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ORIGINAL ARTICLE

Mothers' Knowledge Levels About Fever, Antipyretics, Febrile Illnesses, Antibiotic Use, and Febrile Convulsions

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Abstract

Introduction: We aimed to measure the level of knowledge about fever by reaching 300 mothers. If the level of information is found to be inadequate in accordance with the results, by alerting the authorities about the results and ensuring that they reach the public; We thought that it might be useful for many applications to hospitals, unnecessary antibiotic use, antibiotic resistance, reducing the panic level of families and relieving the state budget. As a matter of fact, we thought that the Ministry of Health is a valuable study to help the studies to be done today in order to shed light on how effective these advertisements are due to the fact that they were made before the public awareness activities and we published the information obtained today.

Methods: Study was conducted with 300 mothers who applied to Pediatric Clinics between 2009-2010 under the permission of the ethics committee. Aim of correcting existing mistakes and statisticing the information we should provide to mothers.

Results: 82% of the mothers who participated in our study had low socioeconomic level. Fever consciousness was low in 57% of our mothers. The rate of antibiotic use was 53%. According to the data of our study, 58% of mothers do not measure fever correctly. There is no fever measuring device in 45%.

Discussion and Conclusion: We found that mothers' awareness of fever, their behaviors about febrile convulsions, and their awareness of antibiotic use were insufficient. We determined that the mother being a housewife, the mother's education level being low, socioeconomic level score was low, her husband's occupation, her husband's education was low, and fever awareness and antibiotic use were negatively affected. When we consider the results, we anticipate that mothers should be informed about fever, that they will make unnecessary applications to the child and that they will prevent delayed and inadequate intervention.

Keywords: Fever in children; knowledge of fever; parental management of fever.

Unlike other branches, pediatricians are in contact not only with the patient, but also with their parents[1]. Insufficient knowledge of mothers about diseases often complicates the work of physicians who have to take anamnesis from mothers[2]. Fever is one of the issues that mothers panic the most. It is natural for people to panic about things they have no knowledge of. The fact that families are not informed adequately causes this panic atmosphere to continue and the trust of the physician to decrease, which leads to disruption of compliance with treatment[3]. This

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causes unnecessary drug use and increased workload[4,5]. The wrong attitudes of mothers about fever pave the way for febrile convulsions[6,7]. On the other hand, doctors are not aware of how much the public knows about fever, which is an easy subject for them, and they do not provide enough information about it[8,9]. Our aim in this study is to evaluate the knowledge of mothers who spend more time with the patient than we do and who will apply the prescription we give, about fever, temperature measurement, antipyretic and antibiotic use, and to obtain statistics about the information we need to give to the families.

Materials and Methods

This study was carried out by interviewing 300 volunteer mothers between June 2009 and March 2010 with the permission of the ethics committee. The mothers were interviewed face-to-face and a 37-question survey was conducted, including questions about socioeconomic level, fever measurement, antipyretic drugs, febrile illnesses, antibiotic use, and febrile convulsions. Mothers who have children with chronic diseases (such as chronic kidney failure, diabetes, spina bifida), who have received special health education, who work in a health care institution or who have worked before, were not included in this study.

In the study, 6 questions were asked to measure the socioeconomic level of the mothers. These questions were mother's profession, mother's education level, monthly income, number of children, whether the house was rented or their own house, and how the house was heated. SEL (socioeconomic level) was determined as low (0-4), moderate (5-8), good (8-12) by giving "0,1 or 2" points according to the answers received.

In addition, 9 questions were asked to measure the fever consciousness of mothers in the study. These questions were; was there a device to measure fever at home, from where they measured the fever, the fever measurement instrument, how many degrees it was they considered as fever when measured from the armpit, what they did first when the fever rised, what is used as an antipyretic drug, whether the dose of antipyretic was taken into account, how they adjusted the dose of antipyretic, how many hours apart they gived the antipyretic. According to the answers received, "0 or 1" points were given and fever consciousness was graded as low (0-5) and high[6-9].

In our study, 7 questions were asked that also measure the awareness of antibiotic use. These questions were as follows: Are antibiotics necessary for diarrhea?, are antibiotics necessary for flu, are antibiotics harmful, how long the prescribed antibiotic is used, should all febrile illnesses be treated with antibiotics, how they behave if they take their children with fever to the doctor and they are not prescribed antibiotics, and whether antibiotics prevent febrile seizures. According to the answers received, "0 or 1" points were given and awareness of antibiotic use was graded as low (0-4) and high[5-7].

This study was conducted using face-to-face interview technique with randomly selected mothers. The purpose and method of the study was explained to the mothers and necessary consents were obtained.

Results

82% of the mothers participating in our study had a low socioeconomic level. Fever consciousness was found to be low, with a rate of 57% within mothers. Awareness of antibiotic use was found to be low, at a rate of 53%. Mother's being a housewife, mother's low educational status, low SED score, her husband's occupation, and her husband's low educational status were determined as factors that negatively affected fever awareness and antibiotic use awareness.

Considering these findings, other inferences we made are as follows: 49% of the mothers who participated in the study did not have a temperature measurement device at home. The most commonly used temperature measurement device was a digital thermometer with a rate of 35%. 45% mothers decided the presence of fever manually. 58% of mothers could not define fever correctly. The most frequently used antipyretic method applied by the mothers participating in our study was the warm application with 40%. Only 20% of the mothers participating in our study used antipyretics. The most frequently used drug by mothers as an antipyretic was paracetamol with 58%. Aspirin use remained at 8%. Mothers reported that the most feared complication as a result of fever was convulsions, at a rate of 76%. As a result of the febrile seizure, 45% of the mothers think that mental retardation would occur, and 27% think that their children would die. While 28% of the mothers thought that seizures could be prevented with antibiotics, 62% of them said that it is necessary to immerse their child in water first in case of a seizure. 67% of them believed that the fever of their children should decrease in the next 24 hours after the treatment in febrile illnesses. 38% of the mothers thought that antibiotics should be used in diarrhea. On the other hand, 56% mothers emphasized that antibiotics should be used in the flu. If antibiotics were not prescribed, 29% mothers either went to another doctor or

bought their own antibiotics from the pharmacy. Only 52% of mothers whose children were prescribed antibiotics, used antibiotics until the day they were prescribed. Most of the mothers stated that they would apply to the same doctor again, if the fever did not decrease on the first or third day (48%-38%, respectively) following their first visit the doctor.

Discussion

According to the data of our study, 58% of the mothers could not measure the temperature correctly. 45% did not have a fever measuring instrument. Due to a febrile illness, 76% of mothers thought that their child would have a seizure, 27% thought that their child would die due to a seizure, and 13% of mothers saw meningitis as the cause of fever. 50% of mothers consulted a doctor before intervening in case of fever. 10% of mothers thought that antibiotics should be used in every fever. 24% of mothers stated that they would go to another doctor if the doctor did not prescribe antibiotics. However, it was determined that only half of the families who were prescribed antibiotics used the antibiotic treatment for the appropriate time. One of the most striking results of our study is the behavior of 62% of mothers to immerse their children in water and then take them to the doctor during febrile convulsions. However, this behavior is likely to increase the child's hypoxemia. While 2% of the mothers panicked and did nothing, 62% of them immersed them in water and then took them to the doctor, and 36% (n=108) immediately took them to the doctor without wasting any time.

Conclusion

In our study, we found mothers' awareness of fever, their knowledge of febrile illness, their attitudes and behaviors about febrile convulsions, and their awareness of antibiotic use insufficient. We determined that the most important factor affecting this was maternal education level and socioeconomic level. Laboratory for Mother and Child Health, Istituto di Ricerche Farmacologiche "Mario Negri" Via Eritrea 62, 20157, Milan, Italy, in their study conducted on 1237 mothers on April 9, 2002, determined that the most important factors affecting fever awareness were socioeconomic level and low educational status of mothers[10]. This is also consistent with our study. However, in the study of Vasiliki Matziou et al., Greece, in which 323 mothers participated in Copadistrian University on April 1, 2006, it was found that the young age of the mother and the low number of children, and being a new mother were associated with low fever awareness. In our study, however, maternal age and number of children did not affect fever awareness. Considering all these, we think that by explaining the definition of fever, temperature measurement, the benefits, causes and consequences of fever to mothers, mothers can take appropriate action by assessing the child's condition in a cold-blooded manner, without panicking, if their child had a fever. We anticipate that mothers' knowledge of fever will prevent unnecessary practices and delayed and inadequate intervention to the child.

We think that our study will be useful to see how the families' approaches to fever are influenced with the public service announcement as required by the state's health policy to inform families, by evaluating the level of knowledge of the families again with the same questions. To prevent unnecessary antibiotic use and hospital admissions, our study and other studies are needed to detect how the families can be informed in the most accurate way and to see how awareness and hospital admissions and antibiotic use data will change the situation.

In Figure 1, the Distribution of Families by Socioeconomic Level has been examined. When the graph is examined, 246 (82%) of the mothers have a low socioeconomic level and 54 (18%) have a medium socioeconomic level according to their SEL scores. There is no mother with a high score. According to the results of our research, the factors affecting the SEL score at a significant level ($p<0.05$) were determined as mother's occupation, education level, monthly income, living with family elders, spouse's occupation and spouse's educational status.

In Figure 2, the Distribution of the Families According to

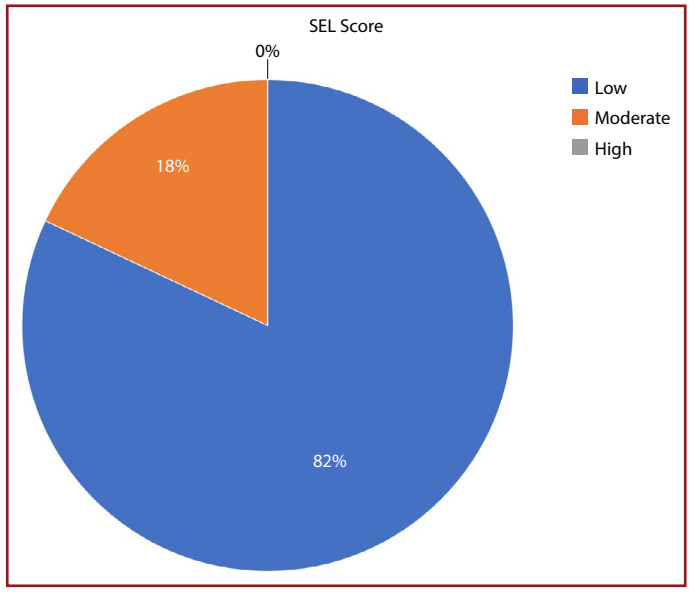

Figure 1. Distribution of Families by Socioeconomic Level.

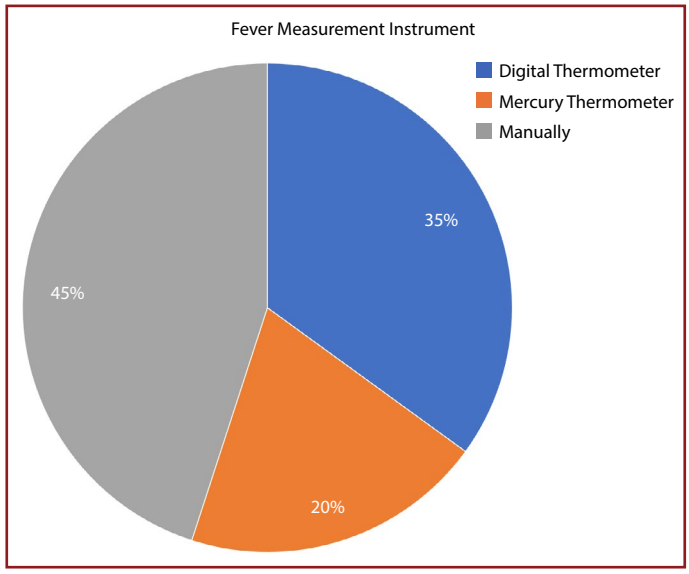

Figure 2. Distribution of Families According to the Status of Thermometers.

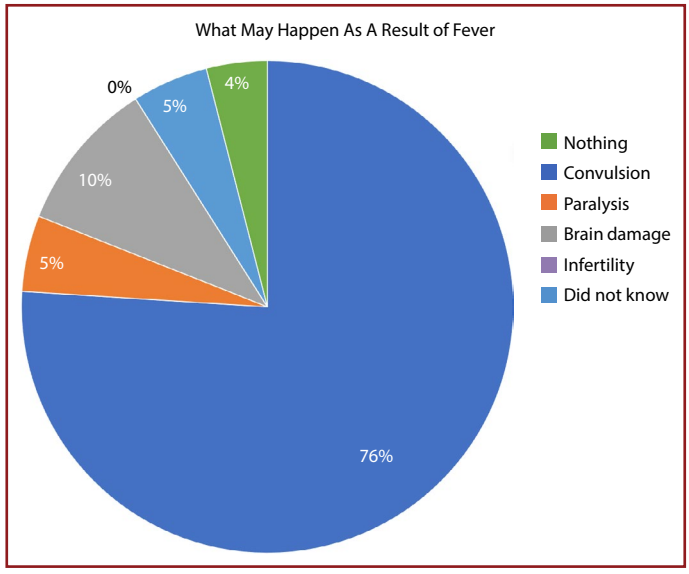

Figure 3. Distribution According to What May Happen As A Result of Fever.

the Status of the Thermometers They Owned was examined. According to the graph, 35% (n=106) of the families use a digital thermometer, 20% (n=59) use a mercury thermometer, and 45% measure manually.

In Figure 3, the distribution according to the conditions that may occur as a result of the fever is examined. According to the graph, 4% (n=11) nothing happened, 76% (n=228) had convulsions, 5% (n=16) had paralysis, 10% (n=31) had brain damage and 5% (n=14) did not know.

In Figure 4, the Distribution of Families by Awareness of Antibiotic Use is examined. According to the graph, 159

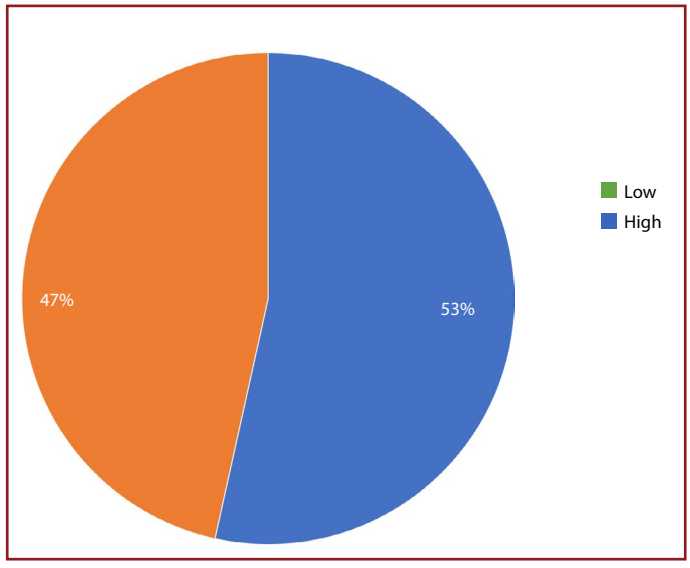

Figure 4. Distribution of Families by Awareness of Antibiotic Use.

(53%) mothers scored low and 141 (47%) high points in scoring according to the awareness of antibiotic use. According to the results of our study, the factors that significantly affect the Antibiotic Use (AU) score ($p<0.05$) were determined as mother's occupation, education level, monthly income, spouse's occupation, and spouse's education level.

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