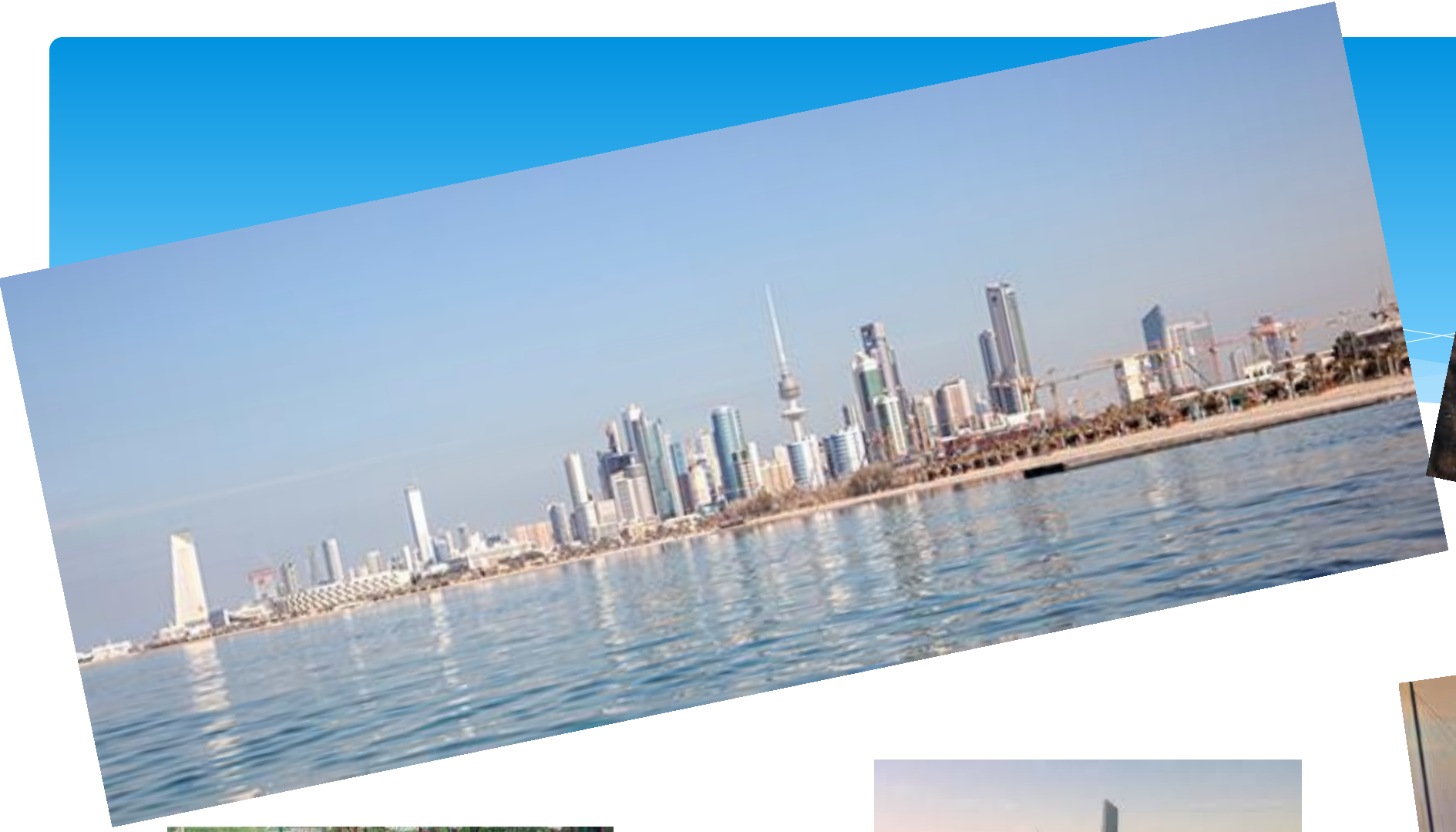

Kuwaiti parents knowledge of their children's fever and their patterns of use of Over the Counter Antipyretics

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Introduction

* Fever and Febrile illness are some of the most commonly treated childhood illnesses , which consistently causes high levels of anxiety in parents and professionals alike, who fear that it may be associated with increased morbidity, such as seizures, brain damage or death.

* Two decades back Schmitt, described “fever phobia”, and parents concern about the harmful effects of fever .

Schmitt B. Fever phobia: misconceptions of parents about fevers. Am J Dis Child. 1980;134(2):176–81

* Since that time little change has happened in parents negative attitude towards fever and it has been confirmed that their perceptions are largely unjustified .
* Many parents consider fever a disease with the continuation of fever phobia and overuse of antipyretics to reduce it.

Arica SG, Arica V, Onur H, Gulbayzar S, et al. Knowledge, attitude and response of mothers about fever in their children. Emerg Med J. 2012;29(12)

Objectives

* Identify Kuwaiti parent's knowledge of fever and their attitudes about it.
* Identify patterns of use of OTC antipyretic and
* Fever management practices at home.

According to the results, educational programs can be developed to target specific modifiable factors such as knowledge deficits, negative attitudes and unnecessary, unsafe practices.

Research Plan & Methodology:

* **Study design:**
* - A descriptive cross-sectional study, in which Kuwaiti parents were recruited to measure their medical knowledge and management level to treat their children's fever.
* Inclusion criteria

  - Kuwaiti parents of children (either a mother or a father, but only one parent per family) aged between 6 months and five years, who have ever given their children an antipyretic medication and who have agreed to answer the questionnaire.
* **Study sample**

  - Non-probability convenient sampling method was used. Total sample size was 600 parents.

* **Data collection**
  * Collection of data was over six month's period from 1/9/2015 to 1/3/2016, using self-administered questionnaire.
  * Selection of data sample was from the six Kuwaiti governorates.
  * Collection was from; shopping centers, hospitals, housing areas, and outpatient clinics as well as kindergartens.

* **Questionnaire development**

The questionnaire was developed on the bases of other previous similar surveys.

  * Evaluate the parents' knowledge about fever in their children.
  * Explore the parent's patterns of use of OTC antipyretics and management practices of fever.
  * The instrument was piloted, and the final version consisted of 25 items.
    * Demographic data (6 items)
    * Parents' knowledge about fever (5 items),
    * Beliefs about fever (3 items),
    * General fever management practices (10 items) and
    * sources of fever management information (1 items).

Betz MG, Grunfeld AF. 'Fever phobia' in the emergency department: a survey of children's caregivers. Eur J Emerg Med.2006; 13,129-133.

* **Data analysis**
  * The questionnaires collected were hand-checked for completeness before data entry . For Statistical procedures we used SPSS
  * The descriptive statistics, frequencies, and percentages, were used to describe socio-demographic characteristics. Pearson Chi-square test of independence was used to test the association between educational status with mothers' perception of fever and fears. A p-value ≤ 0.05 was considered to be statistically significant.

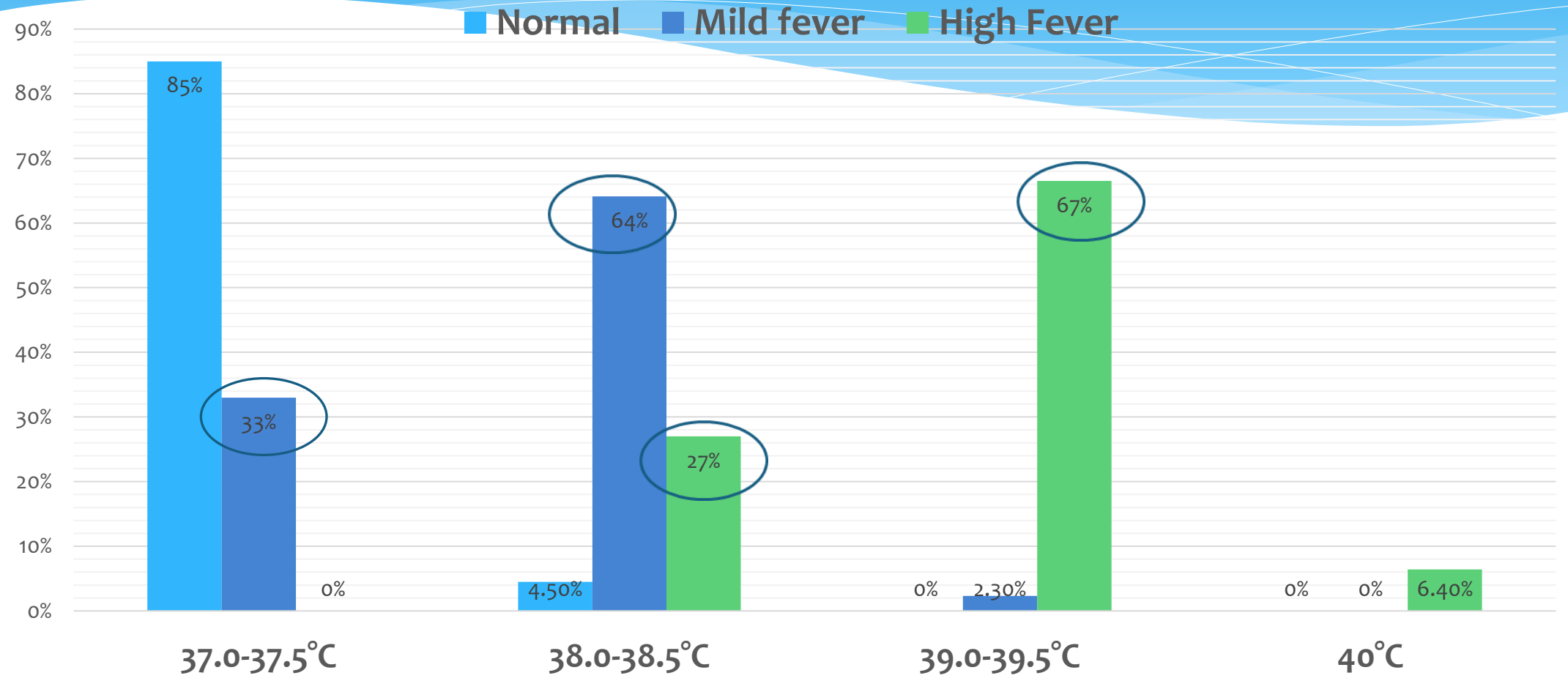
* Educational attainment was explored using ANOVA and Bonferroni post hoc tests, t-test and chi-squared tests as appropriate. Differences of P = 0.05 were considered statistically significant.

Results

* Over the study period, a total of 614 mothers participated in the study, with a response rate of 94.5%.

Demographic data of mothers participated in the study (n=614)	
Variable	n (%)
Age groups	(n)%
20-30	227(37)
31-40	283(46)
41-50	104(17)
Employment	
House wife	86(14)
Student	154(25)
Full time	307(50)
Part time	67(11)
Education	
Less than high school	55(9)
high school	118(19)
Diploma	234(38)
University	166(27)
Postgraduate	41(7)
Number of children	
1	239(39)
2	234(38)
3	98(16)
>3	43(7)

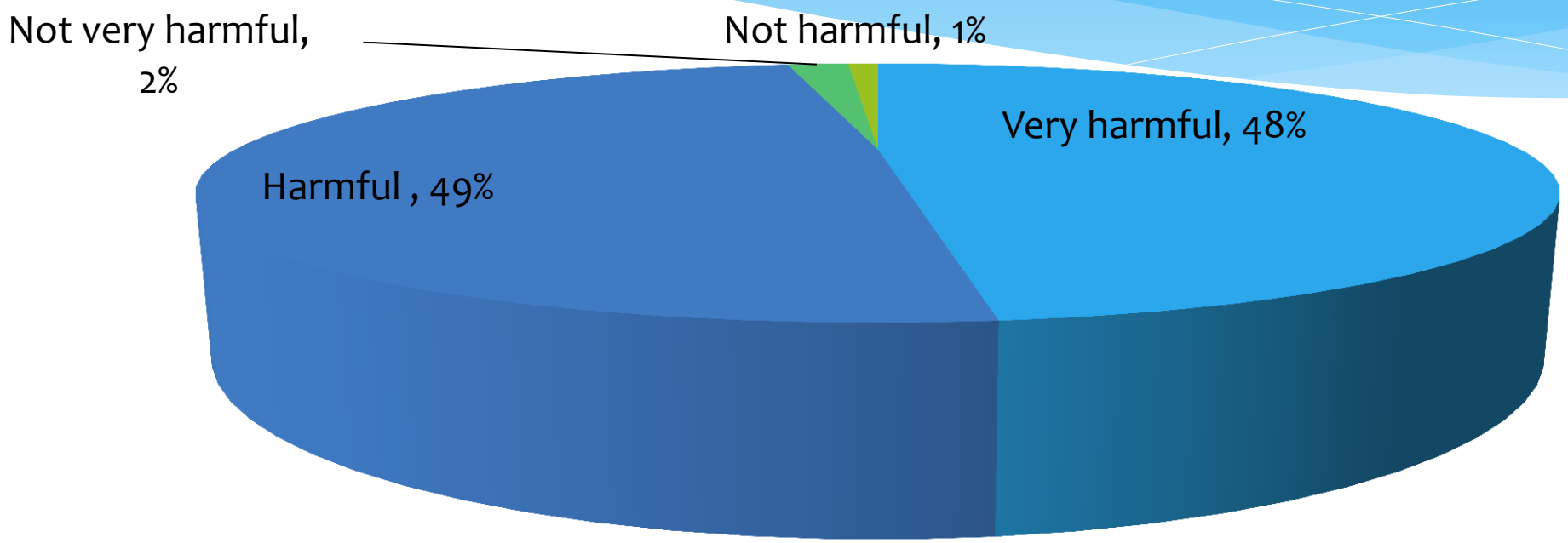
Different grades of temperature as stated by mothers



* Mild fever was reported to be ≤ 37.5 °C by 33.2 %(196) of mothers, and 27.1 %(166) considered a temperature ≤ 38.5 °C to be a high fever.

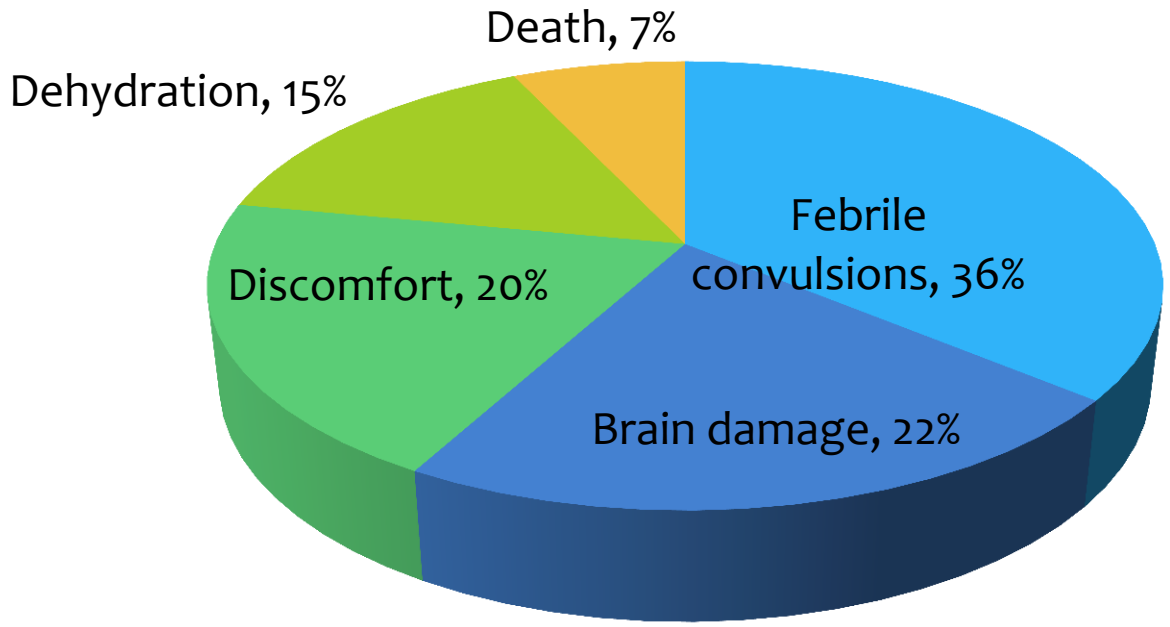
* Educational attainment significantly influenced parents' reports for high fever (F = 4.68, d.f. = 4, P = 0.001, n = 207).

Perceptions of mothers regarding the harm of fever



Almost all the mothers believed that fever could cause harm, and 48%(294) of them stated that fever is very harmful.

Perceptions of type of harm from fever



From the point of view of mothers ,harmful temperature ranged from 37.0 to 40.0°C with a mean (±SD) of 39.78°C (± 0.42).

The temperature at which antipyretic would be given also ranged from 37.0 to 40.0 °C but with a lower mean (±SD) of 38.24°C (± 0.52).

Means and Standard Deviations for the level of temperature which was considered as harmful fever and at which antipyretics are given.

Variables	n	min°C	max°C	M	SD
Harmful fever	614	37.00	40.00	39.78	0.42
Temperature at which antipyretic is given	605	37.00	40.00	38.24	0.52

* Educational attainment significantly influenced mothers' reports for a high fever, so mothers with postgraduate and university levels of educations reported lower temperatures for high fever than those with lower degrees. (F = 4.68, d.f. = 4, P = 0.001, n = 207)

Analysis of the correlation between the level of education and the level which was considered as high fever

Variable	η2	SS	df	F	p
(Intercept)	1.00	251434.10	1	1098292.02	< .001***
Postgraduate and University	0.03	4.28	4	4.68	.001**
Residuals		139.42	609		

* Partial η2 (partial eta squared)
* SS (Sum of squares)
* df (degrees of freedom for ANOVA)
* F (F ratio)
* p (probability value)

Analysis of the correlation between the perceptions of fever and degree of education

Chi-Square Test of Independence for level of education and the degree of harm of fever

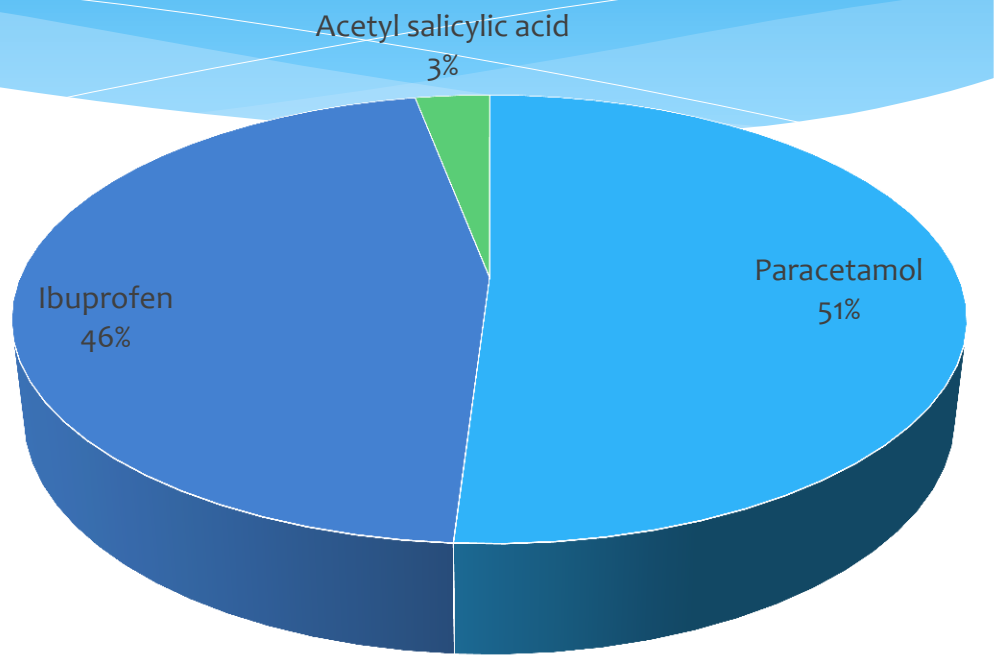
Level of education	*Very harmful*	*harmful*	*Not very harmful*	*Not harmful*
postgraduate	20(49%) [19.80]	51%(21) [20.20]	0 [0.81]	0 [0.20]
University	51(30%) [80.15]	100(60%) [81.78]	8%(12) [3.26]	2%(3) [0.82]
high school	57(48%) [56.97]	52%(61) [58.13]	0 [2.32]	0 [0.58]
diploma	140(60%) [112.98]	40%(94) [115.28]	0 [4.60]	0 [1.15]
less than high school	27(52%) [25.11]	48%(25) [25.62]	0 [1.02]	0 [0.26]

Note. χ^2 (df = 12) = 65.59, p < .001. Items in brackets represent expected cell frequencies

Patterns of antipyretics use

* Fifty-three percent of mothers (n=309) would give antipyretic medication when body temperature is ≤38 °C.

* The most commonly administered antipyretic was paracetamol.



More than half (61%, 375) of the mothers had alternated antipyretic paracetamol and ibuprofen.

* Alternating antipyretics was according to
  - doctor advice (45%,169),
  - the return of fever (34%,127), or
  - lack of response after using one antipyretic (21%,79).

* 81% (n=495) of the mothers believes that feverish children still need antipyretics even if they are active,
* 80 %(n=494) of the parents reported awakening their child from sleep to give antipyretics.

* Forty-five percent (274) of mothers thinks that antipyretics are without potential harm.
* Level of education had a positive impact on the perception of fever [$\chi 2$ (df = 8) = 70.68, p < .001].

Fever management practices

	Always		Sometimes		Rarely		Never	
	no	%	no	%	no	%	no	%
Antipyretic	330	53.7%	225	36.6%	47	7.7%	12	2.0%
Temperature monitoring	305	49.7%	201	32.7%	89	14.5%	19	3.1%
Alcoholic compresses	301	49.0%	224	36.5%	26	4.2%	63	10.3%
Cold water compresses	276	45.0%	250	40.7%	76	12.4%	12	2.0%
Offering more fluids	268	43.6%	221	36.0%	112	18.2%	13	2.1%
Light clothes	235	38.3%	230	37.5%	137	22.3%	12	2.0%
Tepid water compresses	196	31.9%	218	35.5%	159	25.9%	41	6.7%
Medical consultation	189	30.8%	265	43.2%	140	22.8%	20	3.3%

Summary and conclusion

* Despite the prevalence of fever , correct management of febrile illness remains unclear in the general population .
* The knowledge of the parents about fever is still poor.
* Fever phobia" remains extremely widespread, with an overuse of antipyretics.
* Educated mothers showed better knowledge about fever.
* Similar to their international counterparts, the most consistently identified serious concern of Kuwaiti mothers was that high fevers if left untreated, are associated with febrile convulsions, brain damage, and death.

* The study showed the unnecessary use of antipyretics.
* Parents should be educated that antipyretics should, however, be used with discretion and not given automatically.
* Mothers who administer aspirin to reduce fever indicates a lack of awareness of the potential hazard associated with the use of acetylsalicylic acid, as the link between acetylsalicylic acid and Reye syndrome.
* The practice of alternating two types of antipyretics has become widespread at home .But does these practices supported by evidence and does it results in complications?

* Healthcare professionals have a duty of care to provide parents with accurate and consistent information about childhood fever based on the latest scientific evidence.
* It should be emphasized that fever not be an illness, but is, in fact, a physiological mechanism that has a beneficial effect in fighting infections, and interventions to reduce fever may negatively affect the outcome of the illness. Also, parents should realize that the primary goal for treating the febrile child should be to improve the child's overall comfort rather than focusing on the normalization of body temperature

Thank you for your attention