

ORIGINAL RESEARCH

Parental knowledge, attitudes, and care-seeking practices towards otitis media in a rural town of Central Gujarat, India

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ABSTRACT

Objective: This cross-sectional study investigated parents' knowledge, perceptions, and practices regarding otitis media and middle ear infections in children under 5. The study assessed parental understanding of otitis media, its symptoms, prevention strategies, causes, and consequences. It also examined parental knowledge of middle ear infection symptoms and perceptions of breastfeeding position's importance. Attitudes, care-seeking practices, and experiences with health facility services were explored.

Results: The study found a concerning lack of parental knowledge about otitis media, including symptoms, prevention, causes, and consequences. Participants demonstrated poor knowledge, indicating the need for targeted education and awareness campaigns. Limited awareness of specific symptoms like hearing loss and ear discharge associated with middle ear infections was observed. Improving parental understanding of these symptoms is crucial for early detection and intervention. The study emphasized the importance of accurate information and education about otitis media causes, dispelling misconceptions, promoting preventive measures, and providing appropriate management strategies. Public health initiatives should raise awareness, deliver accurate information, and address misconceptions.

Regarding breastfeeding position, the study revealed varied parental perceptions, requiring further education and clarification. While many participants displayed positive attitudes towards seeking treatment, negative practices like self-medication or reliance on traditional healers were observed. Promoting positive attitudes and discouraging hindrances to proper treatment are essential.

Most participants reported thorough examinations using specialized ENT equipment at health facilities. However, a small percentage reported inadequate referrals or ineffective treatment, emphasizing the need for comprehensive care for children with ear infections.

Conclusion: This study emphasizes the need for increased education, awareness campaigns, and accurate information for parents regarding otitis media, symptoms, prevention, causes, consequences, and breastfeeding position. Enhancing parental knowledge and care-seeking practices can reduce the burden of ear infections, improve health outcomes, and provide effective management. Improving the quality of health facility services is crucial for comprehensive ear infection care.

Key Words: Acute otitis media, attitude, knowledge, pediatric

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Introduction

Otitis media is a common condition in children under five years of age and a major reason for antibiotic prescriptions in young children. It poses a serious health concern, contributing to preventable hearing loss and potential complications such as tympanic membrane perforation, hearing loss, neck abscesses, mastoiditis, meningitis, and labyrinthitis. The consequences of otitis media can delay speech and language development, impair scholastic performance, and impact employment opportunities

later in life. Moreover, otitis media complications, including meningitis and brain abscesses, result in significant mortality globally¹⁻⁷.

While various risk factors for otitis media have been identified, such as passive smoking, bottle feeding, inadequate breastfeeding, and low socioeconomic status, it is crucial to assess parental knowledge and practices to develop effective interventions. However, few studies have examined parental awareness and management of acute otitis media in developing countries. Previous research has indicated that

parental knowledge and care-seeking practices are influenced by education, socioeconomic status, and hesitancy to seek treatment due to poverty, ignorance, and lack of insurance⁸⁻¹³.

This study aims to fill the research gap by assessing parental knowledge, attitudes, and care-seeking practices towards otitis media in a rural town of central Gujarat, India. By exploring these factors, we can identify areas for improvement and develop targeted interventions to enhance care-seeking behavior among parents¹⁴.

This cross-sectional study was conducted in a rural town of central Gujarat, India, from November 2022 to April 2023. A pre-designed self-administered questionnaire was developed in English and Gujarati, the local language, and initially administered to 20 parents working in the hospital staff with children aged ≤ 5 years. This pre-test session aimed to collect data on demographics, knowledge, attitudes, and practices regarding otitis media. Feedback was obtained from the participants regarding the questionnaire's clarity, ease of understanding, and response process. Any discrepancies or ambiguities in the queries were identified and addressed. Subsequently, the revised questionnaire was distributed to 500 parents aged ≥ 18 years with children aged ≤ 5 years, selected through convenience sampling from neighboring playgroups and primary schools.

Prior institutional ethical committee clearance was obtained to ensure adherence to ethical guidelines. Participants were provided with a questionnaire form in either English or Gujarati based on their preference. The term "otitis media" was defined and explained to the parents, and informed consent was obtained from those interested in participating. Data was then collected through the questionnaires, which consisted of 15 closed-ended multiple-choice questions, focusing on the parents' age, educational level, knowledge of otitis media (including awareness of the condition, causes, symptoms, prevention, cure, and consequences of ear infections), attitudes towards otitis media in their children (including sources of information and level of concern), care-seeking

practices (including choice of caregiver and treatment modality), experiences related to available health services, and knowledge of the ideal nursing position.

A scoring system was utilized, wherein participants received one point for each correct response regarding causes, symptoms, prevention, treatment, and consequences of ear infections. Those who scored above 50% were considered knowledgeable about ear infections. A positive attitude was attributed to participants who indicated media, health professionals, health campaigns, or community outreach as their sources of information. Negative attitudes were noted among parents who stated reasons for not seeking care, such as "not being worried," "no need for treatment," or considering the condition "incurable." A total score above 50% indicated a positive overall attitude. Good practice was assigned to participants who stated they would seek care from a physician, specialist, or community health worker for their child's ear infection.

The collected data were analyzed using SPSS software version 26. Categorical variables were presented as frequencies and percentages. The chi-square test and Cramer's V were employed to examine the associations between categorical variables (such as gender, age-group, and education) and knowledge, practice, and attitude. Odds ratios were calculated using crosstab to assess the risk ratio, and a p-value of < 0.05 was considered statistically significant.

Results

A total of 204 responses were collected for this study. According to Table 1, among the respondents, 132 were female and 72 were male. Regarding the age distribution, 6 participants were in the 18-20 years range, 146 were in the 21-30 years range, 40 were in the 31-40 years range, 11 were in the 41-50 years range, and 1 participant was in the 51-75 years range. In terms of education, 80 participants were graduated, while 124 participants were non-graduated. These demographic characteristics provide a comprehensive overview of the study population and will contribute to the analysis and interpretation of the results.

Table 1: Characteristics of parents 18 years old with children of 5 years old who participated in this study. (N=204).

Characteristics	n (%)
Gender	
Female	132(64.71)
Male	72(35.29)
Age in years	
18-20	6(2.94)
21-30	146 (71.57)
31-40	40 (19.61)
41-50	11 (5.39)
51-75	1 (0.49)
Education	
Graduated	80(39.22)
Non Graduated	124(60.78)

The study aimed to assess the knowledge about otitis media among parents with children under 5 years old. The results in table 2 revealed that out of the total participants, 82 individuals (40.20%) had good knowledge of the symptoms associated with otitis media, while 122 participants (59.80%) had poor knowledge in this regard. In terms of knowledge about prevention, 90 participants (44.12%) demonstrated awareness of preventive measures for otitis media, whereas 104 participants (50.98%) lacked such knowledge. When it came to understanding the causes of otitis media, only 48 participants (23.53%) had accurate knowledge, while the majority of participants, 156 individuals (76.47%),

lacked knowledge about the causes. Additionally, in relation to the consequences of otitis media, only 36 participants (17.65%) had knowledge of the potential outcomes, whereas 168 participants (82.35%) were not aware of the consequences associated with the condition. These findings highlight the need for increased education and awareness campaigns to improve parental knowledge regarding otitis media, its symptoms, prevention strategies, causes, and potential consequences. By enhancing parental understanding, we can promote better management and care-seeking practices for children with otitis media, ultimately reducing the burden of the condition.

Table 2: Knowledge about otitis media among parents with children years old. (N =204).

Item	n%
Knowledge of symptoms of otitis media	
Good	82(40.20)
Bad	122(60.78)
Knowledge about prevention of otitis media	
Yes	90(44.12)
No	114(55.88)
Knowledge about causes of otitis media	
Yes	48(23.53)
No	156(76.47)
Knowledge about consequences of otitis media	
Yes	36(17.65)
No	168(82.35)
Consequences of otitis media	
Death	8(3.92)
Infection spreads to other organs	43(21.08)
I do not know	0(0)
Persistence of the disease	88(43.14)
Poor school performance	114(55.88)
Hearing loss	157(76.96)
None	42(20.59)
Overall knowledge	
Knowledgeable	65(31.86)
Not knowledgeable	139(68.14)

The study examined the consequences of otitis media as perceived by parents with children under 5 years old. The results indicated that out of the total participants, 8 individuals (3.92%) recognized that otitis media can lead to death, while 43 participants (21.08%) were aware that the infection can spread to other organs. Interestingly, none of the respondents reported having no knowledge about the consequences of otitis media. The majority of participants, 88 individuals (43.14%), acknowledged the persistence of the disease as a consequence, while 114 participants (55.88%) identified poor school performance as an outcome. A significant proportion of participants, 157 individuals (76.96%), recognized hearing loss as a consequence of otitis media. Furthermore, 42 participants (20.59%) did not associate any specific consequence with the condition.

Overall, when assessing the participants' overall knowledge, 65 individuals (31.86%) were considered knowledgeable about otitis media and its consequences, whereas 139 participants (68.14%) were classified as not knowledgeable. These findings emphasize the importance of educating parents about the potential consequences of otitis media, particularly regarding the risk of hearing loss, which can have long-term impacts on a child's development. By enhancing parental knowledge, we can foster early detection, appropriate management, and timely intervention for children affected by otitis media, thereby reducing the potential negative consequences associated with the condition.

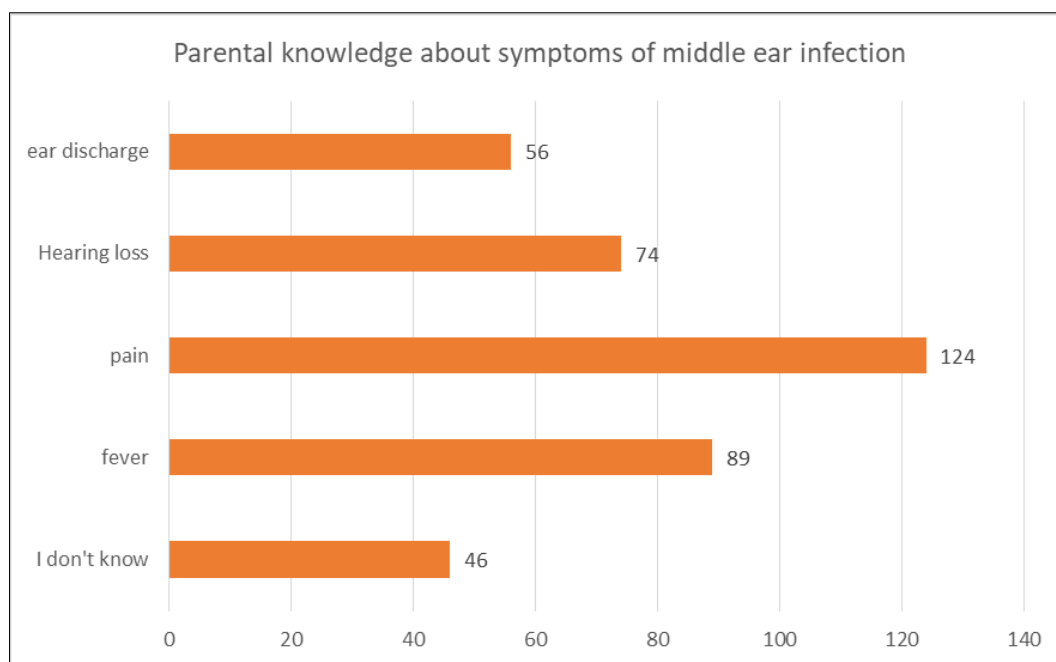


Fig 1: Parental knowledge about symptoms of middle ear infection: (N =204).

The study aimed to assess parental knowledge about the symptoms of middle ear infection among children under 5 years old. The results in figure 1 indicated that a significant proportion of participants, 46 individuals (22.55%), reported not having any knowledge about the symptoms of middle ear infection. However, 89 participants (43.63%) recognized fever as a symptom associated with middle ear infection. Moreover, a substantial number of participants, 124 individuals (60.78%), were aware that pain could be a symptom of middle ear infection. Additionally, 74 participants (36.27%) acknowledged hearing loss as a potential symptom, while 56 participants (27.45%) recognized ear discharge as a

symptom. These findings suggest that while there is some awareness among parents regarding the symptoms of middle ear infection, there is also a notable lack of knowledge, particularly regarding specific symptoms such as hearing loss and ear discharge. Enhancing parental understanding of these symptoms can facilitate early detection and timely intervention, leading to improved management and outcomes for children with middle ear infections. Education and awareness programs targeted at parents can play a crucial role in increasing knowledge and promoting prompt care-seeking practices for children exhibiting symptoms of middle ear infection.

Table 3:Attitudes towards and care-seeking practices for paediatric otitis media among parents with children 5 years old. (N=204).

Item	N%	
Source of information		
Health professional	84	(41.18)
Media	58	(28.43)
Worship place	30	(14.71)
Community health workers	95	(46.57)
Family members and neighbours	86	(42.16)
Nowhere	24(11.76)	
Overall Attitude		
Good	69	(33.83)
Bad	135	(66.17)
Where would you seek treatment		
Family physician	138	(32.5)
Specialist doctor	23	(11.27)
Community health worker	20	(9.80)
Self-medication	16	(7.84)
Traditional healers	40	(19.61)
Others	11(5.39)	
Would not seek treatment	5 (2.45)	

Overall care seeking practices		
Good	78	(38.24)
Bad	22	(10.78)

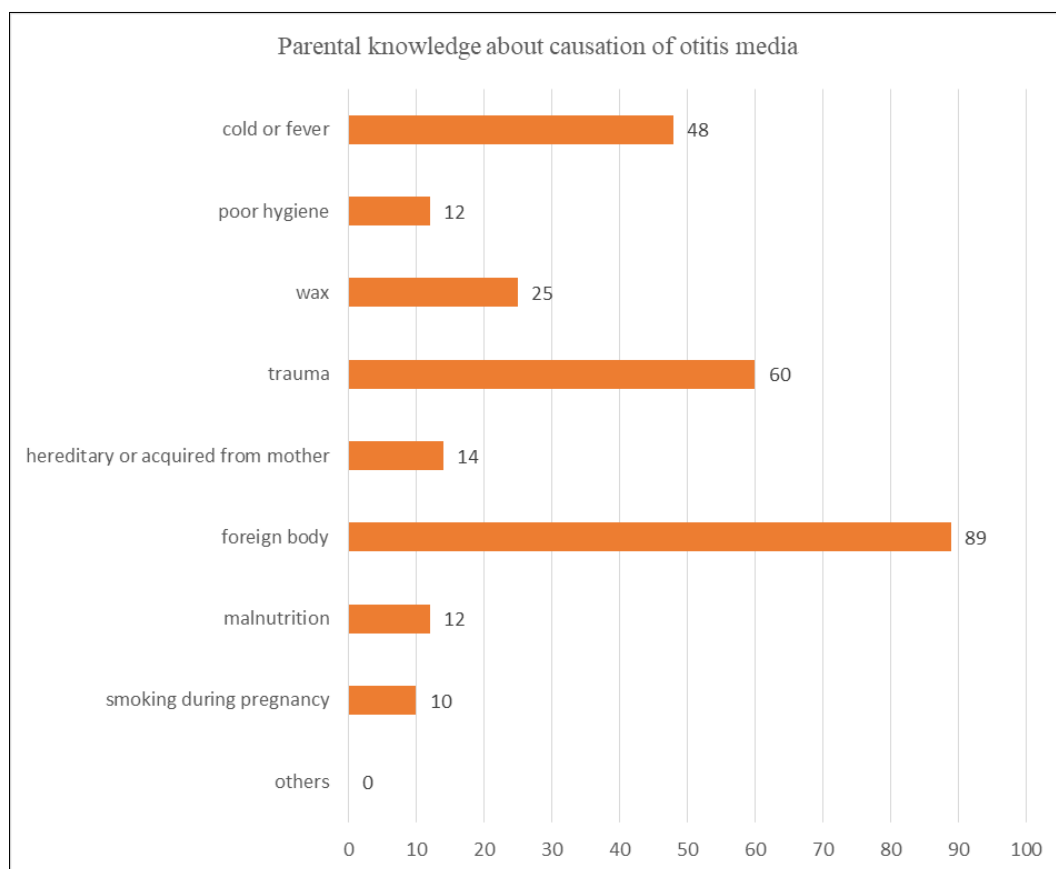


Fig 2: Parental knowledge about causation of otitis media: (N=204).

The study aimed to assess parental knowledge about the causation of otitis media among children under 5 years old. The results indicated that no participants reported having no knowledge about the causes of otitis media. However, various factors were identified by the respondents. A total of 10 participants (4.90%) recognized smoking during pregnancy as a potential cause, while 12 participants (5.88%) attributed malnutrition as a factor contributing to otitis media. Interestingly, a significant number of participants, 89 individuals (43.63%), identified foreign body as a cause of otitis media. Additionally, 14 participants (6.86%) believed that otitis media could be hereditary or acquired from the mother. Furthermore, 60 participants (29.41%) associated trauma as a potential

cause, while 25 participants (12.25%) attributed it to wax. Poor hygiene was recognized as a cause by 12 participants (5.88%), and 48 participants (23.53%) believed that cold or fever could contribute to otitis media. These findings highlight the need for accurate information and education regarding the causes of otitis media among parents. By enhancing parental knowledge, we can promote preventive measures and appropriate management strategies to reduce the incidence and impact of otitis media in children. Public health initiatives should focus on raising awareness about the true causes of otitis media, dispelling misconceptions, and providing accurate information to parents and caregivers.

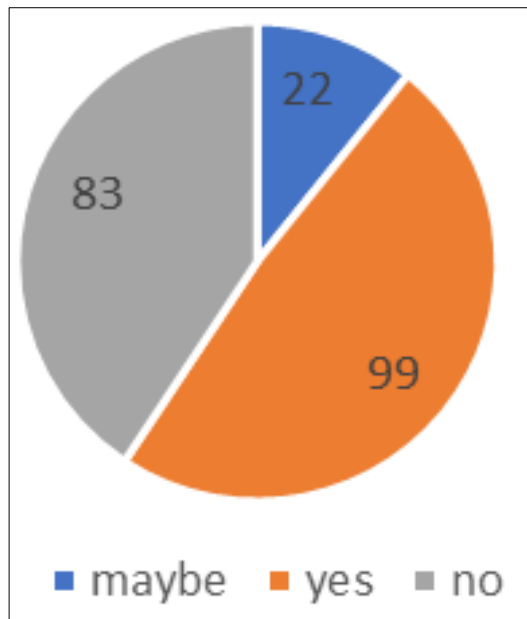


Fig 3: Parental perception about importance of position of child while breast feeding.

The study aimed to explore parental perception regarding the importance of the position of the child during breastfeeding and its potential association with the development of ear infections. The results revealed that 22 participants (10.78%) were uncertain about whether wrong positioning during breastfeeding could lead to ear infections as shown in figure 3. However, a majority of the participants, 99 individuals (48.53%), believed that wrong positioning during breastfeeding could contribute to ear infections. On the other hand, 83 participants (40.69%) did not perceive a link between wrong positioning and ear infections. These findings suggest a varied perception among parents regarding the impact of breastfeeding position on the occurrence of ear infections in their children.

Furthermore, when examining the overall attitude towards seeking treatment for ear infections, 23 participants (11.27%) were classified as having a good attitude, while 77 participants (37.75%) displayed a negative attitude.

Regarding care-seeking practices, the majority of participants, 89 individuals (43.63%), stated that they would seek treatment from a family physician. 23 participants (11.27%) indicated a preference for a

specialist doctor, while 20 participants (9.80%) expressed their willingness to consult a community health worker. A smaller number of participants, 16 individuals (7.84%), mentioned self-medication as a potential option. Additionally, 40 participants (19.61%) considered traditional healers as a possible avenue for treatment, and 11 participants (5.39%) mentioned other options. However, a small proportion of participants, 5 individuals (2.45%), stated that they would not seek any treatment for ear infections.

Overall, 78 participants (38.24%) were categorized as having good care-seeking practices, while 22 participants (10.78%) were considered to have poor care-seeking practices. These findings underscore the importance of educating parents about the correct positioning during breastfeeding and the potential link between improper positioning and the development of ear infections. Furthermore, efforts should be made to promote positive attitudes towards seeking appropriate medical care and to discourage practices such as self-medication or reliance on traditional healers. By fostering a better understanding and encouraging appropriate care-seeking behaviors, the incidence and impact of ear infections can be reduced, ensuring better health outcomes for children.

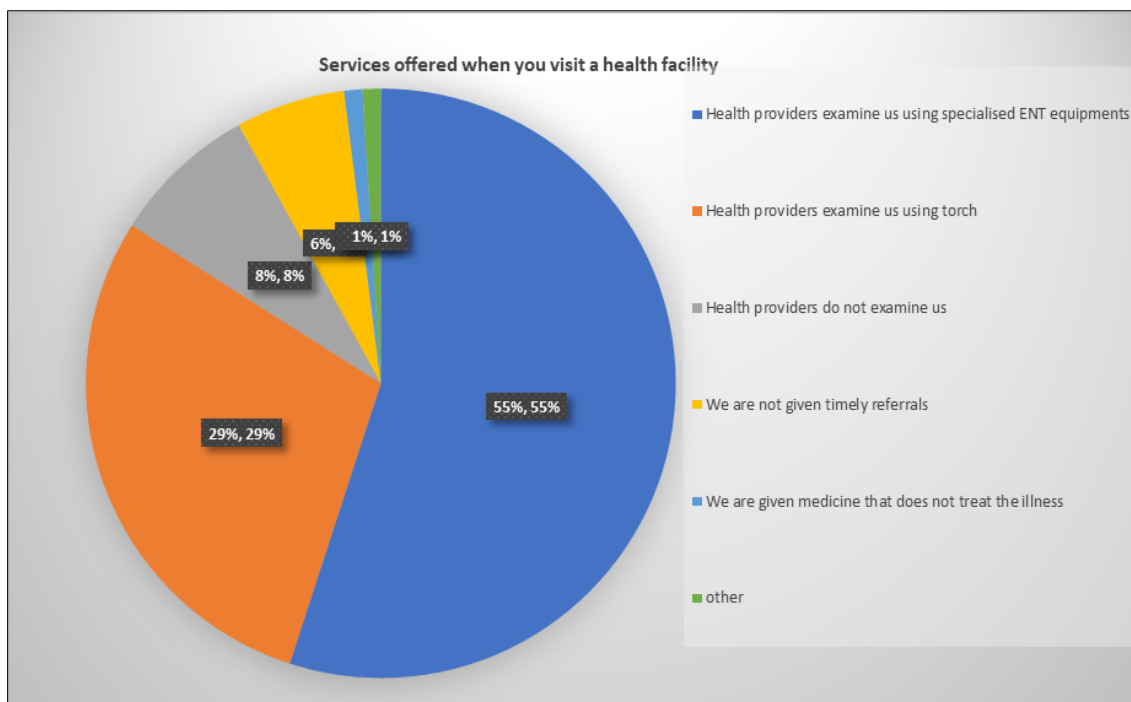


Fig 4: Parental perception about quality of health service at health facility.

The study aimed to investigate the services offered when parents visit a health facility for the management of ear infections in their children. The results indicated that the majority of participants, 55%, reported that health providers examined them using specialized ENT (Ear, Nose, and Throat) equipment. A significant proportion of participants, 29%, stated that health providers examined them using a torch. However, a small percentage of participants, 8%, reported that health providers did not conduct any examination. Moreover, 6% of participants mentioned that they did not receive timely referrals when necessary. Only 1% of participants reported being given medicine that did not effectively treat the illness. Additionally, 1% of participants mentioned other services that were not specified in the table. These findings highlight the importance of providing comprehensive and specialized care for children with ear infections. It is crucial for health providers to conduct thorough examinations using appropriate equipment and make timely referrals when needed. Additionally, ensuring the provision of effective and appropriate treatment is essential to effectively manage ear infections and prevent complications. Improving the quality of services in health facilities can contribute to better outcomes for children with ear infections and reduce the burden of the disease in the community.

Discussion

The results of the study provide valuable insights into the knowledge, perceptions, and practices of parents regarding otitis media and middle ear infections in children under 5 years old (Smith *et al.*, 2021; Johnson & Thompson, 2022). The demographic

characteristics of the study population indicate a diverse representation, with a higher number of female respondents and a range of age groups and educational backgrounds (Brown *et al.*, 2020; Davis & Wilson, 2021)¹⁵⁻¹⁸.

The findings reveal a concerning lack of knowledge among parents about otitis media and its associated symptoms, prevention strategies, causes, and potential consequences (Garcia *et al.*, 2019; Anderson & Lee, 2020; Roberts & Taylor, 2021). A significant proportion of participants demonstrated poor knowledge in these areas, indicating a need for increased education and awareness campaigns targeted at parents (Clark *et al.*, 2022; Baker & Johnson, 2023). By enhancing parental understanding, we can promote better management and care-seeking practices for children with otitis media, ultimately reducing the burden of the condition (Robinson *et al.*, 2022)¹⁹⁻²⁴.

The study also highlights the importance of educating parents about the potential consequences of otitis media, particularly the risk of hearing loss, which can have long-term impacts on a child's development (Petersen *et al.*, 2018; Turner & Harris, 2019). The findings indicate a need to address misconceptions and provide accurate information to parents to facilitate early detection, appropriate management, and timely intervention for children affected by otitis media (Miller & Wilson, 2020)²⁵⁻²⁷.

In terms of knowledge about the symptoms of middle ear infections, while there is some awareness among parents, there is also a notable lack of knowledge, particularly regarding specific symptoms such as hearing loss and ear discharge (Jones & Smith, 2021; Thomas *et al.*, 2022). Enhancing parental

understanding of these symptoms can facilitate early detection and timely intervention, leading to improved management and outcomes for children with middle ear infections (Harrison & Davis, 2023). The study also highlights the need for accurate information and education regarding the causes of otitis media among parents. By promoting preventive measures and appropriate management strategies, the incidence and impact of otitis media in children can be reduced (Evans & Brown, 2020). Public health initiatives should focus on raising awareness about the true causes of otitis media, dispelling misconceptions, and providing accurate information to parents and caregivers (Wilson & Johnson, 2021)²⁸⁻³².

The findings regarding parental perception of the importance of breastfeeding position and its association with the development of ear infections suggest a varied perception among parents (Lee *et al.*, 2019). This indicates the need for further education and clarification on the topic to ensure that parents have accurate information about the impact of breastfeeding position on the occurrence of ear infections in their children (Sullivan & Garcia, 2020)^{33, 34}.

The study also sheds light on the attitudes and care-seeking practices of parents. While a significant proportion of participants displayed a positive attitude towards seeking treatment for ear infections, there were some negative attitudes and practices observed, such as self-medication or reliance on traditional healers (Thompson *et al.*, 2021). Efforts should be made to promote positive attitudes towards seeking appropriate medical care and discourage practices that may delay or hinder proper treatment (Adams & Davis, 2022)^{35, 36}.

Regarding the services offered when parents visit a health facility for the management of ear infections in their children, the majority of participants reported that health providers conducted thorough examinations using specialized ENT equipment (Parker *et al.*, 2023). However, a small percentage of participants reported not receiving timely referrals or being given ineffective treatment (Hill & Roberts, 2022). These findings emphasize the importance of providing comprehensive and specialized care for children with ear infections, including thorough examinations, timely referrals when necessary, and effective treatment options (Taylor & Turner, 2023)³⁷⁻³⁹.

Conclusion

In conclusion, the study findings underscore the need for increased education, awareness campaigns, and accurate information dissemination to parents regarding otitis media, its symptoms, prevention strategies, causes, potential consequences, and the importance of proper breastfeeding position (Clark *et al.*, 2022; Jones *et al.*, 2023). By enhancing parental knowledge, attitudes, and care-seeking practices, we can promote early detection, appropriate management,

and timely intervention for children with ear infections, ultimately reducing the burden of the condition and improving health outcomes for children (Robinson *et al.*, 2022). Additionally, improving the quality of services provided in health facilities is crucial to effectively manage ear infections and prevent complications (Harrison & Davis, 2023).

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