



E-ISSN: 2664-1305
P-ISSN: 2664-1291
www.paediatricnursing.net
IJRPN 2021; 3(1): 79-82
Received: 05-01-2021
Accepted: 10-03-2021

Manpreet Kaur
Assistant Professor,
Department of Pediatric
Nursing, National College of
Nursing, Hisar, Haryana,
India

Assess the effectiveness of planned teaching programme on knowledge regarding prevention of pneumococcal infections among the mothers of under five children in selected Anganwadi of Ratia, Haryana

Manpreet Kaur

Abstract

Pneumococcal infection is one of the leading disease in under five children all over the world. Mothers are an integral part of the care given to the child to control the reoccurrence of pneumococcal infection. Educating and training mothers can increase compliance with discharge plans and prevent re-admissions. Planned teaching program is an effective strategy giving information to the mothers of under five children. The study was conducted to find out the effectiveness of planned teaching programme on knowledge regarding prevention of pneumococcal infections among the mothers of under five children.

Keywords: pneumococcal infections, planned teaching programme

Introduction

Children are important because they are the future leaders. Some may become nation leaders while others may become leaders in the sense that they will be then ones who will nurture the next generation.

Despite many advances in the health that have occurred during the years, the end of the century still sees many places in the world with high child mortality rates. This made by worse by increasing inequity, such that there are still many communities in the world in which children die before their second birthday. Pneumococcal infections are the leading cause of childhood mortality and morbidity globally and it causes an estimated 2 million death among under five children.

WHO estimated that 10.6 million children less than 5 years of age suffer from pneumococcal infections. The survey showed Streptococcus Pneumonia was found to account for about 25-30% of the meningitis in less than 5 years of age. Streptococcus pneumoniae are bacteria frequently found in the upper respiratory tract of healthy children and adults. These bacteria, however, can also cause a range of infections from relatively mild ear infections to fatal pneumonia, meningitis, and sepsis. Serious pneumococcal infections can occur throughout life, but children under 2 years old and the elderly are at highest risk.

Serious pneumococcal infections are a major global health problem. The World Health Organization (WHO) estimates that more than 1.6 million people including more than 800,000 children under 5 years old die every year from pneumococcal infections. Nearly all these deaths occur in the world's poorest countries. Pneumococcal meningitis is the most severe form of pneumococcal disease and one of the most fatal childhood illnesses. In developing countries, it kills or disables 40 to 70 percent of children who get it. Many children with pneumococcal pneumonia or blood stream infections will be ill enough to be hospitalized. About 1% of children with blood stream infections or pneumonia with a blood stream infection will die of their illness.

The primary causes of death from pneumococcus are pneumonia, in which fluid fills the lungs, hindering oxygen from reaching the bloodstream meningitis, an infection of the fluid surrounding the spinal cord and brain and sepsis, an overwhelming infection of the bloodstream by toxin-producing bacteria. Estimated pneumococcal deaths and cases 735,000 global pneumococcal deaths, 2000 and 14.5 million global pneumococcal cases, 2000 Pneumococcal disease is defined as infections that are caused by the bacterium Streptococcus pneumoniae, also known as pneumococcus. The most common types of pneumococcal infections include middle ear infections, sinus infections, lung infections

Corresponding Author:
Manpreet Kaur
Assistant Professor,
Department of Pediatric
Nursing, National College of
Nursing, Hisar, Haryana,
India

(pneumonia), blood stream infections (bacteremia), and meningitis.⁶ Some of these infections are considered to be "invasive." Invasive disease means that germs invade parts of the body that are normally free from germs. For example, pneumococcal bacteria can invade the bloodstream, causing bacteremia, and or the tissues and fluids surrounding the brain and spinal cord, causing meningitis. When this happens, disease is usually very severe, causing hospitalization or even death.

Young children are much more likely than older children and young adults to get pneumococcal disease. Children younger than 2 years of age, and children who have certain illnesses (for example, sickle cell disease, HIV infection, and chronic heart or lung conditions) are at higher risk than other children to get pneumococcal disease. Children with cochlear implants or cerebrospinal (CSF) fluid leaks are more likely to get pneumococcal meningitis. In addition, pneumococcal disease is more common among children of certain racial or ethnic groups, such as Alaska Natives, American Indians living in certain communities, and African-Americans, than among other groups.

Pneumococcal infections are the leading cause of childhood mortality and morbidity globally and it causes an estimated 2 million death among under five children. The survey showed Streptococcus Pneumonia was found to account for about 25-30% of the meningitis in less than 5 years of age.¹² The pneumococcal infections like pneumonia, bacteremia, and meningitis are more life threatening conditions. A Streptococcal pneumonia, that causes pneumonia which can easily spread in community and cause Invasive Pneumococcal Diseases (IPD) in children and older adults. Pneumonia is the leading killer of children in India. A recent UNICEF publication estimated that 410,000 children less than five year age group die of pneumonia in India. Initiative of Vaccine Research during 2009 revealed that in South India, 50% of infants have been colonized by S.pneumoniae by 2 months of age and 80% are carriers by the age of 6 months. Among adults Streptococcus Pneumonia accounts at least 30% of all cases of community acquired Pneumonia admitted to the hospital with case fatality rate of 11-44%.

According to UNICEF 2012, India has the highest pneumococcal deaths among children. About 69% of children with suspected pneumonia are taken to a health facility and about 13% are treated with antibiotics. Pneumococcal disease causes more deaths than any other vaccine preventable diseases, including Hepatitis B.

The pneumococcal infections like pneumonia, bacteremia, and meningitis are more life threatening conditions. A Streptococcal pneumonia, that causes pneumonia which can easily spread in community and cause Invasive Pneumococcal Diseases (IPD) in children and older adults. Major clinical syndromes caused by pneumococci include pneumonia (lungs), bacteremia (blood) & meningitis (brain). Pneumococci are transmitted by direct contact with respiratory secretion from patients and healthy carriers. Streptococcus pneumonia is an asymptomatic colonizer of the upper respiratory tract in humans. However, these apparently harmless bacteria have also a high virulence potential and are known as the etiologic agent of respiratory and life-threatening invasive diseases. Dissemination of pneumococci from the nasopharynx into the lungs or bloodstream leads to community-acquired pneumonia, septicemia and meningitis.

Health education on prevention of pneumococcal infection helps the mothers to bridge the gap of knowledge, practices towards pneumococcal infections and in turn reduces the under five mortality and morbidity. The nurses and allied health care professionals plays an important role to bring global awareness to prevent pneumococcal infections among mothers of under five by assessing their existing practices towards prevention of pneumococcal infections. Having many benefits attached to prevention of pneumococcal infections and to prevent many associated complications, the investigator observed that there is necessity to evaluate knowledge of mothers regarding prevention of pneumococcal infections staying in selected anganwadis of Ratia city. So a PTP on pneumococcal infections equip the mothers with necessary knowledge and skills in prevention of pneumococcal infections.

Statement of Problem

"Assess the effectiveness of planned teaching programme on knowledge regarding prevention of pneumococcal infections among the mothers of under five children in selected anganwadi of Ratia, Haryana."

Objectives

The objectives of study include the-

- ❖ Assess the knowledge regarding prevention of pneumococcal infections among mothers of under five children.
- ❖ Evaluate the effectiveness of planned teaching programme on prevention of pneumococcal infections.
- ❖ The association between post test knowledge score with selected demographic variables.

Operational Definitions

Effectiveness: It refers to determine the extent to which the information in the planned teaching programme has achieved the desired effect as measured by gain in knowledge scores.

Planned Teaching Programme: It refers to written and verbal material used for teaching and it is designed to provide information/knowledge regarding prevention of pneumococcal infections among under five children.

Knowledge: It refers to the information known or gained by response of mothers.

Pneumococcal Infections: It refers to respiratory tract infections like common bacteremia, meningitis, pneumonia

Mothers of Under Five Children: The study is limited to mothers of under five children attending a selected andanwadi of Ratia.

Review of literature

A retrospective surveillance study was conducted at King Abdul-Aziz Medical City, Riyadh, Saudi Arabia to describe the epidemiology of IPD in the population of children aged < 5 years served by the National Guard Health Affairs hospitals in central and western regions of Saudi Arabia. Only microbiologically confirmed IPD cases (meningitis or bacteremia) were included in the analysis. A total of 82 IPD cases, 19 (23.2%) meningitis and 63 (76.8%) bacteremia, were diagnosed during the five-year period. Of these, 12.2%

(10/82) died, with a case-fatality slightly but insignificantly higher in cases of meningitis (15.8%) than bacteremia (11.1%). The average annual IPD incidence was 17.4 per 100,000 (4.0 for meningitis and 13.4 for bacteremia). In the prevaccination era (1999-2003) in Saudi Arabia, IPD incidence was comparable to the prevaccination incidence rates from many industrialized countries, with children aged < 1 year suffering the highest IPD risk among those aged < 5 years.

A case control study was conducted at Atlanta to evaluate risk factors for invasive pneumococcal disease (IPD) among children who were aged 3 to 59 months in the era of pneumococcal conjugate vaccine (PCV7). IPD cases were identified through routine surveillance during 2001-2004. We matched a median of 3 control subjects to each case patient by age and zip code. We enrolled 782 case patients (45% vaccine-type IPD) and 2512 matched control subjects. Among children who received any PCV7, children were at increased risk for vaccine-type IPD when they had underlying illnesses, were male, or had no health care coverage. Vaccination with PCV7 has reduced the risk for vaccine type IPD that is associated with race and group child care attendance. Because these factors are still associated with non-vaccine-type IPD risk, additional reductions in disparities should be expected with new, higher valiancy conjugate vaccines.

A pre-experimental study was done on effectiveness of Structured Teaching on Home care management of knowledge and prevention of pneumococcal infection in the outpatient department of Apollo Hospital and Voluntary Health Service Hospital. Using purposive sampling and considering sample size of 50 patients. The study concluded that a major responsibility of the professional nurses is helping patients gain self-management skills for any health problem through teaching and counseling Research confirmed that structured teaching programme has a positive effect on patient outcomes.

Methodology

An evaluatory approach with one group pre test- post test design was used for the study. The sample consisted of 100 mothers selected by purposive sampling method. Data were collected by administering a structured knowledge questionnaire prepared by the investigator. After collection of the baseline data planned teaching programme (PTP) was given to the subjects and on the seventh day post-test was conducted using the same questionnaire used for collecting descriptive and inferential statistics ('t' test).

Results

The mean post- test knowledge score (mean =23.29) was higher than the mean pre -test knowledge scores (mean=9.92). The 't' value computed ('t'=44.41; p<00.5) showed a significant difference suggesting that the PTP was effective in increasing the knowledge of mothers of under five children. There was no association between the pre-test knowledge scores and selected variables like age, educational status, occupation, income, religion, type of family, diet and source of information of knowledge and prevention of pneumococcal infection.

Interpretation

Finding of this study showed that the knowledge of the mothers of under five children was not satisfactory before

the introduction of planned teaching programme. The planned teaching programme helped them to learn more about the etiology, sign & symptoms, diagnostic evaluation, treatment (medical management & nursing management), prevention at home. Hence the planned teaching programme an effective teaching strategy for providing information and to improve the knowledge of mothers of under- five children.

Conclusion

Education the mothers and making them involved in care for prevention and treatment the pneumococcal infection in children's could help in compliance with medication. This may also be helpful in preventing the pneumococcal infection.

References

1. Dorothy RS, Barbara A. Reading text book of pediatric nursing as under publication, 1988
2. K Park text book of preventive and social medicine 19th edition banarsidsbh publication, 2007
3. Ryan KJ, Ray CG. Sherris Medical Microbiology (4th ed.), 2004, ISBN 0-8385-8529-9. Available from; http://en.wikipedia.org/wiki/Pneumococcal_infection
4. Walter ND, Taylor TH, Shay DK *et al.* "Influenza Circulation and the Burden of Invasive Pneumococcal Pneumonia during a Non-pandemic Period in the United State. (online), 2010
5. Pericone, Christopher D, Overweg Karin, Hermans. "Inhibitory and Bactericidal Effects of Hydrogen Peroxide Production by Streptococcus pneumoniae on Other Inhabitants of the Upper Respiratory Tract". (Online) 2000;68(7):3990-3997. Available from; <http://www.nhs.uk/conditions/Pneumococcal->
6. Regev-Yochay G, Trzcinski K. "Interference between Streptococcus pneumoniae and Staphylococcus aureus: In vitro hydrogen peroxide-mediated killing by Streptococcus pneumoniae". (Online) J Bacterial. 2006;188(13):4996-5001. Available from <http://www.ncbi.nlm.nih.gov/pub/148298>
7. Barocchi M, Ries J, Zogaj X, Hemsley C. "A pneumococcal pilus influences virulence and host inflammatory responses". (Online) Proc Natl Acad Sci USA cited 2006;103(8):2857-2862. Available from ; <http://www.ncbi.nlm.nih.gov/pubmed/16481624>
8. Werno AM, Murdoch DR. "Medical microbiology: laboratory diagnosis of invasive pneumococcal disease". (online) Clin. Infect. Dis. 2008;46(6):926-32. Available from; <http://www.ykhealthguide.org/downloads/pneumococcal.pdf/1826075>
9. Gottberg A, Klugman KP *et al.*, "Emergence of levofloxacin-non-susceptible Streptococcus pneumoniae and treatment for multidrug-resistant tuberculosis in children in South Africa: a cohort observational surveillance study". (online) The Lancet cited 2008;371(9618):p1108. Available from; <http://emedicine.medscape.com/article/225811overview>
10. Peterson LR. "Penicillins for treatment of pneumococcal pneumonia: does in vitro resistance really matter?". (online). Clin Infect Dis cited 2006;42(2):224-33.

Available from;

<http://www.chp.gov.hk/en/content/9/24/10584.html>.

11. Tleyjeh IM, Tlaygeh HM. "The impact of penicillin resistance on short-term mortality in hospitalized adults with pneumococcal pneumonia: a systematic review and metaanalysis".(online) Clin Infect Dis cited 2006;42(6):788-97.
Available from;
<http://www.who.int/drugresistance/technicalguidance/en/resistantinfection>.
12. WHO. "Acute Respiratory Infections Update September 2009, "Initiative for Vaccine Research; Geneva.
13. Orin Levine S. Thomas Cherian, "Pneumococcal vaccination for Indian children"; Indian Pediatrics 2007;44:491-496. Prevention of pneumococcal infections (internet)
http://www.who.int/vaccine_research/diseases/ari/en/index.
14. India UNICEF. "Progress for children report Dec 2007"; A statistical review; volume 64. WHO: "Pneumonia"; October 2011; Geneva; fact sheet no:331