

# Evidence-based research: article evaluations and applications essay

[Law](#), [Evidence](#)



**ASSIGN  
BUSTER**

\n[[toc title="Table of Contents"](#)]\n

\n \t

1. [Evidence-based Research Article Evaluations and Applications](#) \n \t
2. [Appropriateness of Sources of Evidence](#) \n \t
3. [Clinical Practice Guideline Review](#) \n \t
4. [Applications of Findings](#) \n \t
5. [Ethical Issues in Research and Clinical Practice](#) \n \t
6. [Pediatric-specific Ethical Issues](#) \n \t
7. [References](#) \n

\n[/toc]\n \n

## **Evidence-based Research Article Evaluations and Applications**

### Types of Sources of Evidence in Nursing Practice

Although nursing practice must implement evidence-based practices (EBP), not all sources of evidence can be considered equally valuable. In nursing research, sources can be filtered, unfiltered, or general information sources. The article by Kelley, Friedman & Johnson (2007) is an example of a general information source because it does not focus on a specific problem or intervention. Instead, the article provides a comprehensive overview of various disorders in otorhinolaryngology (e. g. otitis externa, acute otitis media [AOM], mastoiditis, rhinosinusitis, etc.) and reviews their etiology, symptoms, predisposing factors, treatment strategies, and prognoses.

The articles by Block (1997), McCracken (1998), and the American Academy of Pediatrics and American Academy of Family Physicians (AAP/AAFP, 2004),

are example of filtered sources of information. Filtered sources review multiple unfiltered sources of information so that they can assess their validity and present an overview of the findings. Filtered sources can offer explicit treatment recommendations to practitioners (McCracken, 1998; AAP/AAFP, 2004) or summarize the available evidence without providing clear practical guidelines (Block, 1997).

Interviews with patients who bring their children for otitis media treatment are similar to unfiltered information sources. Data obtained in both primary research and interviews is relevant only to a sample of the population, so the generalization of the data might be limited. Information collected from interviews is unorganized data, and the healthcare practitioner can assign meaning to the statements collected from patients to identify their common needs, concerns, and expectations from treatment. The different types of sources of evidence are presented in Table 1.

### **Appropriateness of Sources of Evidence**

Evidence-based guidelines are appropriate sources discussing changes in clinical practice because they provide specific guidelines and alternatives that are based on evidence obtained from multiple primary evidence sources. For example, the paper by McCracken (1998) focuses on the treatment of AOM with antimicrobial agents and recommends amoxicillin as the preferred treatment for AOM while amoxicillin-clavulanate, cefprozil, ceftriaxone, and cefuroxime axetil. That recommendation is synthesized by comparing the findings from different primary information sources, so the recommendation is reliable and can be used to change clinical practices.

The evidence-based guidelines by AAP/AAFP (2004) and Kelley et al. (2007) also recommend amoxicillin as the first line of therapy for AOM, but those guidelines are broad and offer various recommendations to the practitioner. The guidelines by AAP/AAFP (2004) justify the recommended systematic approaches to the diagnosis, treatment, and follow-up processes for AOM with findings from various randomized controlled trials. Even though the source of evidence by Kelley et al. (2007) contains general information, the comprehensive algorithm for treating AOM and the discussion of the three lines of antimicrobial therapy applicable in AOM make it a reliable source for determining EBP guidelines.

Interviews with parents are not empirical evidence that can be used to alter clinical treatment strategies, but they need to be reviewed to understand the psychological burden of AOM on families and identify potential predisposing factors for AOM in children. For example, exposure to tobacco smoke, bottle feeding, and genetic factors have been identified as risk factors for AOM (Kelley et al., 2007). With that information, it would be possible to engage in patient education or offer psychosocial support if necessary.

Some sources of evidence are inappropriate for clinical practice and should not be used to determine EBP protocols in the workplace. The evidence summary by Block (1997) reviews the antimicrobial agents available for treating antibiotic-resistant *Streptococcus pneumoniae*. The author argues that the rising prevalence of those pathogens warrants increasing the standard dose of amoxicillin. However, most of the data presented in the review is obtained from *in vitro* studies and preliminary reports. Therefore, researchers can use that article to guide the course of their investigations of

the topic, but there is not enough evidence from clinical trials to support the safety and effectiveness of increasing amoxicillin doses to treat AOM.

## **Clinical Practice Guideline Review**

### Watchful Waiting

The “ Clinical Practice Guideline” by AAP/AAFP (2004) recommends observation in children without signs of AOM complications as one of the possible treatment strategies. However, several risks were identified based on age and illness severity, so the watchful waiting strategy is not recommended for children below 2 years of age. For children under 6 months of age, antibacterial therapy should be implemented immediately because of the possible complications. Watchful waiting can be used for children between 6 months and 2 years of age only if (1) the illness is non-severe and if (2) the diagnosis is uncertain. Children above the age of 2 with non-severe illness presentation can be placed under observation even when the diagnosis is certain.

The recommendations for watchful waiting are based on the findings in various randomized-controlled trials. According to AAP/AAFP (2004), the risk for clinical failure is significantly lower in children over the age of 2 when compared to younger children. There is also no concern regarding delayed antibacterial treatment. A randomized controlled trial conducted in the UK showed that 76% of children in the delayed-treatment group never required medication as the illness was spontaneously resolved, and the only difference between them and the antimicrobial treatment group was that the antimicrobial treatment group’s illness was resolved approximately 1 day

faster (AAP/AAFP, 2004). However, it is important to mention that studies on children with severe symptoms were unable to repeat satisfactory results. Therefore, it is possible to conclude that watchful waiting is an appropriate strategy for resolving AOM as long as the patient does not show severe signs of illness.

## **Applications of Findings**

In a leadership position, I would consider the implications of watchful waiting in clinical practice, but it is important to evaluate the risk-to-benefit ratio when implementing watchful waiting into routine clinical practice. According to the results from randomized controlled trials, the benefits outweigh the risks, but the high failure rate in children below the age of 2 suggests that watchful waiting has limited benefits in that population (AAP/AAFP, 2004). Therefore, I would implement watchful waiting only for children older than 2 years of age.

I would also introduce several restrictions for implementing watchful waiting to avoid risking complications. Even though the risk for acute mastoiditis is not considered significantly higher in patients under observation when compared to the patients receiving antibacterial agents (AAP/AAFP, 2004), I would implement watchful waiting only in patients without severe symptoms and an uncertain diagnosis. Once a certain diagnosis is reached, I would prescribe amoxicillin treatment or other agents to patients allergic to amoxicillin (e. g. cefpodoxime, clarithromycin, etc.).

The reason for engaging in pharmaceutical treatment once the diagnosis is certain is the high prevalence of *S pneumoniae* in AOM (up to 50% of

children), in which case the spontaneous cure is achieved only in 16% of children (AAP/AAFP, 2004; Kelley et al., 2007). Therefore, antimicrobial agents can facilitate the treatment of AOM when the practitioner is certain about the diagnosis, but watchful waiting is useful in cases when the diagnosis is uncertain because it reduces overtreatment of AOM when it is confused with chronic otitis media with effusion (OME).

In order to facilitate the change, I would use the rational-empirical strategy to deal with the potential resistance to change among the staff because that approach assumes human beings will more likely accept changes if provided with factual information warranting the change. By presenting the data on the efficacy of watchful observation, it would be possible to conclude that using watchful waiting can reduce treatment costs for families and avoid the use of unnecessary interventions. To maintain an ethical approach to care, the staff nurses would be required to provide full disclosure to parents on the potential benefits and risks of watchful waiting. Although watchful waiting can avoid the costs of treatment with pharmaceutical agent that are apparently not necessary in all cases, it is important to consider that parental anxiety is a significant factor affecting treatment choice and should be included in the planning process.

## **Ethical Issues in Research and Clinical Practice**

Ethical research must satisfy various criteria, such as receiving informed consent from the participants, giving the participants full disclosure about the benefits and risks of procedures, protecting the participants from harm, protecting their personal information, and ensuring confidentiality during and

after the intervention. All of those points need to be addressed in order for the research to be approved by an ethics committee and ensure the safety of the participants and their personal data.

In clinical practice, introducing changes in treatment procedures needs to be thoroughly researched and planned because making uninformed decisions can result in various adverse events. Mistakes caused by untested practices directly affect the patients' well-being and quality of life. Most importantly, evidence-based knowledge should not substitute ethical approaches to care. Benner, Sutphen, Leonard-Kahn, and Day (2008) argue that too much information-based critical thinking can result in self-doubt and cynicism that negatively affect treatment outcomes. In order to prevent those situations, Benner et al. (2008) recommend integrating multiple ways of thinking in nursing practice.

## **Pediatric-specific Ethical Issues**

Vulnerable populations are defined as groups that are at a disadvantage because of greater risks for poor health outcomes, lack of access to healthcare providers, multiple chronic illnesses, and poor socio-economic conditions ("Vulnerable populations," 2006). Uninsured children from low-income homes are an example of a vulnerable population in pediatric settings. In the context of AOM treatment, they are not a vulnerable population because the standard pharmaceutical treatment is conducted no more than 10 days while some researchers reported symptom withdrawal within 3 or 4 days (AAP/AAFP, 2004). However, recurring instances of AOM and respiratory tract infections might be a significant burden to vulnerable



populations, so more emphasis needs to be placed on meeting their needs in clinical practice.

In clinical trials, several ethical issues are brought up because EBP in pediatric care can be improved only by studies on children. The researchers must therefore obtain informed consent from the parents, who must understand that the intervention has not been tested before and that possible risks are associated with the intervention. Parental anxiety is a significant factor that can affect their choice, and the researchers must respect their emotional state and allow them to withdraw from the research at any time. Confidentiality and data protection are not exclusive to any population group in healthcare, so the information collected from children should never be used in a way that it can be used to identify the individual or breach the confidential relationship with the patient.

In clinical practice, the ethical issues are much less significant than in research because changes in clinical practice that are based on evidence have already been tested in clinical trials. Therefore, healthcare providers can understand the benefits and risks of certain interventions more accurately than the researchers who investigated them and can communicate them to patients effectively. As long as full disclosure and informed consent are properly implemented in clinical practice, healthcare providers support an ethics-based work environment that acknowledges and addresses the needs of the patients.

## References

- American Academy of Pediatrics and American Academy of Family Physicians. (2004). Clinical practice guideline: Diagnosis and management of acute otitis media. *Pediatrics*, 113(5), 1451-1465. Retrieved March 24, 2014, from <http://pediatrics.aappublications.org/content/113/5/1451>. long
- Benner, P., Sutphen, M., Leonard-Kahn, V., & Day, L. (2008). Formation and everyday ethical comporment. *American Journal of Critical Care*, 17(5), 473-476.
- Block, S. L. (1997). Causative pathogens, antibiotic resistance and therapeutic considerations in acute otitis media. *Pediatric Infectious Disease Journal*, 16(4), 449-456.
- Kelley, P. E., Friedman, N., Johnson, C. (2007). Ear, nose, and throat. In W. W. Hay, M. J. Levin, J. M. Sondheimer, & R. R. Deterding (Eds.), *Current pediatric diagnosis and treatment* (18th ed., pp. 459-492). New York: Lange Medical Books/McGraw-Hill.
- McCracken, G. H. (1998). Treatment of acute otitis media in an era of increasing microbial resistance. *Pediatric Infectious Disease Journal*, 17, 576-579.
- Vulnerable populations: Who are they? (2006). *American Journal of Managed Care*, 12(13S), n. pag. Retrieved March 24, 2014, from <http://www.ajmc.com/publications/supplement/2006/2006-11-vol12-n13suppl/Nov06-2390ps348-s352>