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Effectiveness of A Childhood Fever Awareness Program for Parents and its Impact on Health Literacy at AL-Naqrah PHC, in Ha'il, Saudi Arabia

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Abstract

Childhood fever is one of the most frequent reasons due to which parents seek emergency or primary healthcare services. Still, there are widespread misconceptions related to fever, warning signs, antipyretic use, and home management. Al-Naqrah Primary Healthcare Centre (PHC) in Ha'il emphasizes improving fever awareness in parents to reinforce family-centered care, promoting childhood illness management, and reducing unnecessary consultation. The aim of this scoping review is to explore existing literature on the effectiveness of childhood fever awareness programs and analyses their influence on parent knowledge, health literacy, fever management practices, and confidence. A scoping review methodology adopted in this study helps in identifying, sintering, and presenting relevant educational intervention reports, guidelines, and reviewed studies. The literature related to parent awareness, childhood fever education, health literacy, primary healthcare-based interventions, antipyretic decision-making, and fever phobia will be extracted from electronic databases. Included studies will consist of caregivers or children of parents, semi-structured interventions for fever awareness, and results focusing on knowledge, self-efficacy, attitudes, health literacy, and healthcare-seeking behaviour. Thematic summary of the evidence will help in determining components of intervention, measured outcomes, delivery methods, and gaps related to primary healthcare settings within Saudi Arabia. The expected findings will likely demonstrate improvement in understanding of the parents as a result of fever awareness of programs. This will also help in supporting the use of antipyretics, reducing anxiety, and enhancing identification of concerning signs. This review will offer a basis for adapting or developing a childhood fever awareness program according to the culture at Al-Naqrah PHC.

Keywords: Attitudes, Caregivers, Childhood Fever, Educational Interventions, Fever Management, Health Literacy, Knowledge, Parental Knowledge, Primary Healthcare, Practices, Primary Health Care, Scoping Review

Introduction

This Childhood fever is one of the most common causes of parental worry, emergency consultation, primary healthcare attendance, and telephone advice seeking. Although fever is not a disease and is a regulated physiological response to infection, most parents consider this increase in temperature as inherently dangerous. Modern research evidence consistently highlights inaccurate beliefs regarding fever thresholds, normal temperature, brain damage, antibiotics, seizures, and requirement of urgent medical examination among Saudi parents (Hussain et al., 2020). Clinical significance of these beliefs is high

because they influence antipyretic dosing, home monitoring, fluid encouragement, decisions related to seeking professional care, and cooling practices (Alomari & Alyahya, 2024).

Parental Health Literacy and Fever Awareness

Childhood Fever phobia is a very important concept in childhood fever research. It describes the fear of the parents that serious harm may result from fever if not reduced rapidly. Recent scholarly research shows a close connection of parental anxiety with weak self-efficacy, limited health literacy, and dependence on digital or informal information sources that are usually not accurate (Menekşe et al., 2024). It means that health literacy is not just about reading ability. It also involves the capacity of the parents to access, appraise, understand and implement information related to management of fever in real family situations. Parents with low health literacy may alternate between overtreatment, undertreatment, unnecessary antibiotics, avoidable healthcare visits, unsafe drug combinations and repeated temperature checking. On the other hand, parents with better health literacy can ensure correct antipyretic, calmer decision-making, suitable use of primary healthcare, and recognition of danger signs (Küçük, 2025).

Saudi Primary Healthcare Relevance

The relevance of this topic is particularly high for Al-Naqrah Primary Health Care (PHC) Centre in Ha'il, Saudi Arabia, because families managing childhood illness usually contact the PHC services first. Findings from studies conducted in Saudi settings suggest persistent gaps in knowledge and practice of parents despite their strong access to healthcare services. It suggests that effective home-based fever management is not guaranteed by service availability alone (Al Arifi & Alwhaibi, 2021). Healthcare educators, physicians, and nurses are usually well-positioned in community-based PHC settings to provide structured awareness programs on childhood fever. These programs are designed to address misconceptions that result in access to emergency departments by the families. Such programs may consist of illustrated leaflets, brief counselling, waiting-area education, parent-focused decision aids, and mobile messages. However, evidence related to the most effective components, feasible for Saudi PHC contexts, and culturally acceptable components remains fragmented across cross-sectional surveys, intervention studies, clinical education literature, and reviews (Assi, 2024)

Problem Statement and Need for Evidence Mapping

The central problem focused on this study is that the advice received by the parents from previous clinical encounters, pharmacies, social media, and relatives might be fragmented. Similarly, PHC teams might not have access to consolidated evidence for developing fever education. This results in a practical gap between routine fever decisions by parents and available scientific guidance.

Rationale for the Scoping Review

A scoping review is justified because the field involves a broad range of research designs, educational formats, outcomes, and definitions of health literacy. This paper does not test one specific intervention effect. It rather maps the current knowledge related to childhood fever awareness programs for parents and the influence of these programs on knowledge, confidence, attitudes, health literacy, and practices. The review recognises evidence gaps related to developing a tailored program for Al-Naqrah PHC. The paper synthesises available literature to support a culturally responsive and more systematic approach to

parent fever education. The findings of this research will contribute to a more informed and safer family-oriented primary healthcare for parents, children, health systems, and clinicians.

Review of Related Literature

Childhood Fever as a Primary Healthcare and Parental Concern

Childhood fever is a usual symptom that results in parental concern, use of healthcare service, and home treatment. In clinical terms, fever is an adaptive response to infection, and it does not suggest any severe disease. However, the parents usually consider this elevation in temperature as an immediate threat requiring urgent medical attention. It is necessary to understand this difference because awareness programmes must address emotional responses, knowledge, decision-making, and risk perception. Recent scholarly evidence has highlighted that misconceptions related to thresholds of fever, complications, and necessity of antipyretics is common among populations belonging to various cultures (Sakr et al., 2022). According to Ng et al. (2023), fever education is a matter of global health literacy instead of a problem that is limited to one service delivery setting or a country.

Parental Knowledge and Misconceptions about Fever

Knowledge possessed by the patients about the concept, reasons, and outcomes of fever is usually incomplete. They are usually uncertain regarding the temperature that results in fever, limited association between high fever and severity of illness, and distinction between hypothermia and fever. Hussain et al. (2020) conducted study in the Saudi context and reported gaps in attitudes, knowledge, and practices among parents, including uncertainty related to the methods of measurement and decisions for treating childhood fever. Studies conducted in other countries have also highlighted similar patterns. According to Sakr et al. (2022), the parents believe that the fever causes coma, brain damage, or death if not immediately treated. The parents may perceive the manageable symptoms as an emergency due to these beliefs, increasing pressure on healthcare services.

Fever Phobia, Anxiety, and Health-Seeking Behaviour

Fever phobia is an important factor that describes strong reactions from parents despite clinical reassurance. This phobia is not an outcome of lack of information. It represents a mix of previous illness experiences, fear, cultural beliefs, uncertainty regarding danger signs, and social advice. According to Ng et al. (2023), parental anxiety usually results in checking temperature repeatedly, alternating antipyretics, waking sleeping children for medication, seeking antibiotics, taking children to healthcare facilities sooner than clinically needed, and unnecessarily using tepid sponging. Research conducted in community and emergency settings highlighted moderate educational attainment as a key cause of persistent parental concern. It means that they cannot achieve fever-specific health literacy from general education (Toksoz & Acikgoz, 2024). Therefore, knowledge correction with practical guidance and confidence-building must be combined with effective awareness programmes.

Health Literacy and Fever Management Capacity

Health literacy equips an individual with a theoretical lens to understand fever management by parents. It consists of the ability to understand, obtain, use, and evaluate health information to make informed decisions. According to Menekşe et al. (2024), parental health literacy has a relationship with fever management practices. Findings of

this research suggest the impact of literacy level on interpretation of symptoms and implementing care instructions by parents. E-health literacy has been introduced by digital sources. E-health literacy of the parents has a relationship with fever and anxiety management skill, demonstrating the requirement to enable parents to understand the quality of online information (Küçük, 2025). This evidence is relevant for Al-Naqrah PHC because parents receive information from social media, relations, websites, and pharmacies before consulting clinicians. Therefore, a structured programme might be considered an accessible source, locally credible, and trusted.

Antipyretic Use and Home Management Practices

Parental fever practices tend to focus on medication, particularly on taking the child's temperature and administering antipyretics such as Paracetamol and Ibuprofen. Use of antipyretics can enhance comfort, but inadequate dosage, unnecessary use and unsafe alternating antipyretics use are concerns. Saudi evidence regarding OTC antipyretic use in the last few years revealed some parents self-medicating their children; and that some parents were not knowledgeable of indications, dosage and risks (Sakr et al., 2022). International literature also suggests that parents may give antipyretics when the child's temperature is just below the threshold, even if the child feels no discomfort, is quite hydrated, acting normally and has no other warning signs. Thus, the goal of fever awareness programmes should be to get parents to focus not on “normalising temperature” but on the child, with a safe use of medication and an understanding of the need for professional assessment (Ng et al., 2023).

Educational Interventions and Awareness Programmes

Most research assessing the effects of fever education reports that a structured approach with parents is effective, but the format differs. A basic educational intervention was effective in increasing parents' knowledge and appropriate management of fevers, as demonstrated by Kelly et al. (2019). In more recent studies, Toksoz and Acikgoz (2024) reported positive effects of video-based distance education on both parents' knowledge and on how they manage fevers, while Nam and Kang (2025) created a case-based simulation programme that enhanced knowledge, lowered parents' anxiety, and increased self-efficacy. The results indicate that the education of fever can be conducted through various approaches such as face-to-face counselling, written material, video, mobile app, and scenario-based learning. Brief, repeated interventions may be particularly accessible in primary care contexts as they can be delivered during vaccination appointments, paediatric appointments, during waiting room education, and by nurses who provide health promotion (Kelly et al., 2019).

Gap in Saudi and Regional Evidence

Saudi studies show that parental fever misconceptions persist, even with good access to healthcare and development of public health. Hussain et al. (2020) suggests that parents in Saudi Arabia still have fever phobia and inconsistent management strategies. The regional evidence, however, is largely cross-sectional and geared towards assessing knowledge, attitudes and practices, not testing and mapping solutions to education. Furthermore, few studies have specifically focused on primary healthcare centres in Ha'il or equivalent communities in the north of Saudi Arabia. This gap is important because local language, culture, roles within the family, decision making of the mother and father, access to digital devices and trust in PHC professionals should be taken into account when designing intervention.

Implications for the Current Scoping Review

The literature overall demonstrates that knowledge, anxiety, health literacy and medication practices and accessibility to reliable advice all influence childhood fever management. There is already some research to support educational interventions although the evidence was varied in design and setting, content and outcomes. A scoping review is thus suitable to establish a picture of the existing knowledge and to identify the components of interventions and gaps relevant to Al-Naqrah PHC. This review can help inform the development of a culturally appropriate awareness program to enhance parental health literacy, mitigate unneeded fear and to increase safe management of fevers at home.

Research Questions

General Aim

The aim of this scoping review is to map and synthesise evidence related to effectiveness of childhood fever awareness programmes for parents and their impact on fever-related knowledge, health literacy, home management practices and confidence. The research is related to practices at Al-Naqrah Primary Health Care Centre in Ha'il, Saudi Arabia. A scoping review guidance suggested by this aim recommends broad mapping questions when the evidence is fragmented across concept, population, context, outcome measurement, and intervention format (JBI, 2025).

3.2 Specific Objectives

1. To identify components of education used in childhood fever awareness programmes for parents, like printed materials, counselling, digital tools, videos, nurse-led instructions, and simulations.
2. To analyse the influence of these programmes on parental health literacy, recognition of danger signs, knowledge of fever thresholds, antipyretic use, and behaviour of healthcare-seeking.
3. To compare delivery modes and settings, interventions implemented by hospitals, primary healthcare, online platforms, or community settings.
4. To determine gaps in evidence that may help in developing culturally-informed awareness programs for parents attending Al-Naqrah PHC.

3.3 Research Questions

Main Question

What evidence exists for parents related to childhood fever awareness programmes, and what is the influence of these programmes on parental fever management?

Sub-Questions

1. What are usually targeted literacy barriers and misconceptions?
2. Which are apparently mostly useful intervention components?
3. What results are measured?
4. In Saudi healthcare, what is the applicable evidence?

The recent studies according to which parental health literacy has a relationship with fever management, justify this question. These studies have highlighted persistent gaps in parental knowledge (Menekşe et al., 2024).

Methodology

Study Design

A scoping review methodology has been adopted in this paper to map evidence related to parental childhood fever awareness programmes and their relationship with knowledge, health literacy, fever management behaviour, and confidence. This design is suitable

because of the heterogeneous evidence base, including educational interventions, cross-sectional surveys, qualitative work, digital health studies, reviews, and clinical educational reports. Joanna Briggs Institution (JBI) methodology has been used to guide this review (JBI, 2025). It recommends scoping review when the purpose of research is to identify types of evidence, clarify concepts, inform programme development, or examine gaps in knowledge. The PRISMA extension has been used for Scoping Reviews to strengthen transparency in information sources, eligibility criteria, synthesis, and charting methods (Tricco et al., 2018).

Review Questions and PCC Framework

Following is the review question:

What evidence exists for parents related to childhood fever awareness programmes, and what is the influence of these programmes on parental fever management?

Caregivers and parents of the children constitute the population of this study. The study will particularly focus those who are responsible for making fever-related decisions at home. Childhood fever awareness is the main Concept, which includes counselling, education, printed materials, e-health or mobile tools, videos, nurse-led instructions, and simulation. Primary health or community settings is the Context, which particularly focuses on evidence transferable to Al-Naqrah PHC. This PCC structure is suitable according to JBI guidance for broad evidence mapping instead of defect simulation (JBI, 2025).

Search Strategy and Sources

Systematic search will be done using PubMed/MEDLINE, CINAHL, Scopus, Web of Science, ScienceDirect and Google Scholar. The search terms will include keywords or subject headings related to: ‘childhood fever’, ‘parents’/ ‘caregivers’, ‘fever phobia’, ‘health literacy’, ‘e-health literacy’, ‘awareness programme’, ‘educational intervention’, ‘antipyretic use’, ‘primary healthcare’, ‘Saudi Arabia’. Boolean operators and truncation will be tailored to the individual databases. Reference lists of relevant reviews and included studies will be screened to locate additional sources. The search will focus on literature published between 2019 and 2026 to reflect current practices in information seeking by parents, digital literacy, and post-pandemic healthcare seeking, as well as seminal older literature about fever in children.

Eligibility Criteria

Studies will be included which focus on parents/caregivers of children, childhood fever knowledge or management, description or evaluation of an awareness or educational component, measurement of outcome(s) related to health literacy, anxiety, self-efficacy, antipyretic use, danger-sign recognition or healthcare-seeking behaviour. The following types of evidence will be considered: quantitative, qualitative, mixed methods, quasi-experimental, randomized, cross-sectional, review, and guideline-based. Studies that are limited to adult fever and/or only hospital treatment of a specific febrile disease without parental education, opinion pieces without methodological description, or non-retrievable full texts will not be included.

Screening, Data Charting, and Synthesis

All the results of the search will be exported to reference-management software, and the duplications will be deleted. Titles and abstracts will be evaluated for eligibility and subsequently full-text articles will be reviewed. A data-charting form will be used to pull the following information: author, year, country, design, population, setting, intervention

type, delivery mode, outcome measures, key findings, relevance to Saudi PHC. Normally scoping reviews map breadth does not pool effects, so results will be synthesized narratively and thematically. Themes should involve misconceptions about fever, fear of fever, decision making around antipyretics, e-health literacy, modes of delivery for education and PHC considerations.

Conceptual Framework

The conceptual framework suggests that the childhood fever awareness programme impacts the outcomes for parents in three linked ways. First, exposure to information enhances knowledge of the following: factors involved in the development of a fever; normal physiology; safe use of antipyretic medications; hydration; comfort measures; and danger signs. Second, better understanding lessens anxiety and fear of the fever as evidence-based decision cues supplant threat-based interpretations. Third, better health literacy improves the capacity of parents to access, evaluate, and implement fever implementation in real-life situations. Recent studies have confirmed these relationships, finding that parental health literacy and e-health literacy are associated with managing a fever and with anxiety and with making health-care decisions (Menekşe et al., 2024; Küçük, 2025). The expected practice outcomes are: safer home care, less unnecessary emergency visits, better communication between clinicians and PHC and more appropriate PHC use (Menekşe et al., 2024).

Table 1: PCC Framework for Scoping Review

PCC Element	Application in this Study
Population	Caregivers or parents of children experiencing fever
Concept	Childhood fever awareness programmes, fever knowledge, health literacy, danger-sign recognition, antipyretic use
Context	Primary healthcare, Saudi-relevant settings, family, community, with emphasis on Al-Naqrah PHC in Ha'il

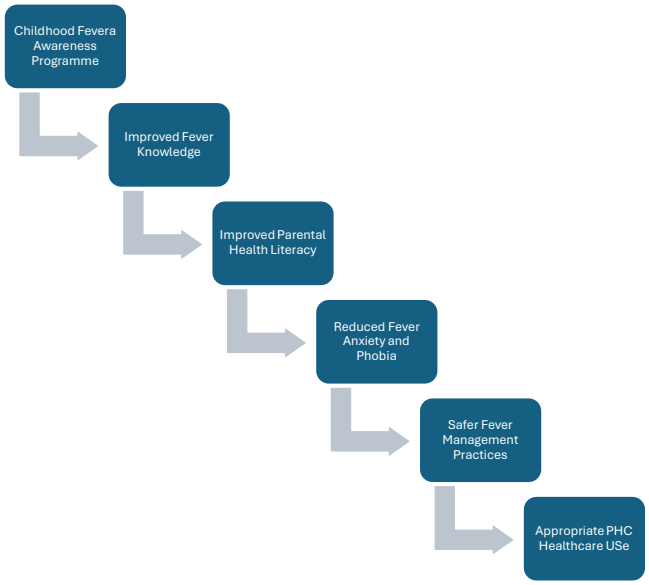

Figure 1: Suggested Framework

Ethical and Quality Considerations

This is a literature-based study, so this does not require participants' consent. Yet, in an ethical way of writing scholarly work, findings should be presented accurately, reporting is transparent, there should be no selective citation, and culture should be taken into account. Studies that were included will have methodological limitations explained to avoid overclaiming effectiveness when there is preliminary evidence. The essentiality of these safeguards is due to the fact that a locally adapted programme should be grounded on positive findings as well as barriers, weak programme designs, inconsistent measures, and contextual factors which will influence the learning of parents in Saudi primary healthcare practice and subsequent local programme evaluation studies.

Analysis

Interpreting Childhood Fever as a Health Literacy Problem

There are indications that childhood fever is not a biomedical sign but a literacy challenge for parents. Parents typically control the fever before seeking a clinic's opinion and the degree of temperature, child appearance, requirement for medication, and danger signs will influence quality of care in the early phase. There is evidence that many parents have knowledge and practices, even with frequent contact with healthcare services, in Saudi Arabia (Hussain et al., 2020). It means clinical access does not guarantee competent management at home. An awareness programme, therefore, needs to be more than just about transferring information at Al-Naqrah PHC and build the capacity of parents to be able to make a judgement about which fever is benign, which fever can be managed with comfort care and which fever requires assessment (Hussain et al., 2020).

Fever Phobia and Risk Perception

One consistent theme in the studies is that fever phobia persists to affect parental decisions. Fever can be a source of worry for parents even if the child is clinically stable, because they might think that it indicates brain damage, convulsions, dehydration, coma or death. This exaggerated risk perception is what gives rise to such repetitive temperature testing, the need to wake children to give their medicine, the mixing of medicines, the demand for antibiotics and the use of urgent care predominantly to alleviate anxiety. There is a persistent concern about fever among parents, as evidenced by recent studies of parents' knowledge about fever, which indicate that a fever phobia does not just go away with general schooling (Çelik & Güzel, 2024; Cengiz & Gündüz, 2025). The design of the programme should, therefore, focus on emotions directly through reassurance, scenarios, danger-sign algorithms and not just on facts (Çelik & Güzel, 2024; Cengiz & Gündüz, 2025).

Knowledge, Medication Practice, and Safety

There is also literature indicating a tendency for parental fever management to be medication-based. When providing comfort for children, paracetamol and ibuprofen are helpful but incorrect dose calculation, dosing too frequently, alternating protocols and unnecessary medication contribute to unwarranted risks. Saudi research exploring OTC use of antipyretics reveals an ongoing lack of knowledge, attitudes and practices regarding the administration of Paracetamol and Ibuprofen among parents (Alwashali et al., 2024). Parenting practices are also shown to be influenced by the number on the thermometer, not by the behaviour, hydration, sleep, breathing, or responsibility of the child, in international evidence. An effective awareness programme, therefore, needs to change the attitude from the use of antipyretics as compulsory fever eliminators to using them as measures to relieve pain and needs to incorporate the following: weight-based

dosage, spacing, contraindications, record keeping, and advice for consultation with the pharmacy (Alwashali et al., 2024).

Health Literacy, E-Health Literacy, and Information Appraisal

Health literacy seems to play a crucial role in the interplay between education and better management of fever disease. Menekşe et al. (2024) identified that parents' health literacy is related to their level of acceptance of advice on fever management, suggesting that more than providing the advice is needed, interpretive skills are required. Part of this is due to digital information, as parents are increasingly using websites, social media, search engines and messaging groups before reaching out to clinicians. Similarly, Küçük (2025) and colleagues found a correlation between the use of e-health literacy and the way parents manage their fever and anxiety, suggesting that parents' capacity to assess online information influences parental care decisions. Al-Naqrah PHC should provide parents with an awareness programme that educates them about the sources that are safe to use online, how to identify misinformation and when online advice should be replaced by clinical advice (Menekşe et al., 2024).

Effectiveness of Educational Interventions

Educational interventions suggest that structured parental education can be useful to enhance knowledge and confidence and safe practices. Short, repeated digital education has potential to be feasible for today's busy families, as it has been demonstrated to enhance parents' knowledge about how to manage a fever and decrease the burden of caregiving (Toksoz & Acikgoz, 2024). Because case-based simulation places parents in decisional situations that resemble reality, other skills, such as fever knowledge and anxiety and self-efficacy have also been improved (Nam & Kang, 2025). The results lend weight to the blended PHC model of brief nurse-led counselling, simple decision tools, illustrated leaflets, and short Arabic videos that are provided during PHC visits, such as vaccination appointments, child health checks or paediatric consultations (Nam & Kang, 2025; Toksoz & Acikgoz, 2024).

Relevance to Al-Naqrah PHC

Global evidence can be applied to Al-Naqrah PHC if the evidence is culturally and organisationally appropriate. Fever management may be dependent on extended family advice, community norms, pharmacists and social media for advice and guidance, and mothers may have day-to-day responsibility for fever management. As such, language of intervention, examples and visuals should be culturally familiar and simplified in Arabic. Repeated interactions can help PHC staff repeat messages, correct unsafe behaviors and encourage the appropriate use of consultation. Care-seeking should not be discouraged by the programme; rather, the parents should be able to differentiate between manageable fever episodes and urgent danger signs. This could decrease the number of unnecessary visits and ensure children receive the necessary evaluation in a timely manner.

Critical Interpretation and Synthesis

The evidence overall is supportive of the implementation of childhood fever awareness programmes, but at the same time shows limitations. They are often cross sectional based, are self-reported, have different outcome measures, and less frequently, evaluate long-term behavioral change. Intervention studies typically show knowledge improvement in the short term and less evidence of long-term health literacy, reduced attendance in the emergency department and reduced medication risk. Thus, the scoping review does not warrant a blanket conclusion of the effectiveness of all awareness programmes. The study

suggests an informed conclusion: A combination of knowledge, emotional reassurance, practical decision tools, and safe medication guidance is likely to enhance parental health literacy with structured, theory-informed and culturally adapted programmes. The most powerful implication is the development of a locally appropriate programme and its testing with pre and post health literacy, fever knowledge and self-efficacy and practice indicators for Al-Naqrah PHC.

Table 2: Summary of Key Literature Themes

Theme	Main Evidence Pattern	Relevance to Al-Naqrah PHC
Fever Misconceptions	Misunderstanding fever thresholds and complications by parents	Basic fever beliefs must be corrected by the programme
Antipyretic Safety	Alternating medicines and incorrect dosing are common.	Weight-based dosing must be taught at PHC
Fever Phobia	Anxiety results in overtreatment and urgent care-seeking	Education should consist of red flags and reassurances
Digital Information Use	Parents depend on social media and websites	Parents should achieve guidance from PHC towards reliable sources
Health Literacy	Interpretation and decision-making affected by literacy	Simple Arabic tools to be used in programme
Educational Interventions	Scenarios, counselling, and videos improve knowledge	Blended PHC programme might be most appropriate

Findings and Results

6.1 Overview of Mapped Evidence

The mapped literature highlights the influence of three recurring result clusters on parental childhood fever management, including variable health literacy, anxiety-driven practices, and knowledge deficits. The findings from previous studies suggest that fever is mostly misinterpreted by the parents as an independent danger. They do not consider it as a symptom needing contextual evaluation. Usual gaps include fear of neurological harm, fever thresholds, overdependence on antipyretics, and uncertainty about danger signs. Alwashali et al. (2024) highlighted that parents have inadequate knowledge regarding the use of ibuprofen and paracetamol, which confirms the significance of medication-safety education.

Findings on Awareness Programmes

Favourable short-term outcomes can be achieved from educational interventions. Distance education through video improved fever-management knowledge in parents and reduced burden on caregivers. It means that the busy families can opt for digital education. Case-based simulation programmes can also be useful because they can enable the parents to use their fever-related knowledge in actual situations. This will improve their self-efficacy and confidence. These results show that Al-Naqrah's awareness programme should not depend on lectures alone. The programme should also include visual dosing guidance, Arabic explanations, clear instructions on seeking medical care, and symptom scenarios (Toksoz & Acikgoz, 2024).

Findings on Health Literacy Outcomes

The overarching discovery is that health literacy can be a means of change and a consequence. The higher the level of health literacy among parents, the more likely they are to be able to understand the information on fever; use medicines safely; and determine whether home care or clinical consultation is needed. The importance of e-health literacy is growing due to the high frequency parents use the internet, search engines and social media before going to the clinic. The findings indicated that there is a relationship between e-health literacy and anxiety, and the ability to manage fever, so it is recommended that, when creating an awareness project about fever, an evaluation of digital information should be included (Küçük, 2025).

Evidence Gaps and Local Relevance

The evidence that is reviewed indicates that structured parental fever education is supported, with some gaps in evidence. Studies which are conducted in primary healthcare settings in Saudi Arabia are limited in number, and a limited number of studies measures sustained behavioural change, as well as different outcomes measures across studies. Hence the findings should be seen as indicative of successful elements of the programme, and not as a guarantee of lasting effectiveness. Based on the results of this study, Al-Naqrah PHC should consider developing a culturally adapted programme along with assessing parental knowledge, health literacy, confidence, medication safety and healthcare-seeking behaviour before and after programme implementation.

Conclusion

Findings from this scoping review confirm a clinically common but socially complex nature of childhood fever. The findings suggest that fever is still interpreted by many parents as a direct threat instead of a regulated physiological response. It is necessary to judge this response along with hydration, behaviour, responsiveness, and breathing of the child. Fear of fever, lack of health literacy, unsafe ways to treat fever or reliance on information from informal or digital sources may contribute to fears, unnecessary health care visits or how to manage fever at home. The review further reveals that structured awareness programmes have the potential to enhance parents' knowledge, confidence, medication safety, and decision-making, especially when they involve hands-on learning, are culturally relatable, are repeated, and are provided by trusted healthcare providers. The results have implications for the implementation of a childhood fever awareness programme for safe home care and informed use of services (IHU) developed and adapted locally in Al-Naqrah PHC, Ha'il.

Fever education should not be an isolated component of child health services provided by primary healthcare staff but should be delivered as an integral part. Vaccination visits, paediatric consultations, waiting rooms and digital communication tools are good opportunities for nurses, physicians and health educators to communicate the same messages consistently. Fever definition, use of thermometers, comfort-based care, weight-based antipyretic dosing, hydration, red flags and PHC/emergency attendance at the right time should feature in the programme content.

The findings recommend implementing parental fever literacy at policy level as part of the health-promoting activities in primary healthcare in Saudi Arabia. Consistent advice across families and providers might be reduced with the use of standardised Arabic resources, simple algorithms and digital resources. Future studies should assess the proposed Al-Naqrah PHC programme for changes in health literacy, knowledge of fever,

self-efficacy, medicine use, anxiety and health-seeking behaviour pre and post implementation. Long-term follow-up is required to assess whether educational outcomes are associated with long-term safer home management and using the healthcare more appropriately within Saudi family-centred child healthcare services.

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