ASSESSMENT OF NURSES' KNOWLEDGE AND PRACTICE REGARDING PNEUMONIA IN CHILDREN AT ALMACK NIMER UNIVERSITY HOSPITAL SHENDI- SUDAN, 2009

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ABSTRACT

Pneumonia is a major cause of under-five morbidity and mortality in Sudan. Pneumonia standard case management has been followed in Sudan through the National ARI Programme. No studies have so far looked at the inpatient case management of children admitted with pneumonia.

Objective: The objective of the study is to assess nurses' knowledge towards children with pneumonia, and to find out the relationships between their knowledge and their general information.

Methodology: A descriptive study was carried out at the Pediatric Ward Elmack Nimer University Hospitals. The study started from February, until September, 2009 on a purposive (non-probability) sample of 50 nurses working at the pediatrics care units. The data were gathered through the use of the constructed multiple choice questionnaires to evaluate the nurse's knowledge using checklist. The questionnaire consists of two parts, the first one is general information data and the second part is nurses' knowledge and practices of multiple choices. Descriptive statistical analysis procedure (frequency, and mean of score and standard deviation) was used to analyze data.

Results: The findings of the study indicated that nurses have moderate knowledge towards child pneumonia (knowledge and practice). There were no statistically significant association between nurses' knowledge and their general information.

Recommendations: The study recommended that great focusing should be directed towards the educational aspects at pediatrics care units by providing educational posters, guidelines, pamphlets and manuals to enhance nurses' knowledge and practices of pneumonia.

Keywords: Nurse knowledge, nursing practice, nursing children pneumonia

INTRODUCTION

Infections of respiratory tract are described according to the areas of infectivity. Upper respiratory tract or upper airway consists of oronasophaynx, pharynx, larynx and upper part of trachea. Lower respiratory tract consists of bronchi, bronchioles and alveoli. Bronchi and bronchioles are considered the reactive portion of lower respiratory tract, since they have smooth muscle content and ability to constrict (Kyle and Carman, 2012).

Respiratory infections spread from one structure to another because of contiguous nature of mucus membrane lining the entire tract. Consequently, infection of tract involves several areas rather than a single structure, although effect on one part may predominate in any given illness (Hockenberry & Wilson, 2007). Respiratory infections account majority of acute illnesses in children. The cause and course of these infections are influenced by age of child, season, living conditions and preexisting medical the problem (Kyle and Carman, 2012).

Respiratory tract infection is a frequent cause of acute illness in infant and children. Many pediatric infections are seasonal. Child response to infection will vary based on age of the child, causative organism: general health of child, existence of chronic medical conditions and degree of contact with other children (Nettina, 2005)

Pneumonia is an inflammation of lung parenchyma which can be caused by a virus, bacteria mycoplasma or fungus or it may also result from aspiration of foreign material into lower respiratory tract (aspiration pneumonia). Pneumonia occurs more often in winter and early spring. It is common in children but is also seen among infants and young toddlers. Viruses are common cause of pneumonia in younger children and the least common cause in older children. Viral pneumonia is usually better tolerated in children of all ages. Children with bacterial pneumonia more apt to present with a toxic appearance, but rapid recovery generally occur if appropriate antibiotic is given early. Pneumonia is usually a self limited disease. (Sazawal, *et al.*, 2003)

A child with recurrent pneumonia should be evaluated for chronic lung disease such as asthma or cystic fibrosis. Potential complication of pneumonia includes bacteremia, pleural effusion, Empyema, Lung abscess and pneumothorax. Excluding bacterium these are often treated with thoracentesis and or chest tubes as well as antibiotic if appropriate. Therapeutic management of children with less severe disease includes antipyretics. Adequate hydration and close observation even in case of bacterial pneumonia can be successfully managed at home if the breathing problem is not severe and oxygen saturation is within normal limits. However hospitalization is required for children with more severe disease (Haslett and Davidson, 2000).

Sudan implemented a national ARI (programme for control of acute respiratory infection) from 1987, thus following the SCM guidelines that were established by the WHO (2009). Relatively few studies were done on ARI in Sudan. Through our literature review it was evident that two studies considered the risk factors involved in hospitalized children. A community based intervention study assessed mothers' and caretakers' knowledge, attitude and practice (KAP) about appropriate care seeking for children with ARI, and evaluated the impact of a health education on their KAP. A quasi-experimental study was conducted to evaluate the capability of community health workers to correctly manage ARI cases in the Red Sea State. This study suggested that this information can be used later for effective detection and treatment of ARI cases (Elsayed, 1999).

Role of pediatric nurse in relation to morbidity and mortality in children according to pneumonia involves educating family and community regarding usual causes of deaths, types of childhood illnesses and symptoms that require healthcare. The goal is to raise awareness and provide guidance and counseling to prevent unnecessary deaths and illnesses in children. Health of children is basic to their well being and development. Pediatric nurse is an excellent position to improve future health of children (Kyle and Carman, 2012).

Nursing care of children with pneumonia is primary support and symptomatic but necessitates thorough respiratory assessment and administration of oxygen and antibiotics. Child respiratory rate and status as well as general disposition and level of activity should be frequently assessed. Isolation procedures are instituted according to hospital policy (Nettina, 2005).

OBJECTIVES

General objective

To assess the nurses' knowledge and practice regarding pneumonia in children at Elmack Nimier University Hospital Shendy- Sudan 2009.

Specific objective:

1. To assess nurses knowledge about types of pneumonia, evaluation of early management of pneumonia and complication of pneumonia.

2. To assess nurses level of practice and care for children with pneumonia in pediatric unit.

3. To assess nurses knowledge and care for children with pneumonia in pediatric unit.

4. To identify if there is any relation between training as well as years of experience and knowledge related to pneumonia.

MATERIAL AND METHODS

Research design:

A descriptive study - design was used in conducting this research.

Study area

The study area was carried out in Elmack Nimer University Hospital Shendi, Sudan,

Study population:

The population of this study includes all the nurses (either Diploma nurses or B.Sc nursing graduates regardless of their year of experience). These nurses

were involved in the care of the children with pneumonia at Elmack Nimer University Hospital Shendi.

Sample Size:

All the nurses concerned in caring for children with pneumonia at Elmack Nimir University Hospital in Pediatrics Units and Pediatrics Ward were involved in this study. A total of 50 nurses (total number of nurses) participated in this study.

Tools of Data Collection:

Two tools were used to collect the necessary data to achieve the aim of the study, they were:

1. Structured knowledge Questionnaire

2. Observational Checklist

Structured knowledge Questionnaire:

A structured interview sheet was developed by the researcher. It consists of two parts.

Part I:

The first part was about socio-demographic characteristics of the studied subjects such as biosocial data including age, sex and educational level

Part II :

The second part was developed to collect data about the nurse's knowledge about pneumonia such as definition, causes, manifestations, treatment, complications and nursing care.

Observational Checklist:

An observational checklist was developed by the researcher which was included check list about: hand washing, gloving, use antiseptic solution, oxygen administration suction, vital sign, intubation and care of patient on mechanical ventilation.

Statistical Design:

The collected data in pre test and post test was organized, categorized, tabulated in tables using numbers and percentage, mean percentage and standard deviation. The test also used the statistical package for social sciences (SPSS version) for statistical analysis.

Ethical Consecrations:

Nurses were assured that the data collected from the questionnaire remained confidential and personal identification was not needed by any means. Nurses were given the option to participate in the study with their consent and they were given the choice to withdraw from the study process at any time.

Inclusion and exclusion criteria:

Inclusion criteria:

1. Certified diploma, bachelor, and master nurses working in pediatrics units and pediatrics ward.

2. Collaborators in critical care units and pediatrics ward nurses working for more than six month

Exclusion criteria:

- Nurses not willing to participate
- Nurses who did not finished the study

RESULTS

This study is a descriptive analytic one based on cross sectional study in Elmack Nimer University Hospital. The nurses included in this study were working during the period extending from February until September 2009.

A pre tested and pre coded questionnaire consisting of 17 open and closed ended questions was used. It involved (50) nurses with ages ranging between 20 – 30 years. Their education levels were bachelor level (76%) and diploma (24%) without any post graduate level (0%) table (1). It was noticed that there is increase in knowledge about pneumonia with increase educational level. In this study the results showed that knowledge increased with nurses years of experience (2 year-54%); 2-3 year-20% and > 4 year-26%) table (2). That means the majority of nursing staff in this hospital were with minimum 2 years of experience. The majority of nurses have fair knowledge about cause of pneumonia, table (4). This study revealed that more than 50% of nurses said all investigation of pneumonia must be made such that the laboratory investigations are definite and specific. They are TWB c test (28%), chest X ray (20%) and sputum test.

Table 1: Showed nurses Qualification at Elmack Nimer University Hospital:

Qualification	Frequency	Percentage
Diploma	12	24%
Bachelor	38	76%
Post graduate	0	0%
Total	50	100%

Table 2: Years of experience for nurses at Elmack Nimer University Hospital:

Years of experience	Frequency	Percentage
2 year	27	54%
2 – 3 years	15	20%
> 4 years	13	26%
Total	50	100%

Table 3: Modify nurses' knowledge regarding common types of upper respiratory infection:

Common types of upper	Frequency	Percentage
Pharingities	12	24%
Laryngitis	2	4%
Asthma	9	18%
Pneumonia	27	54%
Total	50	100%

Table 4: Showed nurses' knowledge regarding the causes of pneumonia:

What is pneumonia	Frequency	Percentage
Viral infection	18	36%
Bacterial infection	23	46%
Others	9	18%
Total	50	100%

Table 5 : Showed nursing knowledge about early nursing evaluation of pneumonia patient

Evaluation of pneumonia	Frequency	Percentage
Chest sound	12	24%
Check V/S	31	62%
Check O2	7	14%
Total	50	100%

Table 6: Showed nurses' knowledge regarding types of pneumonia according to causative agent

Types of pneumonia according to causative agent	Frequency	Percentage
Viral	18	36%
Bacterial	26	52%
Hydrocorponic	4	8%
Lipid	2	4%
Total	50	100%

Table 7: Nurse's knowledge about laboratory investigations of pneumonia

Laboratory investigations of pneumonia	Frequency	Percentage
TWBCs	14	30%
Chest x-ray	10	20%
Sputum culture	0	0%
All of them	25	50%
Total	50	100%

Table 8: Nurse's knowledge about nursing management of pneumonia

Nursing management of pneumonia	Frequency	Percentage
Good ventilation	5	10%
Cold compression	0	0%
Check V/S	5	10%
All of them	40	80%
Total	50	100%

Table 9: Showed nurses knowledge regarding complication of pneumonia:

Complication of pneumonia	Frequency	Percentage
Cyanosis	8	16%
Convulsion	15	30%
Respiratory failure	27	54%
Total	50	100%

Table 10: Showed nurses knowledge about treatment of pneumonia:

Treatment of pneumonia	Frequency	Percentage
Antibiotics	35	70%
Antipyretic	5	10%
Fluids	4	8%
O2 therapy	6	12%
Total	50	100%

DISCUSSION:

Acute respiratory infections (ARI), predominantly pneumonia, are one of the leading causes of death amongst young children in developing countries (Davidson, 2000). The World Health Organization (WHO) estimated that ARI accounted for 18% of death among children under five years of age globally. In Sudan, ARI is the third cause of outpatient department (OPD) consultation among children under five (WHO, 2003)

The management of respiratory tract infection requires both medical intervention and nursing management such as therapeutic positioning, steam inhalation, on-invasive physical therapy intervention, medical intervention such as medication mobilization and oxygen therapy. This descriptive study was at the Pediatric ward of Elmack Nimer University Hospitals started from February, and was carried on until September, 2009. The data were gathered through the use of the constructed multiple choice questionnaires used to evaluate the nurses knowledge using checklist. Descriptive statistical analysis procedure (frequency,

and mean of score and standard deviation) were also used to analyze the significance of the study.

The available study reports of researches conducted in this area consistently express that nurses generally lack evidence based practice due to either lack of knowledge or due to ignorance. The knowledge level of the nurses of the study group was compared. It has been suggested from this study that the nurses usually lack knowledge due to lack of evidence based practice for nursing management related to pneumonia. Majority of the nurses in this hospital acquire their knowledge of taking care of patients from their basic educational programs, or from hospital policies and procedures. The demographic profiles of the participants also mentioned that majority of the nurses in the study group were bachelor degree holders, and had less than 2 years of Nursing experience. According to nursing staff level of knowledge or practice, the findings of the study indicated that nurses have moderate knowledge regarding pneumonia in children.

The nurses' ages ranged between 20 – 30 years. Their education levels were varied with bachelor level (76%) and the diploma (24%) and post graduate level (0%). So there was an increase in knowledge about pneumonia with an increase educational level table (1). This study also revealed that nurses years of experience >2 year (54%) and 2-3 year (20%) and > 4 year (26%) was not related to the quality of care. Therefore the common worker in this hospital was less experienced as they were practicing only for 2 years. This result was similar in the study that found that almost 80.0% of them had bachelor degree, experience years less than 5 years (70.0%). The result also showed that: (25.0%) was poor, (57.0%) fair, (17.0%) had good knowledge of participants' regarding prevention of pneumonia. Therefore factors such as level of qualification, and experience years, does not significantly affect level of knowledge (Mogahed, 2011). Consequently there were no statistically significant relationships between age, work experience, experience in caring for ARI patients, and duration of training with nurses' attitude towards pneumonia among children.

CONCLUSION:

Nursing staff in Elmack Nimer University Hospital were assessed; their education level the results showed that bacaloria 76% and diploma 24% about one third of them have age more than 20 years.

30% of the nurses were unaware of the evaluation and prevention of pneumonia and were unable to detect

the type of pneumonia. More than half of them did not known what is complication associated with pneumonia and with little knowledge about treatment and investigation.

50% of nurses in Elmack Nimer University Hospital have fair knowledge about pneumonia. Generally all these results were reflecting a fair knowledge among nurses in Elmack Nimer University Hospital, though there was no significant relation between years of experience and nurses knowledge.

Recommendations:

1- High priority should be given in the training of nursing staff to carry out Assessment tasks to secure correct classification and treatment. Special emphasis should be placed on the recording of danger signs like Cyanosis, convulsions and inability to drink.

2- Important implications in both classification and treatment is necessary. In -service training at the work place would be especially beneficial, since it will allow nurses staff in pediatrics units to review and change their own practices.

3 - Increase caretakers' recognition of pneumonia signs through extensive Health communication activities to improving family and community practices are essential.

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