

# Understanding Parents' Experiences and Information Needs on Pediatric Acute Otitis Media: A Qualitative Study

Journal of Patient Experience  
2019, Vol. 6(1) 53-61  
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DOI: 10.1177/2374373518771362  
journals.sagepub.com/home/jpx  


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## Abstract

**Background:** Acute otitis media (AOM) is the most common pediatric bacterial ear infection, affecting up to 75% of children younger than 5 years. Despite the high incidence of AOM in children, the condition presents a number of challenges to parents. The objectives of this study were to describe parents' experiences of taking care of a child with AOM and to identify their information needs to manage their child with AOM. **Methods:** A qualitative, descriptive design was used to gain insight into information needs of parents' of children with AOM. Participants were recruited from a specialized pediatric emergency department in a major Canadian urban center (Edmonton, Alberta). Individual semi structured interviews were conducted with 16 parents. **Results:** Seven major themes were identified and described: (1) frequency of AOM, (2) symptoms of AOM experienced by children and parents, (3) AOM symptom management strategies used by parents, (4) parent's beliefs about AOM, (5) parent's satisfaction with treatment prescribed by physicians, (6) the effect of AOM on family's quality of life, and (7) parent's information needs about AOM. Findings indicate that AOM has considerable negative outcomes for both children and families and that parents would benefit from having more evidence-based resources. **Conclusions:** This study provides important information around parents' experiences and information needs for pediatric AOM. Identifying parents' information needs and developing innovative and communicatively responsive educational approaches for parents are warranted that reflect patient-centered nursing care.

## Keywords

acute otitis media, pediatric, parent's experiences, information need, qualitative

## Introduction

Acute otitis media (AOM) is an infection in the middle ear. Acute otitis media is one of the most common infectious diseases in young children and is associated with considerable medical resources use, health-care visits, and antibiotic prescription (1–4). Studies carried out in developed countries show that 80% of children by their third birthday will have experienced at least 1 episode of AOM (1, 5, 6) and 40% will have 6 or more recurrences by the age of 7 years (5). The prevalence of AOM continues to rise globally, and its associated disease burden is increasing (4, 5). Expenditure on otitis media per year in the United States has been estimated at USD\$ 2.8 billion, with a mean cost per child USD\$350 (7). A systematic review conducted by Monasta et al (5) reported annually 709 million new cases of AOM annually worldwide with related hearing impairment present in 31 per 10 000 population. This review also estimated mortality as high as 21 000 per year due to related

complications such as brain abscesses and meningitis (5). Thus, AOM not only affects quality of life but is also associated with serious and potentially life-threatening complications (5).

The main symptom of AOM is effusion in the middle ear, accompanied by signs of acute illness such as earache, otorrhea (ie, runny and stuffed ear), ear tugging, fever, irritability, anorexia, vomiting, or diarrhea (4, 8). A diagnosis of

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AOM is the most common reason for antibiotic prescribing in childhood, although most cases of AOM resolve spontaneously (9). In fact, results of a Cochrane review indicate that antibiotics are not effective for most children with AOM (10). This review reveals that antibiotics have no early effect on pain, a slight effect on pain in the days following and only a modest effect on children with tympanic perforations, contralateral otitis episodes, and abnormal tympanometry. Despite this existing evidence, antibiotic treatment in children is still frequent (9). Possible reasons for overprescribing antibiotics include physicians not adhering to the updated clinical guidelines on AOM treatment, physician inertia, parental pressure and expectations, parental fears over adverse consequences, insufficient use of appropriate analgesia, or uncertain diagnosis (9, 11). With respect to parental influence, prior studies indicate that a certain proportion of parents actively demand antibiotics due to the impact of AOM on family (absence from work, loss of earning, and extra child care), quality of life, and a decrease in parental resilience needed to cope with the child's health condition (3, 9, 11). Research also indicates that parental sociodemographic factors, such as educational level, age, or having more than 1 child also affect parents' decisions about early antibiotic use for AOM treatment (3, 9).

Anxiety and uncertainty are common at the time of a child's illness. Parents' perception of the illness potentially affects their confidence and ability to provide care for their child (3, 12). Research highlights a mismatch between parental expectations of treatment and clinical recommendations (11, 13), which can have a detrimental impact on parents' health service utilization and acceptance of and adherence to treatment (11, 14). Parents' anxiety about acute childhood illness leads them to find information to decide whether or not to seek help from a health-care professional (12). A wide range of information is available for parents and families, including written material (leaflets, pamphlets, and booklets) or on websites. However, parents do not always know about this material and even if they do, awareness does not seem to make an impact on service use when children are acutely sick at home (15–17). The increase in consultation rates for nonurgent care (18, 19) suggests that more effective information sources are needed. Understanding the parent's perspective may highlight misconceptions, knowledge gaps, or systemic issues contributing to the high burden of this common, acute illness. The objectives of this qualitative study were to describe parents' experiences of taking care of a child with AOM and to identify their information needs to manage their child with AOM.

## Methods

This study utilized qualitative description (20, 21). Ethics approval for this study was obtained from the University of Alberta Health Research Ethics Board, and institutional approval was obtained from Alberta Health Services (AHS) prior to participants' recruitment. Reporting of this study

followed the consolidated criteria for reporting qualitative research checklist (22).

## Sample

Purposive and convenience sampling approaches were used. Participants were recruited from a specialized pediatric emergency department (ED) in a major Canadian urban center. The inclusion criteria for study participation were (1) parent or guardian of a child 1 to 16 years old; (2) parents seeking care in the hospital ED for AOM or have a child who had AOM within approximately the past 6 months; (3) parent or guardian is fluent in English; and (4) parent agrees to be contacted by research team for one-on-one interview. In the ED, clinical team members located eligible participants via the ED information system and notified the recruitment team, so potential participants could be approached after triage. The first author (Sandelowski M) followed up with interested caregivers by telephone to schedule an interview. Iterative data collection and analysis occurred over a 6-month period until data saturation was achieved (23).

## Data Collection

After consenting to participate, parents/guardians completed demographic information forms. The first author conducted 16 semistructured interviews that ranged in length from 8 to 40 minutes. The average duration was 19 minutes. Interviews were conducted in person at a place convenient for participants or by telephone, digitally recorded, and transcribed verbatim. A semistructured interview guide was used to explore parent's experiences with their child's current AOM episode or express their experiences in general (see Supplemental Material: Interview guide).

## Data Analysis

Demographic data were analyzed descriptively. Qualitative data analysis was completed using thematic analysis aided by NVivo software (version 11; QSR International Pty Ltd, Australia) and was reviewed by the research team throughout the analytic process. Thematic analysis is a method for identifying, analyzing, and reporting repeated patterns of meaning (themes) across a data set (24). The steps in data analysis included becoming familiar with the data, generating initial codes, searching for themes, reviewing and refining themes, defining and naming themes, and writing the report (24).

First, transcripts were read in detail several times. Second, the first and second authors independently analyzed the data and discussed emerging themes. Third, preliminary categories across cases were grouped into a beginning organizational framework according to explicit information needs (eg, AOM symptoms, causes, medications, and management). Throughout the analysis process, analytic rigor was enhanced by discussions among all the authors to review

**Table 1.** Demographic Characteristics of Sample of Parents of Children With AOM.<sup>a</sup>

Variable	N	%
Gender		
Female	16	100
Parent's age		
20-30 years	3	18.8
31-40 years	8	50.0
41-50 years	4	25.0
51 years and older	1	6.3
Marital status		
Married	14	87.5
Single	2	12.5
Household income		
Less than \$25 000	1	6.3
\$25 000-\$49 999	2	12.5
\$50 000-\$74 999	2	12.5
\$75 000-\$99 999	4	25.0
\$100 000-\$149 999	1	6.3
\$150 000 and over	5	31.3
I do not want to share this information	1	6.3
Highest level of education		
High school diploma	3	18.8
Some postsecondary	3	18.8
Postsecondary certificate/diploma	3	18.8
Postsecondary degree	3	18.8
Graduate degree	4	25.0
Total number of children in the house		
1 child	5	31.3
2 children	9	56.3
3 children	1	6.3
5 children	1	6.3
Age of child with AOM		
Under 1 year old	1	6.3
1-2 years old	4	25.0
3-5 years old	5	31.3
6-10 years old	3	18.8
11-18 years old	3	18.8
Frequency of AOM		
First episode	3	18.8
Multiple episodes	13	81.3

Abbreviation: AOM, Acute otitis media.

<sup>a</sup>N = 16.

the coding framework, analytic procedures, preliminary findings, and interpretations.

## Results

### Demographics

Sixteen interviews were conducted with parents of children who experienced AOM. The demographic characteristics of participants are presented in Table 1. The mean age of children brought to the ED was 5.74 years. The majority of these children had multiple AOM episodes (n = 13, 81.3%), whereas only 3 (18.8%) children experienced their first episode of AOM. Thematic analysis of the interviews revealed 7 major themes: (1) frequency of AOM, (2) symptoms of

AOM experienced by children and parents, (3) AOM symptom management strategies used by parents, (4) parents' beliefs about AOM, (5) parents' satisfaction with treatment prescribed by physicians, (6) the effect of AOM on family's quality of life, and (7) parents' source of information about AOM. Overall, interviews revealed that children experiencing AOM often present with similar symptoms and that AOM can have significant negative effects on both the child and the family.

### Frequency of AOM

Interviews revealed that it was not uncommon for children with AOM to experience more than 1 episode per year. Parents were often uncertain of the exact number and reported that their child had "numerous episodes" of AOM (participants 2 and 6). Parents with young children, aged 1 to 3 years, reported multiple AOM episodes averaging 1 to 4 per year when compared to children older than 3 years of age. Six of 16 children had 1 to 2 episodes per year, while 3 of 16 children experienced more than 3 episodes per year. The remaining participants (n = 7) could not provide an exact number of episodes per year. One participant said her son had "an earache probably . . . once every year or two" (participant 8), and another said that her daughter "started when she was 3 months old with ear infections" (participant 6). One mother reported that her daughter typically "gets 1 or 2 a year. But this year she's had—that was her third ear infection in the last 2 months" (participant 2). Another said her son had multiple ear infections. "I think this is . . . 4 this year, so far" (participant 15). Three participants experienced their child's first-ever ear infection.

### Acute Otitis Media Symptoms Experienced by Children

Participants with younger children (n = 10) aged 1 to 5 years commonly reported their child becoming irritable when experiencing AOM, often displaying inconsolable crying or screaming. Presence of a cold or flu-like symptoms were common associations with AOM in all age-groups, followed by pain, and fever. Participants described the presence of symptoms as:

[He'd] just get really irritable, he wouldn't look well, and he'd get a fever. (participant 12)

She's crying and screaming and I basically have to rush her to the emergency room. (participant 2)

The last time he was just sick with, you know, cold, flu [then] started having ear pain, crying a lot and had a fever. (participant 9).

Some children (n = 5) experienced severe AOM; their tympanic membrane ruptured and fluid drained from the ear. Once the membrane had ruptured, symptoms of pain seemed to resolve. One parent reported: "he'd wake up at 3 in the morning, screaming, screaming, screaming—and then, feel

very fine because they've [eardrums] ruptured" (participant 1). Another parent reported her child experienced a seizure due to extremely high fever: "... she spiked a fever really quickly—like out of nowhere. And then she just kind of—her body went limp and she started seizing" (participant 10). A seizure occurred in 2 cases due to extremely elevated fever as a result of AOM. These 2 cases reflect a more severe (not typical) sample of children in our study.

### *Acute Otitis Media Symptom Management Strategies Used by Parents*

The majority of participants ( $n = 14$ ) reported using an age-appropriate dose of acetaminophen (Tylenol) or ibuprofen (Advil) or alternating between the 2 to treat pain and fever associated with AOM. Administration of these medications was both a parental decision and recommended by physicians.

So, I'd give her Advil when it started to hurt a little bit. Four hours later or whatever, I'd give her the Tylenol. (participant 2)

I had been told by the doctors to give her Tylenol—infant Tylenol, the children's Tylenol to help bring down the fever. (participant 7)

Parents also reported using alternate symptom management strategies such as an extra pillow to elevate the head, thus reducing pressure to the ears; massaging the ears; covering the ears when going outside, swimming, or bathing; and applying a warm compress to the affected ear (eg, participants 11 and 12). One participant reported trying a natural approach, stating: "we used garlic to ... treat the ear infection. Just like a clove of garlic, you just slice it almost like the shape of an ear bud, so that it just sits on the outside of the ear" (participant 13). If AOM symptoms did not improve with at-home treatment strategies in a day or two, as was typically the case, or the symptoms got worse, participants reported taking their child to their family physician, pediatrician, or local ED ( $n = 16$ ).

### *Parents' Beliefs About AOM*

Parents understood bacteria to be the underlying cause of AOM. Some believed that environmental factors, such as cold weather or water in the ears, was the cause.

I thought maybe the swimming was causing the ear infections. (participant 6)

One participant believed that because she breast-fed her children, they would not get ear infections. Overall, parents were not concerned about the acute effects of otitis media, but 1 parent expressed concern about the potential long-term effects, such as decreased quality of hearing.

Otitis media itself is not—I think it's not worrying, because it will take like 1 week and it will be better. But the consequences

of the otitis media, like, decreasing the quality of hearing, that's the—that's the disturbing thing in otitis media, you know? (participant 16).

Parents' beliefs varied about the best treatments for AOM. Some parents believed that antibiotics were the best form of treatment ( $n = 6$ ), while others ( $n = 4$ ) were strongly opposed to antibiotics and expressed concerns about antibiotic resistance:

I don't think antibiotics are the answer (participant 10).

I do worry about antibiotic overuse, but I feel like most people don't (participant 9).

### *Parental Satisfaction With Treatment Prescribed by Physicians*

The majority of participants ( $n = 12$ ) reported that their child received some form of antibiotic treatment for AOM, oral antibiotics being the most common among all age-groups. Amoxicillin was the oral antibiotic prescribed in most cases, for a duration of 5 to 10 days. Four participants reported antibiotic ear drops being prescribed and 1 reported a prescription for an antibiotic cream. Only 6 (<40%) participants were satisfied with the antibiotic treatment plan:

I'm satisfied because they're giving me what I need at that time. (participant 2)

If they [physicians] say like he needs antibiotics, I usually do what they say (participant 16).

Those who were not satisfied ( $n = 4$ ) believed the antibiotics were not necessary to treat AOM or were not effective. Some expressed concerns with the development of antibiotic resistance:

I think I wasn't entirely satisfied with the antibiotics cause [I] didn't think that they did much (participant 1).

I'd like a long-term solution, rather than a Band-Aid (participant 15).

I just don't want [my child] to become resistant to them [antibiotics] (participant 6).

Majority of parents ( $n = 13$ ) reported that their physician suggested a "watch and wait" treatment plan or would write a prescription and advise parents not to fill it if symptoms improved within a specified time frame: "She [the physician] would have said, "I'll give you the prescription, but if you don't have to fill it, great" (participant 10).

My first doctor was really great, because he would just give a prescription and send me home, and say, "If it gets really, really bad you can fill it" (participant 6).

Parents of children with recurring otitis media ( $n = 2$ ) reported receiving a referral to an ear, nose, and throat (ENT) specialist also known as an otolaryngologist. These children

underwent day surgery to have tubes inserted in their ear canals to drain the fluid more efficiently:

So, by the age of about 7 years old, we had tubes put into her ears. We went through the specialist (participant 6).

Antibiotics [were prescribed], and then we got referred to the ENT for ear tubes (participant 12).

### *Parent Experiences and AOM Effects on Family's Quality of Life*

Overall, participants reported that caring for a child with AOM does impact daily life and can cause emotional strain for parents. Participants with children aged 1 to 5 years ( $n = 10$ ) often reported feeling fear, stress, anxiety, and worry. One participant said "I hurt for him" (participant 15). Another parent mentioned that "It's hard for a parent too" (participant 12). One participant said "it was very distressing to me" (participant 10). Another participant stated: "It's emotionally draining, it's physically draining, and sometimes—you just wish that you could fix it" (participant 9).

Parents caring for younger children (aged 1-3 years) expressed more fear and anxiety when their child experienced their first episode of otitis media ( $n = 3$ ) than parents caring for children older than 3 years of age and having experienced multiple episodes ( $n = 13$ ). As one parent explained, "In the beginning, the first one was the one where you were like—what is that? and then after that... you had learned things" (participant 5). Daily routines were often disrupted as parents typically had to take time away from work to care for their child. In some instances, time away from work caused financial strain for families. Children often had to miss school or child care due to the pain and fever of AOM. "It definitely impacted our lives," one participant said. "Every time we've had to—well, you lose sleep, because he's up all night [and so we] have to cancel work" (participant 1). Another participant recalled that their son had to miss day care for 2 weeks, but the family had to pay anyway, "I had to cancel 2 contracts because of my child's ear infection—because she didn't go to day care for 2 weeks. So, it would cost us the price of day care for 2 weeks" (participant 7).

Some participants reported that they did not always feel confident treating their child's symptoms and often contemplated whether to seek medical attention. One participant stated: "I get nervous. Should I go, should I not go? Am I wasting people's time? Is this a legitimate concern?" (participant 6). Another participant reported feeling guilty for not tending to her child's symptoms earlier: "My husband and I are terrified, because it's like, why is this seeping out of his ear? So, it's been yeah, you know, it's scary. You feel awful. It's like, why didn't I pick that up sooner?" (participant 1).

### *Parent's Source of Information About AOM*

Participants ( $n = 9$ ) reported that they preferred to take their child to see their own pediatrician to seek medical advice or

the local ED. In the province of Alberta, AHS Health Link provides a 24/7 telephone nurse advice and general health information service. Participants did report phoning AHS Health Link when they were uncertain if their child needed to be seen by a physician ( $n = 6$ ). More than 50% of parents ( $n = 9$ ) preferred to receive information from health-care providers and believed that health-care professionals knew best: "I trust my pediatrician only for any health-related information, she's phenomenal" (participant 12). However, only 2 of 16 parents reported that they received an adequate explanation about AOM and its management.

In addition to seeking information from health-care professionals, parents would use Internet search engines, (eg, Google) to look up information about childhood illness. Parents often turned to Internet sources to find more information about the signs and symptoms of AOM and its treatment, specifically home management. Few participants ( $n = 5$ ) reported seeking information about AOM and its management from friends or relatives whose children also had AOM:

I don't use a—typically don't use a specific source. But Google is often—if I'm gonna punch something in, it's gonna be with Google (participant 10).

I usually just ask my mom. Or go to the doctor. Our doctor here is pretty good. (participant 3).

Parents in this study identified and described the following information needs about pediatric AOM: (1) how AOM is caused; (2) signs and symptoms; (3) what to expect from a normal course of AOM; (4) how to alleviate AOM symptoms; (5) information about antibiotic treatment; and (6) when to go to ED. Parents expressed many questions, as they reflected on and came to understand their information needs for this illness:

When first time my child had ear infection, there are so many questions in my mind, why this happening? What should I do to make my child feel better? Do I go to ED or not right? There was so many things, like confusing things (participant 1).

Being a young mom, I don't know what's going on and don't know what to do (participant 4).

## **Discussion**

Acute otitis media is a common occurrence in families with young children and a substantial cause of parent concern and disruption to daily activities, health services use, and indirect costs. Our study findings provide a comprehensive perspective on parents' experiences and information needs about their child's AOM, the effects that AOM has on children and families as well as insight into what kind of information parents need about AOM and its management. Our findings also provide critical insight for researchers seeking to explore the experiences, issues, and needs of parents and families regarding AOM and its management. We have

organized our discussion in relation to our key study findings: (1) children's presenting symptoms and long-term effects of AOM on children, (2) parents' beliefs and information needs about AOM and its management, and (3) emotional strain and impact of AOM on child and parent's quality of life.

### *Children's Presenting Symptoms and Long-Term Effects of AOM on Children*

Participants shared similar experiences and described similar presenting symptoms in their children. For instance, parents commonly reported that their child became irritable, experienced pain, fever, and excessive crying in addition to other flu-like symptoms. These experiences are consistent with what other studies have reported about general symptoms of AOM in children (25, 26). A sudden appearance and drainage of fluid from the middle ear with a rapid onset of signs and symptoms of infection were also reported by parents (26).

The majority of participants did not mention any concern about potential long-term effects of AOM. Parents were typically more concerned about the immediate symptoms of pain and discomfort. Only 1 parent voiced concern about the potential long-term effects of AOM on hearing. This is consistent with other studies that evaluated parents' concerns about long-term effect of AOM on hearing and communication (9, 27, 28).

### *Parents' Beliefs and Information Needs About AOM and Its Management*

Our findings provide evidence that AOM places a significant burden on children and families (26, 29, 30). Parent beliefs about AOM identified in this study appear to be related to environmental and social factors. Participants reported that they believed cold or upper respiratory infection, day-care attendance, formula feeding, swimming, and teething predisposed children to ear infections. Notably, previous studies identified similar, yet inaccurate, results (3, 25, 26).

Our findings also identified that parents preferred to receive information from their own pediatrician when they had a sick child, followed by other trusted health-care professionals, like their family physician or nurses. This is consistent with findings from Kautz-Freimuth et al (9), who determined that the pediatrician or general physician was the most important contact partner for parents seeking medical advice regarding AOM treatment. Similarly, Russell et al (27) also found that parents preferred to see their own general practitioner whom they trusted more. Although parents in this study often turned to and preferred health-care professionals as a primary source of information for their child's AOM, few reported receiving a thorough explanation about the nature of the illness or risks and benefits of different treatment options. Parents' information deficits were evident in their comments (eg, What causes AOM? What can I do to

help my child get better? When do I go to ED?). Pshetizky et al (30), reported that a brief explanation to parents about the disease and possibility of self-cure without antibiotics, although time-consuming, could alleviate parental anxiety and reduce antibiotic overuse. According to participants in this study, information about how to treat a child who has AOM is neither readily accessible nor consistent. It is critical to develop appropriate, accessible, and consistent information to share with parents.

The majority of parents reported oral antibiotics to be the initial form of treatment. This assumption is also supported by previous studies reporting that a high proportion of parents believe antibiotics are necessary when treating AOM (3, 9, 27, 28). Despite current practice guidelines, stating that mild AOM symptoms will often resolve spontaneously without antibiotics (4, 10, 31, 32), parents reported that it was not common practice for their physician to suggest waiting before starting an antibiotic. In majority of cases, an antibiotic (typically oral amoxicillin) was prescribed. According to American Academy of Pediatrics clinical practice guidelines, amoxicillin is the drug of choice as an initial treatment (32). There is no evidence to support using topical antibiotics to treat AOM; however, 1 parent did report being prescribed the topical antibiotic, fusidic acid. Almost 50% of parents who participated in the study were satisfied with receiving antibiotics and believed their physician's recommendation was best, which is consistent with the evidence that parents prefer and trust their physicians (3, 9, 27).

In our study, participants who reported a lack of satisfaction with antibiotics usually had a child with reoccurring ear infections and believed that antibiotics were not effective. In fact, some participants discussed the possibility of their child developing "antibiotic resistance." This finding is consistent with previous studies exploring parents' perspectives on antibiotics for AOM and reported that the most common parental concerns related to antibiotic prescriptions were antibiotic resistance and adverse effects (9, 28, 33). Parents feared antibiotic resistance; indeed, research has shown that antibiotic resistance is a potential side effect of recurrent antibiotic use (34). However, the children of parents in this study preferred to be prescribed and use antibiotics, despite their negative perceptions and the evidence that mild AOM symptoms will typically resolve on their own. The majority of parents in this study reported administering oral analgesics or antipyretics (eg, Tylenol or Advil) to combat pain and fever. However, parents did not consider these medications to be sufficient treatment, and they often opted to supplement with antibiotics (3, 9, 31). Parents requesting or making decisions about naturopathic approaches were rare in this study, as well as in previous studies (3, 9, 27).

### *Emotional Strain and Impact of AOM on Child and Parents' Quality of Life*

Our findings suggested that an AOM diagnosis often meant great emotional strain for parents (stress, fear, and anxiety)

and a disruption of daily routines, including a lack of sleep and missed work or school. These findings are comparable to previous studies where parents of children with AOM had to take time off from paid work (27, 29, 35). In this study, parents with younger children or those experiencing AOM for the first time described more worry and less confidence in managing their child compared to those who had experienced multiple episodes of AOM or who had older children. Parents described that this was due to the child's distress and inability to communicate the presence and severity of symptoms. These findings are similar to Russell et al (29) who found parents with young children with AOM are more concerned and wanted to understand the cause of their children's distress so they will be able to help their children to relieve their symptoms as soon as possible. Through discussion with parents, it became clear that AOM can be as distressing for parents and families as for the child.

Acute otitis media also negatively impacts the quality of life (QoL) of parents and children. Previous studies have also reported that the negative impact of AOM on a child's QoL is greater with an increasing number of AOM episodes and in children with more severe disease (1, 2, 28, 35). In our study, the aspects of parental QoL most affected by childhood AOM were lack of sleep, worry, and having to alter their daily schedule. This is similar to results from Dube et al (2) who found sleep to be most affected, followed by concern, changes to daily activities, emotional distress, and canceling family activities. Boruk et al (36) found 3 aspects of caregiver QoL to be most affected, namely, lack of sleep, feeling nervous/ agitated/irritable, and feeling helpless/frustrated.

### Limitations

We conducted interviews at a single point in time and only with parents who were seeking care in the ED. We relied on parent self-report of their experience and information needs; other forms of data collection (eg, observation) may have enhanced our understanding of information needs and parent experience. Further, recall bias is a limitation as we relied on self-report data. All the study participants were mothers; hence, fathers are not represented in this study. This is due to the reality that in our recruitment site, mothers most often brought their children to appointments with health-care practitioners or for emergency visits. It is important to note that because we sampled exclusively from the ED, the majority of participants had children with a severe case of AOM (eg, child with ruptured eustachian tube [n = 3], high-grade fever [n = 7], and seizure [n = 1]). Also, the majority of participants (n = 13) reported that their children experienced multiple AOM episodes. Despite extensive effort to ensure variation in parent demographics, our participants consistently possessed high levels of education. As a result, our findings cannot be extrapolated to all parents, including those who may have more pronounced information needs and information deficits.

### Future Directions and Recommendations

The findings of this study both reinforce and add to the existing literature about parents' experiences and information needs when caring for a child with AOM. The results indicate that AOM has considerable negative impacts on both children and families and that parents would benefit from having more evidence-based resources to meet their information needs about the nature and treatment options of AOM. The findings from this study will inform the development of digital knowledge translation tools (ie, whiteboard and infographics) for parents of children with AOM. Parental experiences from this study will be used to create the context for the digital knowledge translation tools, specific examples of care experiences will be included in the tools so that they resonate with parent experiences and needs.

Identifying parents' information needs and developing innovative and communicatively responsive educational approaches for parents are warranted that reflect patient-centered nursing care. Providing timely, appropriate, and engaging research-based information to parents/families about AOM may enhance their ability to communicate with health providers about their questions, concerns, and expectations for care and may help them to participate in health-care decision-making for their children. As clinicians, it is very important for us to understand parents/caregivers' experiences related to their child's acute illness. Involving parents in child health care decision-making and sharing research evidence about child health-care management with families will help alleviate parent's feelings of fear and uncertainty. Future research should examine the best opportunities (ie, timing, location, and mode of delivery) to provide caregivers with evidence-based information on AOM.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This project was supported by the Women's and Children's Health Research Institute (WCHRI) Innovation grant (grant number RES0031220) and Translating Emergency Knowledge for Kids (TREKK) (grant number SFR1164). S.M. is postdoctoral fellow, received fellowship award from Faculty of Nursing, University of Alberta. L.H. is supported by a CIHR New Investigator Salary Award. S.S. is a Canada Research Chair (Tier II) for Knowledge Translation in Child Health and is also supported by an Alberta Innovates Health Solutions Population Health Investigator Award.

### Supplemental Material

Supplemental material for this article is available online.

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**Alyson Campbell** is a PhD student (Faculty of Nursing) at the University of Alberta. Alyson research interest span both child health and knowledge translation. Specifically, her doctoral work is in the area of pediatric concussion. Her research will involve a

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**Shannon Scott** is a professor in the Faculty of Nursing at the University of Alberta. She currently holds a Tier 2 Canada Research Chair for knowledge translation in child health and an Alberta Heritage Foundation for Medical Research (AHFMR) Population Health Investigator award. Shannon research program, Translating Evidence in Child Health to enhance Outcomes (or ECHO), aims to improve the health outcomes of children in Alberta and Canada through application of the best research evidence, as well as exploring factors that shape research implementation.