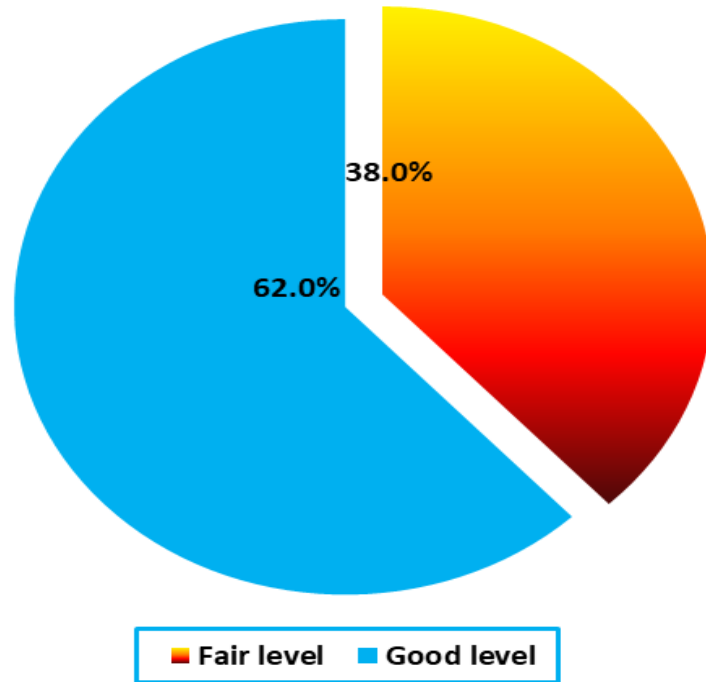


Fig. 1. Level of knowledge of the studied mothers about fever and its home management

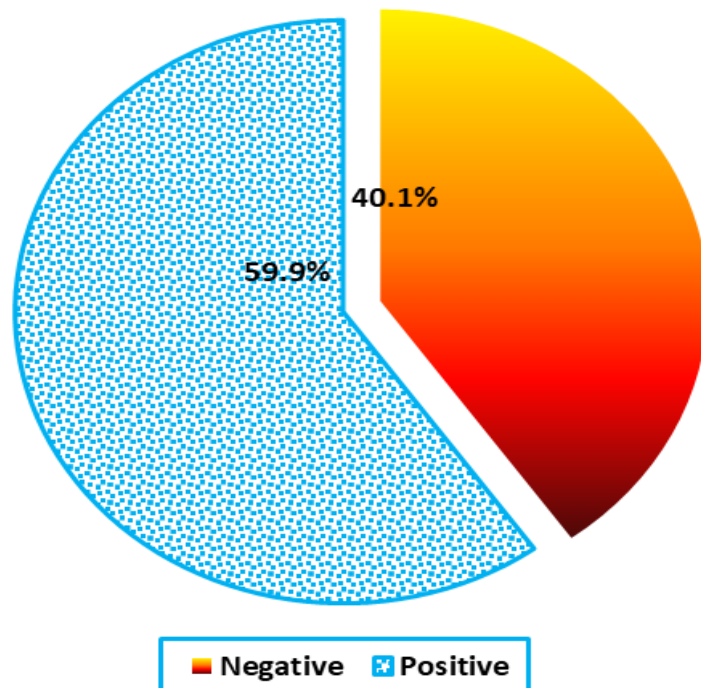


Fig. 2. Level of attitude towards fever and its home management of the study mothers

Table 3. The relationship between level of practice of the studied mothers and their socio-demographic data

Socio-demographic data	Practice level of the studied mothers (n=384)								X ² P value	
	Bad (n=151)		Moderate (n=149)		Good (n=84)		Total			
	n	%	n	%	n	%	n	%		
•Age of mother:										
≤ 25	45	47.4	34	35.8	16	16.8	95	24.7	25.043	
>25-30	56	44.8	31	24.8	38	30.4	125	32.6	0.0001*	
>30-43	50	30.5	84	51.2	30	18.3	164	42.7		
•No. of children:										
One & Two	64	32.8	72	36.9	59	30.3	195	50.8	24.243	
Three & Four	74	47.4	67	42.9	15	9.6	156	40.6	0.0001*	
Five & Six	13	39.4	10	30.3	10	30.3	33	8.6		
•Age of the youngest child:										
≤1	70	39.1	71	39.7	38	21.2	179	46.6	12.133	
>1-3	52	47.7	42	38.5	15	13.8	109	28.4	0.016*	
>3-5	29	30.2	36	37.5	31	32.3	96	25.0		
•Residence:										
Urban	90	45.2	80	40.2	29	14.6	199	51.8	13.937	
Rural	61	33.0	69	37.3	55	29.7	185	48.2	0.001*	
•Education level of the mother:										
Illiterate	3	33.3	0	0	6	66.7	9	2.3	74.231	
Primary school	18	100	0	0	0	0	18	4.7	0.0001*	
Secondary school	85	47.2	51	28.3	44	24.4	180	46.9		
University degree	45	26.2	93	54.1	34	19.8	172	44.8		
Above university educ.	0	0	5	100	0	0	5	1.3		
•Occupation of mother:										
House wife	128	48.7	73	27.8	62	23.6	263	68.5	45.886	
Employed	23	19.0	76	62.8	22	18.2	121	31.5	0.0001*	
•Education level of the father:										
Illiterate	3	100	0	0	0	0	3	0.8	82.034	
Primary school	0	0	0	0	6	100	6	1.6	0.0001*	
Secondary school	100	59.9	45	26.9	22	13.2	167	43.5		
University degree	40	22.2	94	52.2	46	25.6	180	46.9		
Above university educ.	8	28.6	10	35.7	10	35.7	28	7.3		
•Occupation of father:										
Not a government employee	77	53.8	39	27.3	27	18.9	143	37.2	20.961	
Government Employee	74	30.7	110	45.6	57	23.7	241	62.8	0.0001*	
•Family income level:										
Sufficient	70	26.5	115	43.6	79	29.9	264	68.8	69.337	
More than sufficient	8	100	0	0	0	0	8	2.1	0.0001*	
Less than sufficient	73	65.2	34	30.4	5	4.5	112	29.2		

In reviewing more studies conducted by Kelly et al. [22], and Talebi et al. [23], parents found to have better level of knowledge regarding fever, and most parents described normal and febrile temperature. The reason for this, possibly, is due to increasing health education activities of public, especially parents for their kid's health.

However, Said & El-Maghawry [24], revealed that about the attitude of mothers towards febrile

convulsion, this study showed that 53.1% strongly disagreed that an FC attack is a life-threatening event or FC (Febrile convulsions) can cause brain damage [24], also, Barzegar et al. [25], reported that the majority of mothers believed that FC episode is a serious condition which can cause brain damage [25]. In Iraq, a study conducted by Shibeab et al. [26], found that 69% of parents believed that FC attack is a life threatening event, and regarding whether it

can cause brain damage or not, 73% of them thought that brain damage will occur. These results can explain the parent's fear and anxiety during the attack of convulsion which makes it difficult for them to deal with.

In contrary with our results, study of Al Ateeq et al. [20], as they reported that no difference in knowledge or practice was found in relation to difference in demographic characteristics of participants [20].

Our results were supported by study of Arica et al. [27], as they reported that there was a highly significant relationship between the knowledge on fever and mothers' age and education level ($p < 0.01$); level of knowledge is increased in line with older ages and higher level of education. There is a highly significant reverse relationship between knowledge of fever and the number of children ($p < 0.01$); knowledge of fever is increased in line with a decreasing number of children. There was a highly significant relationship between the correct body temperature considered as fever and mothers' level of education ($p < 0.01$) [27]. Furthermore, Hussain et al. [28], revealed that relationship and employment status of parents were found to be significantly associated with knowledge scores of parents for childhood fever. However, for attitude score, only age and

number of children in the family found significant association, whereas for practice score, relationship, age, education level, and number of children in the family had significant association [28]. These variables were further entered into the multivariate analysis to find the independent correlates of knowledge, behavior, and management practices for fever. Parents having education more than college, being employed, and the number of children were positively correlated with good knowledge of parents. However, being father, having parents aged more than 37 years, and number of children was positively correlated with good attitude of parents. Regarding good practices for management of fever, parents having education more than college and number of children were positively correlated.

As regard the relationship between practice level of the studied mothers towards fever and its home management and their socio-demographic data. There were statistically significant differences between them in all items.

Our results were supported by study of Anokye et al. [29], as they revealed that the proportion of mothers who will administer medication for fever in their children was 43% [29]. This was far lower than the 88% reported in Australia and even far lower than the 94% reported in France [30,31].

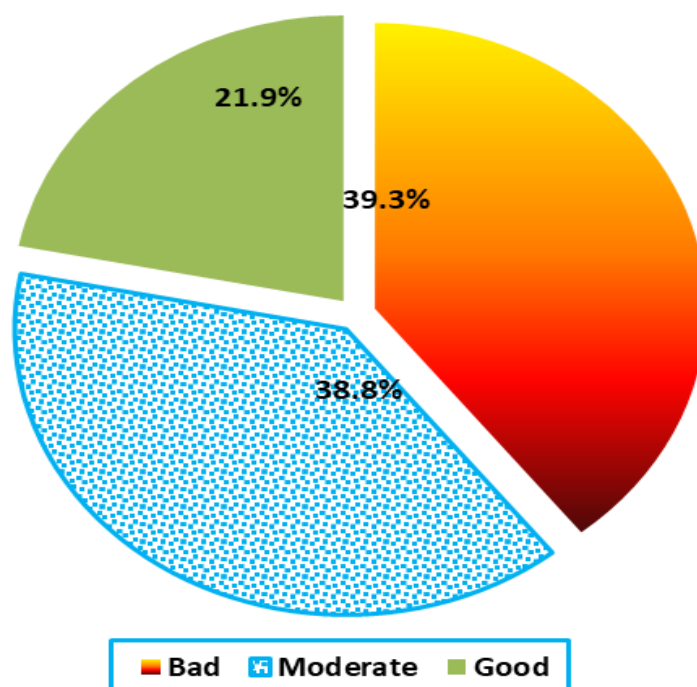


Fig. 3. Level of practice among the studied mothers towards fever and its home management

Table 4. The correlation between total scores of knowledge, attitude and practice and age of mothers and age of the youngest child of the studied mothers

Variables	Total scores of the studied mothers (n=384)					
	Total knowledge scores		Total practice scores		Total attitude scores	
	r	P	r	P	r	P
Age of mother	0.369	0.0001*	0.037	0.465	-0.107	0.037*
Age of the youngest child	0.118	0.020*	0.173	0.001*	0.006	0.913
Total practice scores	0.300	0.0001*	-	-	-	-
Total attitude scores	0.257	0.0001*	0.267	0.0001*	-	-

The percentage gap in the medication use may be due to their location and access to drugs and to some extent their knowledge in other methods of managing the condition. A number of the respondents in the study reported that fever was caused by spirits. It is likely that these people may focus management on dealing with the spirit behind the sickness. Regarding use of medications to treat fever, antipyretics such as paracetamol and Ibuprofen were used. Health professionals frequently recommend treatment regimens for children with fever that either combine or alternate paracetamol and ibuprofen. However, the consequences of under- and over-treatment with antipyretics including mucosal lesions, gastrointestinal discomfort such as dyspepsia, and severe gastrointestinal complications such as perforated ulcer, gastrointestinal bleeding has been reported [32].

Furthermore, Athamneh et al. [33], indicated that a high proportion of parents use rectal route for temperature measurement (37%) and medication administration (50%). Approximately half the parents administer treatment when temperature is above 38°C (48%) and only 10% based their calculation of dose on weight. Approximately half the parents reported deciding the right antipyretic medication (59%) and the right dose (48%) to administer to their un-well child using previous advice they have had from their pediatrician [33].

In the study of Chiappini et al. [34], physical methods of temperature control were used by 302 (77.8%) parents. About 5.0% of parents (n=19) declared that they would give antipyretics for body temperature <37.8°C. Most of parents reported using acetaminophen (n=375; 96.6%) or ibuprofen (n=113; 29.1%) to lower the body temperature, but, worrisomely, some parents (n=2; 0.5%) reported using aspirin and 0.7% (n=3) other drugs such as steroids or

metamizole. Twenty-one percent of parents (n=83) declared to use usually combined or alternating administration of ibuprofen and acetaminophen [34].

As regard the correlation between total scores of knowledge, attitude and practice towards fever and its home management and age of mothers and age of the youngest child of the studied mothers. It show that there were highly statistically positive correlation between them according to total scores of knowledge and each of age of mother and age of the youngest child and also between total practice scores and age of the youngest child while according to total attitude scores there were negative statistically significant correlation between total attitude scores and age of mother.

In the study of Kheir et al. [35], about two thirds (62%) of the mothers believed that febrile convulsions can be outgrown, while the rest of them believed otherwise. Mothers who scored poor on the attitude scale comprised 26%; while 49% scored average and 25% of them had good attitude. There were 56% of mothers who felt confident about giving their children rectal diazepam at home, while the remainder (44%) were not sure; 66% of mothers agreed that they would administer rectal diazepam by themselves if trained while the remaining 34% thought that it is best given by someone else. When mothers were asked if they would prefer to use the new nasal Midazolam or the rectal diazepam at home; 69% preferred to use the rectal diazepam and the remaining 31% didn't mind to give midazolam a trial [35].

Furthermore, Hussain et al. [28], revealed that the majority of parents (80%) believed that seizure as the consequence of untreated high fever and 10% believed that it can cause delirium. Nearly about three fourth of them

(72.5%) indicated that 40.7 to 43.2 °C as the highest temperature that can be reached if untreated. Ninety percent of the parents believed that high dose of antipyretic drug is dangerous without any efficacy. However, over 55% of them believed that antibiotics can reduce high fever and 35% of them prefer to go to emergency room in case of fever. Around 78.4% of parents exhibited poor attitude toward fever management [28].

5. RECOMMENDATIONS

- Training courses for health care workers to improve their knowledge about fever and to strengthen their communication skills with parents.
- Health education for parents when they attend with their children for regular check-up or vaccinations should be used to provide information on common childhood symptoms such as fever and how to deal with a feverish child at home via making educational seminars.
- Cooperation between healthcare professionals and parents needs to grow in order to increase parental knowledge regarding definition, causes and management of fever.
- Pharmacists are ideally located to provide timely, accurate and accessible support to parents, which could relieve the workload and time pressure for general practitioners by giving information about correct uses, doses and side effects of drugs.
- Health administrators should make materials available for effective health education such as written instructions which can be given to parents to take home or labels at the health care centers.
- Mass media should participate to improve knowledge and encourage mothers for a good practice according to certified guidelines.

6. CONCLUSION

We uncovered several aspects including inadequate parental knowledge regarding fever leading to erroneous approach to fever such as inappropriate usage of antipyretic drugs and antibiotics, improper use of physical methods of lowering and measuring fever, wrong perception of fever as a disease rather than as a symptom or sign of illness and misconceptions about its effects on their children's health.

CONSENT

As per international standard, parental written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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