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Knowledge, Attitude and Practice Among Parents Of Children With Otitis Media Attending A Tertiary Care Hospital - A Cross Sectional Study

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ABSTRACT

Introduction: Otitis media is one of the common ENT problem encountered in day-to-day practices. It is one of the significant causes of hearing loss in children. Studies have shown that about 11% of the population suffered from acute otitis media, whereas 5% of the patients suffered from chronic otitis media. The consequences of otitis media in untreated children were found to be debilitating. So, proper diagnosis and treatment were needed to prevent the complication, and adequate knowledge about the disease was needed for the parents. The aim of the study was to assess parents' knowledge, attitudes, and practices regarding children with otitis media in a tertiary care hospital in Puducherry.

Methods: The study was conducted among parents attending the hospital with their children in a tertiary care centre in Puducherry. The study was conducted between April 2024 and June 2024. A semi-structured questionnaire was administered to all the study participants.

Results: A total of 140 parents participated in the study. In the study, most parents know the symptoms and causes of otitis media. The study showed that 69.3% of the parents had good knowledge, 71.4% had a positive attitude, and 75% had good practices concerning otitis media and the knowledge score was significantly associated with age (p-0.042), gender (p-<0.001), locality (p-0.001), occupation (p-<0.001) and the number of children (p-<0.001) and attitude score was associated with age (p-<0.001), gender (p-0.010), locality (p-<0.001), occupation (p-0.001), socio-economic status (p-0.021) and number of children (p-0.036) and the practice score significant association with age (p<0.001), gender (p<0.001), occupation (p-0.008), socioeconomic status (p-0.013) and number of children (p-0.009).

Conclusion: The knowledge attitude and practice regarding the otitis media were found to be adequate among the parents. The study recommends that parents should be encouraged to have an annual health check-up visit with their children to find out the condition at an earlier stage and treat them accordingly.

Keywords: *Otitis media, knowledge, children, parents*

1. INTRODUCTION

Otitis media is one of the most common ear disease encountered in daily practice, and it is one of the reasons for the development of hearing loss [1]. Otitis media is defined as persistent inflammation of the middle ear cleft. Studies have shown that about 11% of the population suffered from acute otitis media, whereas 5% of the patient suffered from chronic otitis media. Studies have shown that chronic otitis media is more prevalent in developing countries [2].

It was estimated that about 22.6% of the children affected by the disease were found to be below five years old [2]. Studies have shown that about 6% of the Indian population was found to be suffering from chronic ear diseases [3]. Often, acute ear infections in the pediatric age group can present a confusing picture of an irritated child with a fever. It often requires a high index of suspicion on the clinician to make the diagnosis at the correct time [4,5]. The condition leads to the development of conduction hearing loss. Over some time, due to the constant exposure of the inner ear to various microorganisms and antibiotics, the parents are prone to the development of sensorineural hearing loss [6]. Sometimes, the disease results in sequelae such as persistent tympanic membrane perforation and other complications such as neck abscess, mastoiditis, meningitis and labyrinthitis. It will directly and indirectly affect the parents' socioeconomic status and quality of life [7]. Hence, the disease should be managed appropriately to prevent complications and improve the parent's quality of life.

Passive smoking, bottle feeding, lower socioeconomic status, attending daycare centres and frequent upper respiratory tract infections are the risk factors for the development of otitis media. As some of the risk mentioned above factors are modifiable, appropriate parents' knowledge and willingness to make appropriate lifestyle changes play a vital role in reducing the prevalence of otitis media and its complications [8–10]. Studies have shown that about 28,000 deaths occur due to complications of otitis media, such as meningitis and brain abscess. However, most parents underestimate the risk of otitis media [10,11].

Till now, only a few studies have investigated the parents' knowledge, attitude and practice regarding acute otitis media in children in developing countries [12,13]. So, this study was planned to assess the knowledge, attitude and practice regarding otitis media with children under 12 years old in a tertiary care centre in Puducherry, India.

1. METHODS

Study design

This cross-sectional study was conducted in a tertiary care centre in Puducherry, India, from April 2024 to June 2024. After obtaining the consent of each participant, a semi-structured questionnaire was administered to all the study participants. The calculated sample size was 140 based on a study conducted by Yogesh Dabholkar et al [11].

Data collection

The questionnaire was pretested in 5% of the study population before the actual data collection of the study population. This was done to assess the ambiguity and comprehensibility of the questionnaire, and subsequent modification was done for ease of comprehension. The study participants who were included in the pretesting were excluded from the study. Experts in the research subject from the departmental research committee of the Institute validated the content of the questionnaire. Convenient sampling methods were used to choose the participants. All the parents were approached and informed about the study's objectives and assured that the information collected would be kept confidential. All the parents who gave written consent were provided with a pre-tested self-administered questionnaire with the condition that all the questions should be answered compulsorily. The anonymity of the participants was also assured and ensured among the study participants.

Variables of the study

The semi-structured questionnaire consisted of four parts. The first part consisted of the basic demographic details like age, gender, socioeconomic status [14], year of the study course, and study participant locality. The second part consisted of six knowledge questions with multiple answers. A correct answer was given one mark, and no mark was awarded to the negative answers. Based on the total score, the level of knowledge was divided into good, fair and poor. A cumulative score of more than seven was considered good knowledge, a score between 3 and 7 was considered fair knowledge, and a score of less than three was considered poor knowledge. The third part consisted of 6 attitude questions with multiple options. A cumulative score of more than three was taken as a positive attitude, and a score of less than three was taken as a poor attitude. The fourth part of the questionnaire consisted of 4 questions with multiple-choice answers. A score of more than four was considered good practice, and a score of less than four was considered bad practice.

Statistical analysis

All the data were entered in Excel and analysed through SPSS version 25 software. The chi-square test was used to test the association. The p-value of < 0.05 was considered significant.

Ethical approval

The approval of the study protocol was obtained from the Institute Ethics Committee of Sri Venkateshwaraa Medical College and Hospital, Ariyur, Puducherry, India, with the reference number CUTN/IHESC/2020-001R1.

2. RESULTS

A total of 140 parents participated in the study. 39.3% of the study participants were between 26 and 30 years old, followed by 30.7% of the study participants who were 18 to 25 years of age, 72.1% of the participants were found to be females, and 68.5% were from rural areas. About 39.3% of the study participants were skilled workers, whereas the skilled workers contributed to 32.1% of the total study participants and 38.6% of the study participants belonged to class IV socio-economic classification and more than half of the parents (61.4%) had more than one child, as in Table 1.

Table 1: Socio-demographic distribution of study participants

Age (in years)	Frequency	Percentage
18-25	43	30.7

26-30	55	39.3
31-35	33	23.6
>35	9	6.4
Gender		
Male	39	27.8
Female	101	72.1
Locality		
Rural	96	68.5
Urban	44	31.4
Occupation		
Unskilled	17	12.1
Semiskilled	55	39.3
Skilled	45	32.1
Professional	23	16.4
Socio-Economic Status		
Class I	34	24.3
Class II	29	20.7
Class III	23	16.4
Class IV	54	38.6
No of Children		
1	54	38.6
≥1	86	61.4

On evaluating various knowledge questions, the study found that about 72.1% of the parents knew that otitis media is a disease of the ear, and about 32.1% of the parents knew that ear discharge is a common symptom of otitis media, followed by ear pain which constitutes about 25%. 32.8% of the parents stated that frequent episodes of upper respiratory tract infection lead to the development of otitis media, and 25% of the participants informed that acute pharyngitis can lead to otitis media. Nearly half of the parents (52.8%) know that otitis media can be diagnosed by otoscopy, and more than half of the parents (64.3%) know that otitis media can be treated with medical management. Most of the study participants know the consequences of the otitis media, as in Table 2.

Table 2: Distribution of study participants based on knowledge questions

Knowledge Questions		
Otitis media affects		
Ear	101	72.1
Nose	33	23.6
Throat	6	4.2
Symptoms of otitis media		
Ear discharge	45	32.1

Ear pain	35	25
Hearing loss	22	15.7
Fever	17	12.1
Nasal block	11	7.8
Sneezing	10	7.1
Causes of otitis media		
Frequent URTI	46	32.8
Acute pharyngitis	36	25.7
Malnutrition	25	17.8
Wax	21	15
Foreign body	12	8.6
Diagnosis of otitis media		
Otoscopy	74	52.8
X-ray	43	30.7
CT-Scan	23	16.4
Treatment of otitis media		
Medical management	90	64.3
Surgical management	33	23.6
Native medicines	17	12.1
Consequences of otitis media		
Hearing loss	66	47.1
Poor school performance	34	24.3
Extension to brain	22	15.7
Death	18	12.8

The study showed that about 69.3% of the parents had good knowledge about otitis media, followed by 21.4% of the parents who had fair knowledge, and only 9.2% of them had poor knowledge regarding otitis media, as in Figure 1.

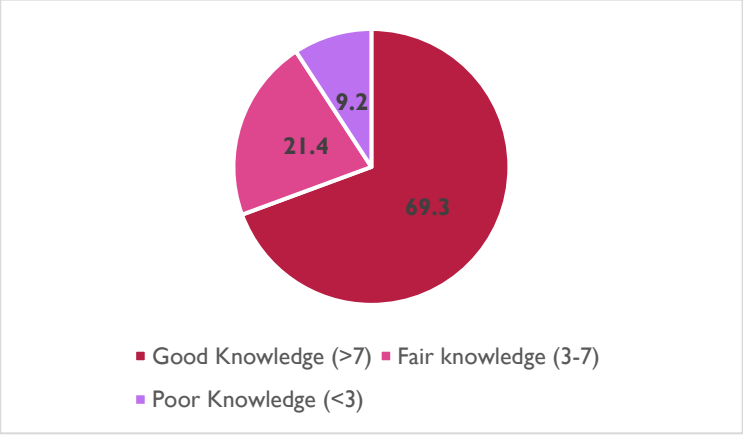

Figure 1: Distribution of study participants based on knowledge score

On correlating the association between the various demographic factors with the level of knowledge of the parents regarding otitis media, the study showed a significant association with the age (p-0.042), gender (p-<0.001), locality (p-0.001), occupation (p-<0.001) and number of children (p-<0.001), as in Table 3.

Table 3: Relationship of socio-demographic details with knowledge score

	Good knowledge	**Fair knowledge**	**Poor knowledge**	**p-value**
Age				
18-25	27 (19.3)	9(6.4)	7(5)	0.042
26-30	42(30)	11(7.8)	2(1.4)	
31-35	23(16.4)	9(6.4)	1(0.7)	
>35	5(3.6)	1(0.7)	3(2.1)	
Gender				
Male	18(12.8)	10(7.1)	11(7.8)	<0.001
Female	79(56.5)	20(14.3)	2(1.4)	
Locality				
Rural	71(50.7)	21(15)	4(2.8)	0.001
Urban	26(18.6)	9(6.4)	9(6.4)	
Occupation				
Unskilled	4(2.8)	10(7.1)	3(2.1)	<0.001
Semiskilled	44(31.4)	5(3.5)	6(4.2)	
Skilled	39(27.8)	5(3.5)	1(0.7)	
Professional	10(7.1)	10(7.1)	3(2.1)	
Socio economic status				
Class I	28(20)	4(2.8)	2(1.4)	0.112
Class II	22(15.7)	6(4.3)	1(0.7)	
Class III	12(8.6)	9(6.4)	2(1.4)	
Class IV	35(25)	11(7.8)	8(5.7)	
No of children				
1	23(16.4)	21(15)	10(7.1)	<0.001
>1	74(52.8)	9(6.4)	3(2.1)	

On evaluating the attitude of the parents regarding otitis media, nearly half of the parents (46.4%) had the attitude that they would seek treatment immediately after getting symptoms of the otitis media, and 63.6% of the parents had attitude that otitis media is a curable disease and 53.6% of the parents believed that otitis media is a treatable disease. The reason for the non-adherence to the treatment was due to it heals without treatment, which accounts for 35% and expensive and unaffordable treatment constituted 27.8%, and nearly half of the parents 48.6% believed that the otitis media could spread to other siblings in the family and majority 47.8%, had disagreed that the untreated and frequent URTI leads to otitis media, as in Table 4.

Table 4: Distribution of study participants based on attitude questions

Attitude questions		
Attitude of parents to seek treatment		
Immediately	65	46.4
Within one day	39	27.8
Within one week	26	18.6
Never	10	7.1
Otitis media is a curable disease.		
Agree	89	63.6
Disagree	35	25
Don’t know	16	11.4
Otitis media is a treatable disease.		
Agree	75	53.6
Disagree	45	32.1
Don’t know	20	14.3
Reason for non-adherence to treatment		
Expensive and unaffordable	39	27.8
Heals without treatment	49	35
Incurable disease	27	19.3
Don’t know where to get treatment	25	17.8
Otitis media can spread to other siblings in the family.		
Agree	68	48.6
Disagree	44	31.4
Don’t know	28	20
Untreated, frequent URTI leads to otitis media.		
Agree	45	32.1
Disagree	67	47.8
Don’t know	28	20

The study showed that 71.4% of the parents had a positive attitude towards otitis media, and only 28.6% had a negative attitude towards otitis media, as in Figure 2.

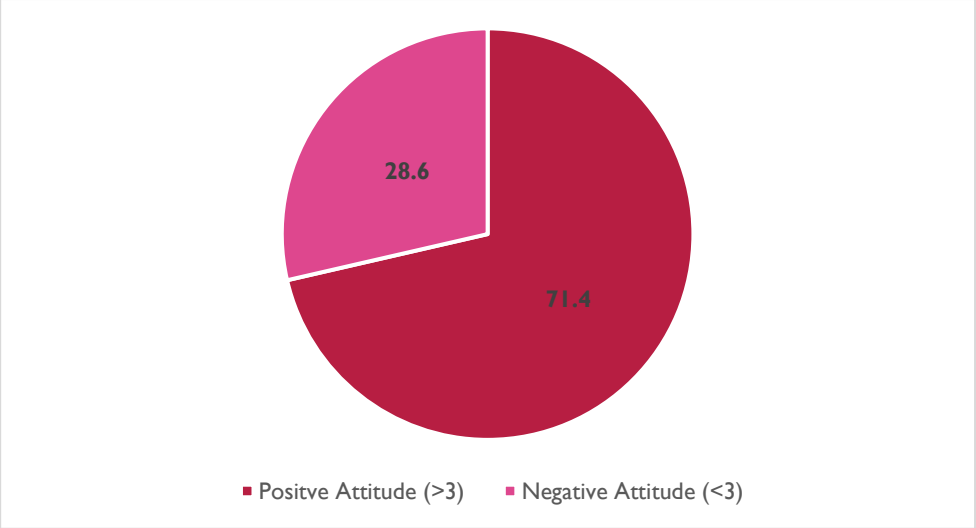

Figure 2: Distribution of study participants based on attitude score

On correlating the association between the various demographic factors with the attitude level of the parents regarding the otitis media, the study showed a significant association with the age (p-<0.001), gender (p-0.010), locality (p-<0.001), occupation (p-0.001), socio-economic status (p-0.021) and number of children (p-0.036), as in Table 5.

Table 5: Relationship of socio-demographic details with attitude score

Variable	Positive attitude	Negative attitude	p-value
Age			
18-25	7(5)	20(14.3)	<0.001
26-30	37(26.4)	5(3.5)	
31-35	12(8.6)	11(7.8)	
>35	1(0.7)	4(2.8)	
Gender			
Male	34(24.3)	5(3.6)	0.010
Female	66(47.1)	35(25)	
Locality			
Rural	84(60)	12(8.6)	<0.001
Urban	16(11.4)	28(20)	
Occupation			
Unskilled	6(4.3)	11(7.8)	0.001
Semiskilled	38(27.1)	17(12.1)	
Skilled	35(25)	10(7.1)	
Professional	21(15)	2(1.4)	
Socio economic status			
Class I	30(21.4)	4(2.8)	0.021
Class II	23(16.4)	6(4.2)	

Class III	14(10)	9(6.4)	
Class IV	33(23.6)	21(15)	
No of Children			
1	44(31.4)	10(7.1)	0.036
≥1	56(40)	30(21.4)	

On assessing the practice of the parents regarding the otitis media, the study showed that 31.4% of the parents seek a specialized doctor for the treatment, 26.4% of parents seek a family physician for treatment, and 15.7% of parents seek a traditional healer for treatment. The study also found that 47.8% of the parents plug the ear with cotton when they notice ear discharge from their children, 26.4% of the parents informed that the health providers examined their child with a torch when they visited the health facility, and 24.3% of them examined with ENT equipment and nearly half of the parents (48.6%) responded that they will follow up to the health care facility only if the symptoms aggravate as in Table 6.

Table 6: Distribution of study participants based on practice questions

Practice questions		
Place of treatment for otitis media		
Family physician	37	26.4
Specialised doctor	44	31.4
Traditional healer	22	15.7
Community health worker	29	20.7
Other	8	5.7
Kind of action on noticing ear discharge		
Plug ear with cotton	67	47.8
Installation of ear drops to relieve discharge	39	27.8
Use of herbal medicine	30	21.4
Other	6	4.3
Services offered when visiting health facility		
Health providers examined with ENT equipment	34	24.3
Health providers examined with a torch	37	26.4
Health providers do not examine us	33	23.6
We are not given timely referrals	29	20.7
We are given medicines that do not treat illness	7	5
When will you go for a follow-up after the initial visit?		
After five days	49	35
If symptoms aggravate	68	48.6
Never visit	23	16.4

The study showed that about 75% of the parents had good practices for the otitis media, and only 25% of the parents had poor practices regarding otitis media, as in Figure 3.

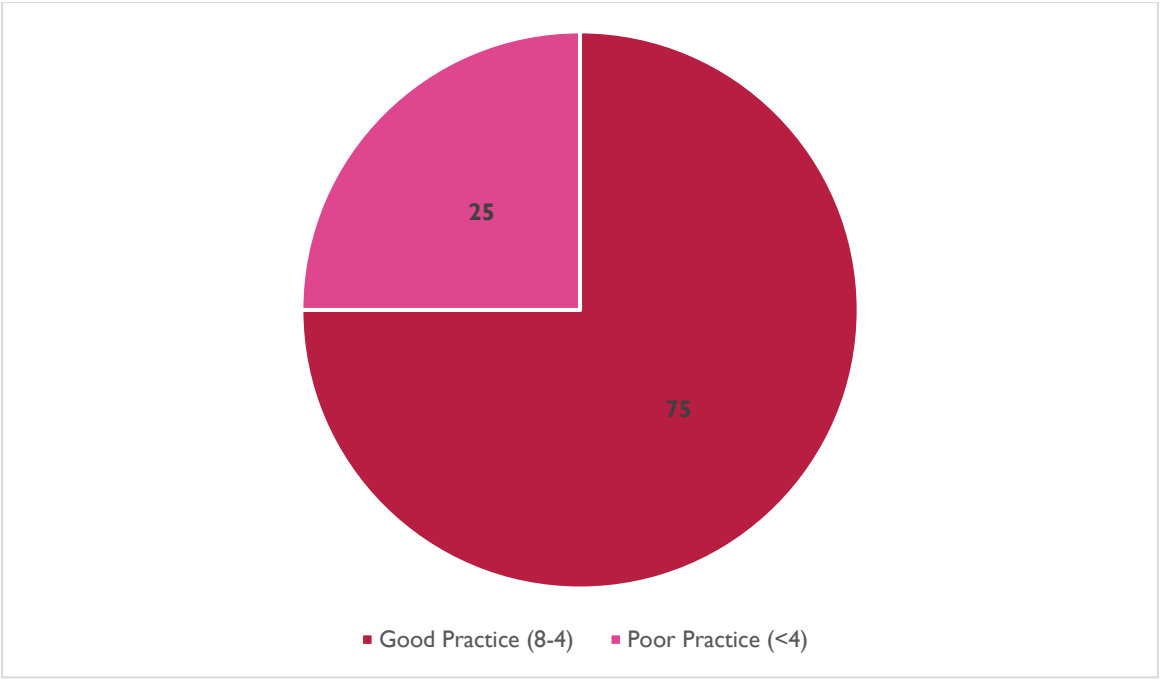

Figure 3: Distribution of study participants based on Practice score

On correlating the association between the various demographic factors with the practice level of the parents regarding the otitis media, the study showed a significant association with age (p<0.001), gender (p<0.001), occupation (p-0.008), socioeconomic status (p-0.013) and number of children (p-0.009), as in Table 7.

Table 7: Relationship of socio-demographic details with practice score

Variable	Good Practice	Poor Practice	p-value
Age			
18-25	10(7.1)	17(12.1)	0.001
26-30	27(19.3)	15(10.7)	
31-35	22(15.7)	1(0.7)	
>35	3(2.1)	2(1.4)	
Gender			
Male	17(12.1)	22(15.7)	<0.001
Female	88(62.8)	13(9.3)	
Locality			
Rural	71(50.7)	25(17.8)	0.674
Urban	34(24.3)	10(7.1)	
Occupation			
Unskilled	14(10)	3(2.1)	0.008
Semiskilled	46(32.8)	9(6.4)	
Skilled	34(24.3)	11(7.8)	
Professional	11(7.8)	12(8.6)	

Socio economic status			
Class I	31(22.1)	3(2.1)	0.013
Class II	23(16.4)	6(4.3)	
Class III	18(12.8)	5(3.6)	
Class IV	33(23.6)	21(15)	
No of Children			
1	47(33.6)	7(5)	0.009
≥1	58(41.4)	28(20)	

3. DISCUSSION

Otitis media is one of the common disease encountered in children. If left untreated, the recurrent episodes of the otitis media can progress to chronic otitis media and lead to hearing loss. Hence, prompt diagnosis and treatment are necessary to prevent complications from otitis media. Proper knowledge about otitis media is needed so parents can treat their children effectively.

In our study, most parents know that otitis media is a disease of the ear, and most of them know the symptoms of otitis media and about 32.1% of the parents responded that ear discharge is the common symptom of otitis media, followed by Ear pain (25%), hearing loss (15.7%), fever (12.1%), nasal block (7.8%) and sneezing (7.1%). The study by Dabholkar et al. [11] showed that about 60.4% of the parents responded that pain was the most common symptom, followed by 48.2% of the parents opt for ear discharge, and 43.2% opt for fever. The study by Agyemang et al. [14] showed that ear tugging is the most common symptom of otitis media and accounts for 99.1%, followed by restlessness, which accounts for 98.2%. The study by Mukara et al. [12] was similar to a study in Rwanda, where 47% of participants identified two ear infection symptoms. In our study, about 32.8% of the parents stated that frequent episodes of upper respiratory tract infection cause otitis media, followed by acute pharyngitis (25.7%) and malnutrition (17.8%). The study by Dabholkar et al. [11] showed that cold or fever is the most common cause of otitis media (42.7%), followed by poor hygiene (39%). In our study, about 64.3% of the parents know the treatment of otitis media. Similar to our study, in the study by Dabholkar et al. [11], about 88.4% of the parents know the correct treatment of the otitis media. In our study, most parents knew the consequences of the otitis media, and similar results were also noted in the study by Dabholkar et al. [11], where 97.4% of the parents knew the consequences of the infection. In our study, only 24.3% of the parents knew that otitis media can affect school performance. The study by Aithal et al. [15] informed that the otitis media during the preschool years can affect the auditory processing skills, and the children find it difficult to process auditory information in the noisy classroom and which also leads to the difficulties in reading and spelling.

Our study showed that about 69.3% of the parents had good knowledge about otitis media, 21.4% had fair knowledge, and only 9.2% needed better knowledge about otitis media. The study by Dabholkar et al. [11] showed that 77% of the parents had enough knowledge regarding otitis media. Agyemang et al. [16] showed that about 88.6% of the parents in their study had adequate knowledge about the infection. On correlating the association between the various demographic factors with the level of knowledge of the parents regarding the otitis media, the study showed a significant association with the age (p-0.042), gender (p-<0.001), locality (p-0.001), occupation (p-<0.001) and number of children (p-<0.001). Dabholkar et al. [11] showed that education is associated with the knowledge level of the study. The study by Mukara et al. [12] showed that the parents' age between 46 and 60 years, residence, level of education, and mode of treatment were associated with the parents' knowledge level.

In our study, about 46.4% of the parents immediately sought treatment for the infection, and more than half of the parents had the attitude that otitis media is curable (63.6%) and treatable infection (53.4%). The majority of the parents believed that the disease without treatment and expensive and unaffordability are the significant causes of non-adherence to the treatment and 48.6% of the parents believe that the disease can spread to the other siblings in the family. The study by Agyemang et al. also showed that 39.5% of the parents immediately seek treatment for the disease. In the same study, 7% of the parents informed that the disease could resolve spontaneously. Only 6% of the parents believed that otitis media is a curable disease, and this shows the negative attitude of the parents. The study by Alhefdhi et al. [16] showed that 83.5% of the parents informed that antibiotics were the treatment of the choice for the management of the infection, and 84.5% knowledge that the medicine for pain relief and fever helps in the treatment of the disease. Similar to our study, the parents in the Alhefdhi et al. study also had enough knowledge on the treatment of the otitis media. The study showed that 71.4% of the parents had a positive attitude toward the disease. Similar to our study, Dabholkar et al. [11] also showed that 61% of the parents had a positive attitude towards the disease. Similar to the study by Mukara et al. [12], it also showed that about 79.6% of the parents

had positive attitudes to the disease. Similar results were also noted in the study by Ayas et al. [17], where 86.2% of the parents had a positive attitude towards the disease.

The study showed a significant association between age, gender, locality, occupation, socioeconomic status, and the number of children with the attitude score. The study by Mukara et al. [12] Showed that age (p-0.001), education (p-0.034), low socioeconomic status (p-0.009), modes of treatment such as traditional medicine (p0.031) and medical pluralism (p-0.010) were found to be significantly associated with the attitude level—however, the study by Dabholkar et al. [11] and Ayas et al. [17] Didn't show any association between the various demographic factors and the attitude level of the study.

In our study, the majority of the parents know the correct place of the treatment; only 15.7% of the parents will go to a traditional healer, and half will respond by plugging the ear with a cotton plug on noticing the ear discharge. Most parents know the services offered to their children in the health care facility. 48.6% of the parents will seek follow-up advice on the aggravation of the symptom, and 35% will review it five days after the treatment. Dabholkar et al. [11] showed that 57.9% of the parents sought a specialist doctor for treatment, followed by 32.5% seeking a family physician. The study by Mukara et al. [12] also showed that about 96 study participants sought health facilities for treatment. However, the study by Agyemang et al. showed that most parents will apply ear drops when they notice the ear discharge, followed by plugging the ear canal with a cotton plug—the study by Dabholkar et al. [11] also showed that 42% of the healthcare providers examined us with specialised ENT instruments, followed by 27.7% of the healthcare providers examined with a torch.

In our study, about 75% of the parents had good practices for otitis media. The study showed significant association with age, gender, occupation, socio-economic status and number of children. Dabholkar et al. [11] showed that 69.6% of the parents had good practices in managing otitis media, and the study also showed that age and education were associated with the practice score. The study by Mukara et al. [12] showed that none of the demographic variables, such as age, residence, level of education, or socioeconomic status, were associated with the study participants' practice level. However, the study by Srikanth et al. [10] and Clarke et al. [18] showed that education and social economic progress are vital in the person's knowledge, attitude, and practice.

4. CONCLUSION

Most parents had adequate knowledge, attitude and practices regarding the otitis media. Although the parents had adequate knowledge of the disease, the incidence of otitis media was rising. So, further improvement is needed to improve the parents' knowledge, attitude, and practice level. Various informative materials should be displayed in the health care facility and the schools regarding the otitis media. The parents should be encouraged to have an annual health check-up visit with their children to find out the condition at the earlier stage and treat them accordingly.

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