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# FEVER IN UNDER-FIVES: EXAMINING PARENTAL KNOWLEDGE, PERCEPTIONS, AND THE IMPACT OF SOCIO-DEMOGRAPHIC DETERMINANTS

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**Abstract**
The research examines how parents understand and handle child fevers under five-year-olds while analyzing their behavior through social and demographic characteristics. The survey results showed that 60% of parents had inadequate fever management knowledge while parents aged 26-35 displayed superior comprehension of fever care. The research findings show major shortcomings in fever care practices because 78.75% of parents chose antipyretics (paracetamol) and 51% used sponging. The survey results showed that 30.75% of parents misused antibiotics to treat fever because they did not comprehend the nature of fevers. Parental age together with education level and socioeconomic status and geographical location play major roles in determining how parents manage fever symptoms. Parents with less formal education who lived in lower income areas and resided in rural locations demonstrated limited understanding of proper fever treatment. The most scared complication for parents was febrile seizures which caused mothers and other parents to develop fever phobia leading to unnecessary medical visits. The research establishes the necessity of specific educational programs that must focus on rural and underprivileged regions to teach parents about fever knowledge and management while minimizing incorrect fever treatment and anxiety. Educational interventions for these knowledge gaps will improve child fever management while decreasing healthcare expenses and resulting in improved health outcomes.

**Keywords:** Child health outcomes, Fever management, Fever phobia, Parental knowledge, Socio-demographic factors

## 1. Introduction

Fever is one of the most common clinical symptoms observed in children under five years of age and a leading cause of visits to paediatric care centres worldwide[1,2,3]. Though fever is a physiological response to infection and part of the body's natural defense mechanism, it is often

misinterpreted by parents as a sign of serious illness[4,5]. This misunderstanding leads to what is commonly termed "fever phobia," a condition characterized by unwarranted concern about the dangers of fever, often resulting in overuse of medications, frequent healthcare visits, and unnecessary diagnostic procedures[6,7,8]. Fever accounts for a significant proportion of consultations in both emergency and primary care settings[4,9]. For many caregivers, especially those with limited access to accurate medical information, fever is not seen as a symptom but rather as a disease in itself [10,11,12]. Religious traditions, folklore, and advice from elders often continue to influence modern health decisions, particularly in communities where access to formal education and modern healthcare is limited. Contemporary literature continues to document prevalent misconceptions about fever.[13,14,15]. Studies show that a majority of parents are unaware of the correct temperature that defines fever, the appropriate dosing and timing of antipyretics, and when medical consultation is necessary[4,5,16]. These beliefs not only contribute to irrational use of medications but also to increased hospital visits, which burden the healthcare system and escalate healthcare costs unnecessarily. [6,17,18].

The term "fever phobia" was first introduced by Schmitt in 1980, and even decades later, it remains relevant as parental concern over fever has shown little decline[19,20]. Parents often engage in practices such as cold-water sponging, unnecessary alternating of medications, and frequent checking of temperature out of fear, rather than based on medical advice. Inappropriate responses to fever can lead to delays in identifying underlying causes that may require medical intervention[21,22]. In addition to irrational practices, another pressing concern is the knowledge gap in differentiating between a mild fever and a potentially dangerous condition. This lack of knowledge is exacerbated by socio-demographic factors, including low educational attainment, low socioeconomic status, rural residence, and lack of access to health education resources[23,24,25]. While mothers are often primary caregivers, studies indicate that even among educated and working mothers, misconceptions about fever are widespread, suggesting that awareness campaigns need to be more specifically tailored and widespread[24].

The objective of this study is to assess the knowledge, attitudes and practices of parents of under five children regarding fever and to identify the socio demographic determinants of their behavior. This is essential for informing health professionals, educators and policymakers to work on developing community based educational strategies capable of closing the knowledge gaps. Strategies such as integrating fever education into maternal and child health programs, using mass media, empowering community health workers, and promoting evidence based guidelines at the community level can be such. Given that childhood fever continues to be a major cause of parental concern and healthcare use, it is important to provide parents with appropriate knowledge not only for individual families but also for optimizing the efficiency of the healthcare system as a whole.

## 2. Research Methodology

The research design follows a cross-sectional approach to evaluate parental understanding and behavior towards childhood fever in children under five years of age. The research examines which socio-demographic elements affect parent management of child fever by studying their beliefs and practices and perceptions. The subsequent sections detail all aspects of the research methodology starting from study design through study setting to participants and tools used and data collection methods and statistical analysis.

### 2.1 Study Design

The research is based on a cross-sectional study design, which enables the collection of data from the participants at a particular point in time. This approach is well suited to the exploration of the prevalence of knowledge, attitudes and practices of parents with regard to fever and its management. Particularly, cross-sectional studies can be used to identify patterns or correlations of socio-demographic factors with how fever is perceived and managed by parents.

### 2.2 Study Setting

The study was carried out in a hospital-based setting in the Pediatric Outpatient Department (OPD) and the pediatric ward of a tertiary care hospital (PESIMSR) in Kuppam, Andhra Pradesh. The study conducted from October 2022 to October 2023. The reason for choosing this setting is that it gives access to a large number of parents with children suffering from fever.

### 2.3 Study Population

- The study population includes parents (mothers and fathers) of children aged under five years who had fever either at the outpatient department (OPD) or were admitted in the paediatric ward during the study period.
- The study sample was carefully defined to include and exclude the criteria that accurately represent the target population.
- The standard formula for cross-sectional studies was used to calculate the sample size for this study. Taking a prevalence of parental knowledge of fever to be 50%, the sample size was estimated to be 384.
- In order to account for possible non-responses or incomplete data, a final sample size of 400 participants was chosen in order to provide statistical reliability and robustness to the findings.

**(i) Inclusion Criteria**

- Parents of children under the age of five years who came with fever to the paediatric OPD and those admitted in the paediatric ward.

**(ii) Exclusion Criteria**

- Parents of neonates (children under 1 month of age) were excluded from this study as their health and fever management could be very different from older children, which could introduce bias into the results.
- Parents of acutely ill children who needed ICU admission were also excluded, as their attention would probably be directed to more severe medical issues, not fever management.

### 2.4 Sampling Method

- The participants for the study were purposively sampled. In this method, individuals who are relevant to the research question are selected.
- Participants were identified as parents of under five years children with fever brought to the hospital. This guarantees that the sample is representative of the population of parents who are involved in managing childhood fever.
- Furthermore, informed consent was needed for participation, which meant that parents who agreed to participate in the study had to sign informed consent after they understood the purposes, procedures, and their rights as participants in the study
- All the participants were aware of the purposes of the study and their participation was voluntary, keeping it within the purview of ethical means in the data collection process.

### 2.5 Data Collection Tools

The data for the study were collected using a pre-designed, semi-structured questionnaire specifically designed to measure different aspects of parental knowledge, attitudes and practices regarding fever in children under the age of five. Existing tools used in previous studies on fever management were modified to design the questionnaire which was appropriate for the local context and objectives of the study. It was divided into several sections. The first section included socio-demographic information of the parents (age, gender, education, occupation), and of the child (age, gender). The second part was about the knowledge of fever, to find out what the parents know about its definition, causes, symptoms and the right temperature for medical intervention. The third section examined parental attitudes towards fever, including their concerns about fever, such as the dangers of fever including febrile seizures, brain damage and dehydration. Lastly, the questionnaire focused

on fever management practices, including the methods parents apply (e.g., administering antipyretics (e.g., paracetamol, ibuprofen), non-pharmacological methods (e.g., sponging), and healthcare seeking (e.g., doctor consultation, hospital visit). In the knowledge section, there are 9 questions and 1 mark will be given for correct response and 0 mark for incorrect response. The scoring ranges from 0 to 9. A score of > 4.5 will be considered as good knowledge and a score of < 4.5 will be considered as poor knowledge.

### 2.6 Procedure for Data Collection

The structuring and systematizing of the data collection process in order to make the data collection accurate and consistent. First, parents of feverish children at the hospital were identified and the objectives and procedures of the study were explained to them in simple and understandable language. Written informed consents were obtained from these willing participants for us to conduct one on one interviews and get the information needed. During the interviews, the predesigned semi-structured questionnaire was used to gather information on parents' knowledge, attitudes and practices on fever management. In private space, these interviews were held in order to obtain confidentiality and minimize distractions so that the participants felt comfortable responding. After the data were collected, they were entered into Microsoft Excel for preliminary analysis. Then, the data were transferred to SPSS version 21 for more detailed statistical analysis. The data were cleaned prior to analysis to remove any inconsistencies or incomplete responses to ensure that the final dataset was clean.

### 2.7 Statistical Analysis

In order to establish valuable conclusions, data were analyzed using descriptive and inferential statistical methods. Categorical variables (i.e. parental knowledge and fever management practice) were described using frequencies and percentages by using descriptive statistics. The ages of parents and children were summarized as continuous variables using means and standard deviations. Chi-square tests were used to assess the associations between socio-demographic factors (e.g., education, socioeconomic status, locality) and parental knowledge, attitudes and practices about fever for inferential analysis. Furthermore, t-tests were used to compare means between the different groups and a p-value of less than 0.05 was considered statistically significant.

### 2.8 Ethical Considerations

Institutional Human Ethics Committee of PESIMSR, Kuppam provided ethical approval to the study and all the research procedures were carried out according to the ethical guidelines. All participants gave informed consent, i.e. they understood the purpose of the study, their right to confidentiality and their right to withdraw at any time without consequence. Confidentiality was maintained throughout the study and all personal data were anonymized to protect the identities of the participants. Additionally, the study was conducted on the basis of non-harmful practices, as it did not involve any invasive procedures or treatments. The interviews were conducted in a non invasive way with a lot of respect and sensitivity to the needs and comfort of the participants. All together they made this study of ethical integrity and protection of safety and dignity of all participants.

## 3. Results

The present study was conducted to assess parental knowledge, attitudes and practices regarding fever in children under five years of age and to identify the socio demographic factors that influence this knowledge. Findings among the surveyed 400 parents revealed poor knowledge among majority of them – 60% against 40% on the side of good knowledge about fever management. Such an outcome denotes a need for public health efforts to increase awareness and education about palliative care among caregivers. Chi square tests were used to determine the significance of associations between parental knowledge and various demographic factors using SPSS for statistical analysis. Key variables such as child’s age, gender, locality, maternal education and occupation,

socioeconomic status, birth order and family structure were explored. This section details the outcomes of these analyses, highlighting both significant and non-significant associations that can inform targeted interventions and policy development for improved child health outcomes in similar socio-cultural settings.

Table1 outlines the educational qualifications of mothers in the study. The largest proportion had secondary education (25.5%), followed closely by illiterate mothers (24.5%). Notably, only 11% had completed a degree. This is significant when evaluating how maternal education might influence knowledge about childhood fever. However, as seen in the result section of the article, while some higher education levels correlated with slightly better knowledge scores, the association was not statistically significant. This suggests that formal education alone may not be enough to ensure accurate understanding and practices regarding fever management, indicating the need for targeted health literacy campaigns.

**Table 1: Distribution of Study Population Based on Mother's Education**

| Education Level | Frequency | Percentage |
|---|---|---|
| Illiterate | 98 | 24.5% |
| Primary | 91 | 22.8% |
| Secondary | 102 | 25.5% |
| Higher Secondary/PUC | 65 | 16.3% |
| Degree | 44 | 11.0% |
| Total | 400 | 100% |

Table 2 highlights family structure distribution. Most participants lived in nuclear families (48%), while joint families made up 44.3%. In your article's analysis, parents from nuclear families demonstrated higher levels of knowledge regarding fever management (47.4%), possibly due to less role diffusion and more direct engagement in child-rearing. On the other hand, joint and three-generation family settings might diffuse caregiving roles among elders, potentially affecting active information-seeking behavior. These insights strengthen the article’s conclusions on the relevance of family type in shaping health knowledge and underline the importance of including all family members in public health education strategies.

**Table 2: Distribution of Study Population Based on Type of Family**

| Type of Family | Frequency | Percentage |
|---|---|---|
| Joint Family | 177 | 44.3% |
| Nuclear Family | 192 | 48.0% |
| Three Generation | 31 | 7.8% |

As shown in Table 3, the age-wise distribution of children whose parents participated in the study is shown. It is crucial in a fever-related study because immune responses and fever management approaches often differ with age. The highest proportion of children (28%) were in the 3–5-year group, which provides insight into the age-specific focus areas for educational intervention.

**Table 3: Distribution of Study Population Based on the Child’s Age**

| Child’s Age | Number | Percentage |
|---|---|---|
| <1 Year | 78 | 20% |
| 1–2 Years | 108 | 27% |
| 2.1–3 Years | 102 | 26% |
| 3–5 Years | 112 | 28% |
| Total | 400 | 100% |

As displayed in Table 4, with 45% of the sample belonging to the upper middle class, this data provides a foundational understanding of economic disparities and can be correlated with knowledge levels. This directly supports your results section, where socioeconomic status showed a significant association with fever knowledge

**Table 4: Socioeconomic Status Distribution**

| Socioeconomic Status | Number | Percentage |
|---|---|---|
| Upper Class | 47 | 12% |
| Upper Middle Class | 179 | 45% |
| Middle Class | 88 | 22% |
| Lower Middle Class | 82 | 20% |
| Lower Class | 4 | 1% |

As shown in Table 5 67.5% of parents using syrups for fever management in theiar children. Only 6.5% were preferring suppository for fever management

**Table 5: Preferred Pharmaceutical Form for Managing Fever**

| Pharmaceutical Form | Mothers (n/%) | Fathers (n/%) | Total (%) |
|---|---|---|---|
| Syrup | 146 / 36.5% | 124 / 31.0% | 67.5% |
| Tablet | 47 / 11.75% | 57 / 14.25% | 26.0% |
| Suppository | 20 / 5.0% | 6 / 1.5% | 6.5% |

As shown in Table 6, the distribution of parental knowledge regarding fever in under-five children reveals a significant gap. Out of 400 parents surveyed, only 160 (40%) had good knowledge, while the majority—240 (60%)—demonstrated poor knowledge. This finding suggests that a large number of caregivers do not have sufficient knowledge of fever management, and this may result in inappropriate practices and delayed care.

**Table 6: Distribution of Parents' Knowledge Regarding Fever**

| Knowledge Level | Frequency | Percentage |
|---|---|---|
| Good Knowledge | 160 | 40% |
| Poor Knowledge | 240 | 60% |
| Total | 400 | 100% |

Table 7 shows the relationship between the age of the child and parental knowledge of fever. The highest proportion of good knowledge was shown by parents of children younger than one year (74.36%), and the lowest by parents of children aged 1–2 years (27.78%). The chi square test indicates a statistically significant association ($p < 0.00001$) indicating that the child's age is an important factor in determining how much parents know about managing fever. It could be due to increased concern and attention to infants, which may lead parents to seek more information.

**Table 7: Association Between Age of the Child and Knowledge Regarding Fever**

| Age of Child | Good Knowledge | Poor Knowledge | Total | % Good Knowledge |
|---|---|---|---|---|
| <1 year | 58 | 20 | 78 | 74.36% |
| 1–2 years | 30 | 78 | 108 | 27.78% |
| 2–3 years | 37 | 65 | 102 | 36.27% |
| 3–4 years | 35 | 77 | 112 | 31.25% |
| Total | 160 | 240 | 400 | |

**Chi-square = 49.2525, p < 0.00001 (significant)**

Table 8 demonstrates the relationship between the gender of the child and parental knowledge of fever. The results indicate that 48.22% of parents with male children had good knowledge, while only 29.78% of parents with female children had good knowledge. The chi square value of 13.9707 and p value of 0.000186 ($p < 0.05$) indicates that this difference is statistically significant. These findings indicate that parental awareness of fever is influenced by the gender of the child. As pointed out in the above quote, cultural or social factors may cause people to pay more attention to male children or increase health seeking behaviors of the society, underscoring the importance of gender-equitable health education intervention.

**Table 8: Association Between Gender of the Child and Knowledge Regarding Fever**

| Gender of Child | Good Knowledge | Poor Knowledge | Total | % Good Knowledge |
|---|---|---|---|---|
| Male | 107 | 115 | 222 | 48.22% |
| Female | 53 | 125 | 178 | 29.78% |
| Total | 160 | 240 | 400 | |

**Chi-square = 13.9707, p = 0.000186 (significant)**

Table 9 shows the association between the locality of the parents and their knowledge about childhood fever. The percentage of good knowledge among urban parents was higher (58.18%) than that of rural parents (37.1%). The statistically significant chi square value ($p = 0.00304$) indicates that locality has a significant impact on fever related knowledge. The cause may be because of circumstances where parents residing in urban cities have more access to health education and health resources available while rural parents may lack enough information on updated healthcare. These findings highlight the need for targeted educational efforts in the rural areas to fill the knowledge gap.

**Table 9: Association Between Locality and Knowledge Regarding Fever**

| Locality | Good Knowledge | Poor Knowledge | Total | % Good Knowledge |
|---|---|---|---|---|
| Rural | 128 | 217 | 345 | 37.10% |
| Urban | 32 | 23 | 55 | 58.18% |
| Total | 160 | 240 | 400 | |

**Chi-square = 8.7835, p = 0.00304 (significant)**

Table10analyses the relationship between the mother’s educational status and their knowledge regarding fever. The highest percentage of good knowledge was seen among mothers with Higher Secondary/PUC education (46.15%), followed by those with degrees (40.91%). However, the differences among educational groups were not statistically significant ($p = 0.730588$). This implies that educational level, in this study population, did not play a major role in determining fever-related knowledge. It suggests that other factors such as healthcare access, cultural beliefs, or prior experiences might have a greater influence, emphasizing the need for widespread awareness efforts regardless of education level.

**Table 10: Association Between Mother's Education and Knowledge Regarding Fever**

| Mother's Education | Good Knowledge | Poor Knowledge | Total | % Good Knowledge |
|---|---|---|---|---|
| Illiterate | 41 | 57 | 98 | 41.84% |
| Primary | 33 | 58 | 91 | 36.26% |
| Secondary | 38 | 64 | 102 | 37.25% |
| Higher Secondary/PUC | 30 | 35 | 65 | 46.15% |
| Degree | 18 | 26 | 44 | 40.91% |
| Total | 160 | 240 | 400 | |

**Chi-square = 2.0281, p = 0.730588 (not significant)**

Table11 explores the relationship between the mother's occupation and their knowledge of fever. Mothers who were unemployed exhibited the highest proportion of good knowledge (43.89%), while those in unskilled occupations showed the lowest (34.48%). However, the differences across occupational categories were not statistically significant (p = 0.617). This implies that employment status is not a major determinant of maternal knowledge about fever. In other words, other variables such as access to healthcare, family structure or individual motivation may have a stronger impact, thus requiring all occupational fields to be covered during the educational outreach.

**Table 11: Association Between Mother's Occupation and Knowledge Regarding Fever**

| Mother's Occupation | Good Knowledge | Poor Knowledge | Total | % Good Knowledge |
|---|---|---|---|---|
| Unemployed | 79 | 101 | 180 | 43.89% |
| Unskilled | 30 | 57 | 87 | 34.48% |
| Semi-skilled | 32 | 48 | 80 | 40.00% |
| Skilled | 17 | 31 | 48 | 35.42% |
| Semi-professional/Professional | 2 | 3 | 5 | 40.00% |
| **Total** | 160 | 240 | 400 | |

**Chi-square = 2.6578, p = 0.617 (not significant)**

Table 12 shows the association between socioeconomic status and parental knowledge of fever. The highest percentage of good knowledge was shown by parents from the lower class (75%) and the lowest by parents from the middle class (26.14%). The chi square value of 10.8876 and p = 0.027857 indicate a statistically significant association. This implies that socioeconomical factors may have impact in the health awareness, it may respond by the differences in the access to the sources of the resources, of the services of health and of the education in the health. These results support the idea that disparities are in fact better addressed via tailored health interventions and awareness campaigns tailored to different economic brackets.

**Table 12: Association Between Socioeconomic Status and Knowledge Regarding Fever**

| Socioeconomic Status | Good Knowledge | Poor Knowledge | Total | % Good Knowledge |
|---|---|---|---|---|
| Upper Class | 19 | 28 | 47 | 40.43% |
| Upper Middle | 79 | 100 | 179 | 44.13% |
| Middle | 23 | 65 | 88 | 26.14% |
| Lower Middle | 36 | 46 | 82 | 43.90% |
| Lower | 3 | 1 | 4 | 75.00% |
| **Total** | 160 | 240 | 400 | |

**Chi-square = 10.8876, p = 0.027857 (significant)**

Table 13 shows the relationship between the birth order of the child and parental knowledge of fever. The highest percentage of good knowledge was found in parents of first born children (55.56%) and the lowest in parents of fourth born children (8.33%). The chi square test value of 32.4934 with p < 0.00001 confirms that there is a statistically significant relationship.

These observations indicate that parents are more aware and cautious they are with first child as they may be more nervous or consult with the medical professionals more often. But the continued education of all birth orders means subsequent children may not be as favored as the first child.

**Table 13: Association Between Birth Order and Knowledge Regarding Fever**

| Birth Order | Good Knowledge | Poor Knowledge | Total | % Good Knowledge |
|---|---|---|---|---|
| First | 90 | 72 | 162 | 55.56% |
| Second | 37 | 83 | 120 | 30.83% |
| Third | 31 | 63 | 94 | 32.98% |
| Fourth | 2 | 22 | 24 | 8.33% |
| Total | 160 | 240 | 400 | |

**Chi-square = 32.4934, p < 0.00001 (significant)**

Table 14 displays the relationship between type of family and parental knowledge on fever of under five children. Parents from nuclear families had the highest proportion of good knowledge (47.4%) while parents from joint (33.33%) and three generation families (32.26%) had relatively lower awareness. The chi square value of 8.4278 and p = 0.014788 indicate a statistically significant relationship. It implies that parents may be more active in the child health component of development in the nuclear family setting because there are fewer distractions in the work of caring for children or this may just be clearer roles to request from parents in the nuclear family setting. The importance of education across different family structures to improve outcome lies on these findings.

**Table 14: Association Between Type of Family and Knowledge Regarding Fever**

| **Type of Family** | **Good Knowledge** | **Poor Knowledge** | **Total** | **% Good Knowledge** |
|---|---|---|---|---|
| Joint | 59 | 118 | 177 | 33.33% |
| Nuclear | 91 | 101 | 192 | 47.40% |
| Three Generation | 10 | 21 | 31 | 32.26% |
| Total | 160 | 240 | 400 | |

**Chi-square = 8.4278, p = 0.014788 (significant)**

Statistically significant associations between child's age, gender, locality, socioeconomic status, birth order and type of family and parental knowledge of fever are confirmed, while mother's education and occupation were not. The results show clearly that several socio demographic factors have a significant impact on parental knowledge about fever in under five children. Variables such as child's age, gender, locality, socioeconomic status, birth order, family type were statistically significant in level of awareness supplied by caregiver and had differing contribution. On the other hand maternal education and occupation were not significantly correlated factors, which means that schooling or employment by itself may not foster adequate health knowledge. This emphasizes the complex and multifactorial nature of parental understanding and behaviour in children's health. In addition, the results highlight the importance of personalized educational measures in the rural, low socioeconomic and families with several children. By articulating these insights, we provide a very robust basis for designing evidence based interventions and a basis for public health planning. In this following discussion section it will go into further more about these findings in the context of previous literature, making sense reasonable conclusions and practical implications for healthcare organisations.

## 4. Discussion

This study examined parental knowledge, attitudes and practices regarding fever in children under five years of age, and the socio demographic factors that influence awareness. The findings clearly show a huge knowledge gap, with only 40 percent of parents having good knowledge and 60 percent having poor knowledge of fever and its management. This demonstrates the need for targeted education interventions on health among populations of consistent knowledge deficits. Parental knowledge was found to be significantly associated with the child's age. Substantially better knowledge was found in parents of infants (<1 year) than in parents of older children. It may be due

to increased vigilance and care seeking behavior that is common in the first year of life when parents are more likely to seek healthcare provider or educational resources. Similar problem patterns were noted as caregivers of younger children felt more health aware and were more knowledgeable. Parental knowledge was also significantly influenced by gender of the child. Knowledge of parents of male children was better than parents of female children. There is a possibility that this gender disparity may have dead to socio-cultural biases that privilege the health and wellbeing of males more than that of females in particular communities. They are consistent with previous work in South Asia who previously documented that, parents visited the doctor more often more and earlier for their son in order to gain more knowledge overtime[26]. This finding highlights the importance of gender sensitive educational programs that promote equal caregiving behavior regardless of the child's gender.

The knowledge locality is another area where urban parents stand out, better informed than their counterparts in the rural area. Urban parents likely benefit from better access to healthcare services, media, and health awareness campaigns. On the other hand, rural parents may be less accessible to healthcare maintenance due to the distance from the healthcare facilities, low literacy and scarce health promotion activities. The results are on point with previous studies from Nigeria and India which showed differences in health knowledge between the urban population and the rural populations because of differences in their access to healthcare and educational opportunities. However, this study did not find a statistically significant association between mother's education and health related knowledge. Mothers with higher education had slightly better knowledge scores, but the differences were not large. It may be because of variations in quality of education, cultural beliefs overriding formal knowledge, or lack of targeted fever education in school curricula. Previous literature suggests an unclear association between maternal education and something as simple as child health awareness[27], though some research indicates that education on its own is not enough without extra healthcare visits. Similarly, mother's occupation was not associated with fever-related knowledge. This implies that whether a mother is employed or not, her occupational status may not influence her understanding of childhood fever unless combined with relevant healthcare experience or education. This finding calls for inclusive health education programs that reach all mothers, regardless of employment status, through community health workers, antenatal clinics, or digital platforms.A strong association was found between socioeconomic status and knowledge, with parents from higher economic classes demonstrating better awareness. Interestingly, the lower class showed relatively high knowledge, although the sample size was very small in this group, which may have skewed the results. Generally, financial stability enables families to access healthcare services, pay for consultations, and engage with health education materials. This aligns with global research indicating that socioeconomic stability often correlates with better health-seeking behavior and greater access to health information.

Birth order also made a huge difference in knowledge, as first time parents did much better than parents of second or subsequent children. This implies that the novelty of parenting is associated with increased learning, vigilance, and interaction with healthcare services. With experience, the parents may know how to handle certain health concerns but do not mention them because they believe it is part of the development process. Literature has also shown that parental attention and caution have declined with later children[28]. Therefore, interventions should focus on continuous health education during parenting, not just during the first child's early years. Finally, knowledge levels were also affected by the type of family. Knowledge was higher in parents from nuclear families than in parents from joint or three generation families. It may be because nuclear families are more autonomous in making decisions about child health and parents actively seek health information and make child health decisions independently. On the other hand, joint family system may involve tracking down the traditional elders' knowledge or dependence on shared responsibility which lessens individual learning. Taken together, these results suggest not only that such educational techniques should be culturally appropriate, but also that they must involve close family members as well. Finally, this study found several socio-demographic determinants that

significantly influence parental knowledge of fever in under five children. It was found that factors such as child's age, gender, locality, birth order, socioeconomic status and family type were influential, while maternal education and occupation were not. In the light of these results it becomes necessary to consider that any intervention must be individualized and not for all possible types of parents as well as they have to be multivariate and also inclusive in the most vulnerable group like rural, specific parents of female children, or multiparent households. Fever education integrated as part of routine pediatric care, community health visits and digital media campaigns into the current gap is an alternative to close the current knowledge gap. These findings added important knowledge to aid public health planners, pediatric care providers and policy makers in improving child health status through better parental education.

## 5. Conclusion

The findings of this study are useful in understanding parental knowledge about fever in children under five and the effect of different socio-demographic determinants. The findings show that 60 percent of parents have poor knowledge of fever management. Significantly associated with the level of parental knowledge were a number of factors such as a child's age and gender, locality, socioeconomic status, birth order, and family type, importantly. In contrast, maternal education and occupation did not show a meaningful correlation, suggesting that conventional indicators of literacy and employment may not fully translate into adequate health knowledge.The results underscore the multifaceted nature of health awareness among caregivers. Urban parents, those from nuclear families, and first-time parents demonstrated relatively higher knowledge, possibly due to better healthcare access, focused parenting, and autonomy in health decisions. These findings call for public health strategies that go beyond generalized education campaigns. Instead, interventions must be customized to address specific community needs—especially in rural areas, low-income households, and larger or traditional family structures.Equity in child healthcare begins with empowering caregivers through relevant, accessible, and culturally sensitive information. Community health workers, digital education platforms, and routine pediatric visits can serve as effective channels for delivering such education. Ultimately, enhancing parental knowledge will contribute not only to better management of fever but also to overall improvements in child health outcomes. This study serves as a foundation for further research and intervention planning to promote informed caregiving in diverse socio-demographic settings.

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