



Nurses' Perception Toward Therapeutic Strategies for Children with Pneumonia

Samar Hussein Kareem¹, Marwah Salih Muslim¹, Sozan Ali Abdulhassan¹ and Haider Mohammed Majeed^{2,*}

¹Department of Pediatric Nursing, Collage of Nursing, University of Baghdad, Baghdad, Iraq.

²Department of Adult Nursing, College of Nursing, University of Baghdad, Baghdad, Iraq.

Corresponding author: Haider Mohammed Majeed (e-mail: haidermm@conursing.uobaghdad.edu.iq).

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Abstract Background: Pneumonia is the common lower respiratory tract infection among pediatrics, especially under five; it is a common cause of under-five children morbidity and mortality. **Objectives of study:** To identify nurses' perceptions toward therapeutic strategies for children with pneumonia and to find the association between their perceptions and their demographic variables. **Methods:** A Convenient sample of 46 nurses in Baghdad city from three hospitals (Kadhimiya Hospital for Children, Central Teaching Hospital of Pediatrics, and Child Welfare Teaching Hospital) included in the study to identify their perceptions regarding pneumonia in children. **Results:** The results of the study present that most of the nurses' participants in the age group (20-25 years) are female, with a diploma in nursing. There is an association between nurses' perceptions with many variables such as age, education level, service in the ward, and training courses. **Conclusions:** In general, nurses were well aware of the strategies used for children with pneumonia, but gaps in some items are likely due to their information taken from social media. Activating the Ministry of Health's media on the importance of global strategies for treating children with pneumonia is an important step to improve nurses' perception gaps.

Key Words Nurses' perception, Therapeutic strategies, Pneumonia

1. Introduction

Upper and lower respiratory tract infections are sub classified as acute respiratory tract infections. Pneumonia, a common and severe illness of the lower respiratory tract, is known as the hidden killer of children, killing between 1.1 and 1.4 million children annually and accounting for 17 to 19% of all deaths among children younger than five. The vast majority of these deaths occur in low-and middle-income nations [1].

Pneumonia is a type of acute lower respiratory infection that affects the lungs and is the leading infectious cause of infant mortality globally. 740 children under the age of five died of pneumonia in 2019, accounting for 14% of all deaths among children under five years but 22% of all among children aged between 1 to 5 years. Pneumonia affects children and families globally, with the highest mortality rates in South Asia and sub-Saharan Africa [2].

In poor nations, pneumonia is the leading cause of bacterial pediatric pneumonia. Infections of the lower respiratory tract can be caused by microorganisms usually found in the upper respiratory tract. They can also spread through coughing or sneezing droplets in the air or through the blood, especially during and shortly after birth. Pneumonia is the

leading cause of death among children under the age of five, surpassing all other known childhood diseases. Childhood pneumonia is a significant cause of mortality and morbidity in children under the age of five, with developing countries bearing the greatest pneumonia burden [3].

According to the statistics of the Iraqi Ministry of Health, which stated that the rate of admission of children aged less than five years in children's hospitals in Iraq, and the highest five governorates in the incidence of pneumonia among children were:

Pneumonia remains a leading reason of morbidity and mortality among children under five years. Risk factors include childhood age, malnutrition, immunosuppression, cigarette smoke, or air pollution exposure. There is a need for widespread implementation of available, effective interventions and the development of management strategies [4].

Pneumonia is a leading cause of death globally among children under the age of five, and good therapy has contributed to a decline in mortality from approximately one million in 2013. WHO recommends injectable ampicillin and gentamicin as the first-line treatment for severe pneumonia, with third-generation cephalosporin as the second-line treat-

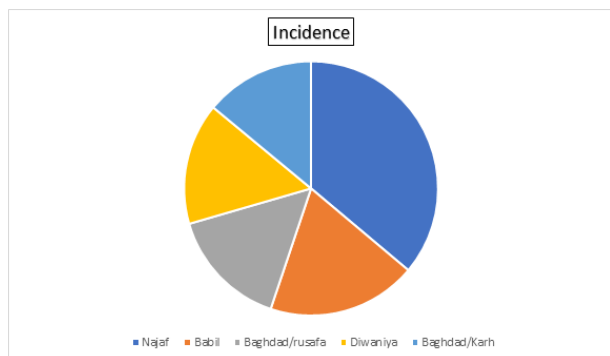


Figure 1: Distribution characteristics of comprehensive health degree of samples

ment [5].

Antibiotics are considered the appropriate treatment for community-acquired pneumonia patients in all hospitals by 14-35%, but there is an urgent medical need to develop some therapeutic strategies to help improve the condition of patients [6]. On the other hand, a study conducted by [7] refers to the most effective strategies in improving pneumonia as physiotherapy, such as Thoracic Expansion Exercises (TEE) and Chest Physiotherapy.

2. Methodology

A convenient sample of 47 nurses in Baghdad city from three hospitals (the determination of the instrument reliability occurs by calculation of Alpha Cronbach's test (Alpha Correlation Coefficient); internal consistency method used for determining the reliability for determination of the present study instrument reliability.

The result of the questionnaire reliability was Cronbach's Alpha = 0.819, indicating the questionnaires with sufficient level of internal consistency and equivalence measurability.

3. Result

Table 1 presents the statistical results for the demographic variables of the sample in the study, that 58.7% (27) of them at age (20-25) years of age. 89.1% (41) of them were female. 56.5% (26) of them have a nursing diploma at the educational level. 58.7% (27) of them have (1-5) years of general service in the nursing field and 63.0% (29) of them also have (1-5) years of service in the pediatric ward.

Table 2 shows the statistical results for the sample that participated in training courses or reading information related to children with pneumonia, 63.0% (29) of them did not participate in workshops or courses related to pneumonia, but 32.6% (15) of the sample that has Participated in workshops or courses related to pneumonia between (1-2) time of participation. 82.6 % (38) of them were read information about pneumonia. 26.1% (12) of the sample was reading information from social media sites source.

Table 3 presents the statistical results for the sample information level regarding children with pneumonia. That 50.0%

(23) of them have an excellent level at information levels with a chi-square of 15.174 and significance at p.value (0.001).

Table 4 presents statistical results for the sample information regarding management and treatment strategies for Children with Pneumonia, These results show that most of the sample results Strongly disagreed level for the information regarding management and treatment strategies for Children with Pneumonia.

Table 5 shows the statistical correlation between the sample information level regarding children with pneumonia with demographic variables. There was a non-significant correlation between the sample information level regarding children with pneumonia with all demographic variables except there was a significant correlation with Reading information there was a significant correlation at p.value (0.041) only.

Table 6 presents the statistical correlation between sample information regarding management and treatment strategies for children with pneumonia with demographic variables. There was a non-significant correlation between age and information level regarding children with pneumonia, except there was a significant correlation with knowing the causative agent and the disease degree necessary to choose the treating antibiotic at p.value (0.047), giving intravenous antibiotics because they are the fastest in treatment at p.value (0.023), also with raising the head of the bed 45 degrees to increase ventilation and prevent inhalation at p.value (0.023) only.

There was a non-significant correlation between educational and information levels regarding children with pneumonia, except a significant correlation with helping prevent pneumonia. Vaccines should be given to children according to the Vaccination Schedule at p.value (0.041); giving oxygen is one of the important steps to increase the level of oxygen in the blood at p.value (0.033), raising the head of the bed 45 degrees to increase ventilation and prevent inhalation at p.value (0.030) only.

There was a non-significant correlation between service in the ward and information level regarding children with pneumonia, except there was a significant correlation between helping prevent pneumonia, practicing good child hygiene (hand washing) at p.value (0.017), with breastfeeding and good nutrition helping prevent and reduce pneumonia at p.value (0.033) only.

There was a non-significant correlation between the training Course and the information level regarding children with pneumonia, except there was a significant correlation with using simple measures to reduce the severity of the spread of the disease at p.value (0.010), with a hand washing and sterilization is preventing the spread of pneumonia among infected children at p.value (0.008), also with giving intravenous antibiotics because they are the fastest in treatment at p.value (0.037) only.

4. Discussion

The study's results present the nurse's demographic data. Most of the nurses' participants in the age group (20-25 years) were 27(58.7%) (Table 1).

Demographic	Estimate	Freq.	%
Age	20-25	27	58.7
	26- 30	10	21.7
	31- 35	9	19.6
Sex	Male	5	10.9
	Female	41	89.1
Educational level	Nursing prep	13	28.3
	Nursing Diploma	26	56.5
	Bachelor	7	15.2
General service in the nursing field	Less than year	4	8.7
	(1-5) years	27	58.7
	(6-10) years	8	17.4
	(11-15) years	4	8.7
	(16-20) years	3	6.5
The service in the pediatric ward	Less than year	9	19.6
	(1-5) years	29	63.0
	(6-10) years	5	10.9
	(11-15) years	2	4.3
	(16-20) years	1	2.2
Total		46	100.0

Table 1: Statistical Results for the Demographic Variables of the Sample in the Study

	Estimate	Freq.	%
Participated in workshops or courses related to pneumonia	No	29	63.0
	Yes	17	37.0
Participating number of participated in workshops or courses	1-2	15	32.6
	3-4	4	4.4
	5-6	2.2	4.3
Read information about pneumonia	Yes	38	82.6
	No	8	17.4
Source of read information	Telephone	2	4.3
	Social media sites	12	26.1
	Scientific journals	1	2.2
	Scientific books	10	21.7
	Experience	6	13.0
	Social Media Sites and Books	10	21.7
	All of them	5	10.9

Table 2: Statistical Results for the Sample Participated in Training Courses or Reading Information related to Children with Pneumonia

		Freq.	%	X2	Sign.
Total Information Level	Poor	3	6.5	15.174	0.001
	Good	20	43.5		
	Excellent	23	50.0		
Total		46	100.0		

Table 3: Statistical Results for the Sample information level regarding Children with Pneumonia

This result is in disagreement with the study [8] in Egypt. They mentioned that most of the study sample for nurses in the age group < 30 was 35(70%). The majority of participating nurses were female, 41(89.1%), according to the study sample's findings, and this finding is consistent with a survey released by [9] in 2018, which found that 28(70%) of nurse participants were female at that time.

The level of Education of most nurses' participants was a nursing diploma, which presented 26(56.5%). This result is similar to a survey in Egypt released by [10] in 2019. Most of them have diplomas in nursing. The general service for participating nurses in the nursing field was 58.7% (27

of them have (1-5) years. This finding agrees with a survey released by [11] in 2022. The majority of participating nurses had years of experience for < 5 years of experience (45.8%).

Most of the participants, 63.0% (29) of the current study, served in the pediatric ward for (1-5) years; this result is in disagreement with a study by [12] in 2016, in which 36% (9) of the participant have more than ≥ 13 years of services in pediatric wards.

Regarding nurses' participation in training courses, 63% of them participated, while 82.6% of them read information about pneumonia with evidence of the effect of social media on their information. The study result is consistent with the

	Estimate	Freq.	%
Pneumonia (pneumonia) is a fatal disease	Strongly disagree	6	13.0
	Disagree	20	43.5
	Neutral	8	17.4
	Agree	9	19.6
	Strongly agree	3	6.5
Ease of treatment of pneumonia (pneumonia) and prevention of complications and death	Strongly disagree	7	15.2
	Disagree	23	50.0
	Neutral	10	21.7
	Agree	6	13.0
To help prevent pneumonia, vaccines should be given to children according to the Vaccination Schedule	Strongly disagree	9	19.6
	Disagree	27	58.7
	Neutral	7	15.2
	Agree	3	6.5
To help prevent pneumonia, practice good child hygiene (hand washing)	Strongly disagree	16	34.8
	Disagree	24	52.2
	Neutral	5	10.9
	Agree	1	2.2
Breastfeeding and good nutrition of the child help prevent and reduce pneumonia	Strongly disagree	23	50.0
	Disagree	17	37.0
	Neutral	4	8.7
	Agree	1	2.2
	Strongly agree	1	2.2
Teaching parents about preventing smoking in the child's surroundings as well as overcrowding	Strongly disagree	32	69.6
	Disagree	14	30.4
Use simple measures such as wearing a face mask and a tissue when sneezing to reduce the severity of the spread of the disease	Strongly disagree	30	65.2
	Disagree	16	34.8
Hand washing and sterilization is very important in preventing the spread of pneumonia among infected children inside the corridor	Strongly disagree	29	63.0
	Disagree	12	26.1
	Neutral	4	8.7
	Agree	1	2.2
Knowing the causative agent and the degree of the disease is necessary to choose the antibiotic when treating	Strongly disagree	28	60.9
	Disagree	18	39.1
Giving intravenous antibiotics because they are the fastest in treatment	Strongly disagree	24	52.2
	Disagree	17	37.0
	Neutral	3	6.5
	Agree	1	2.2
	Strongly agree	1	2.2
Giving oxygen is one of the important steps to increase the level of oxygen in the blood	Strongly disagree	28	60.9
	Disagree	18	39.1
Raising the head of the bed 45 degrees to increase ventilation for the injured child and to prevent inhalation	Strongly disagree	21	45.7
	Disagree	18	39.1
	Neutral	4	8.7
	Agree	1	2.2
	Strongly agree	2	4.3
Teaching parents about chest physiotherapy techniques and deep breathing to reduce secretions in the chest	Strongly disagree	27	58.7
	Disagree	16	34.8
	Neutral	3	6.5
Special information and training are essential for nurses about pneumonia	Strongly disagree	35	76.1
	Disagree	10	21.7
	Strongly agree	1	2.2
Total		46	100.0

Table 4: Statistical Results for the Sample information regarding management and treatment strategies for Children with Pneumonia

	X2	P.value	Sign
Age	7.251	0.123	NS
Sex	2.087	0.352	NS
Educational level	4.121	0.390	NS
General service	12.179	0.143	NS
Service in the children's halls	7.558	0.478	NS
participated in workshops or courses	2.211	0.331	NS
Reading information	6.375	0.041	S
Sources of information	14.940	0.245	NS

Table 5: Statistical Correlation between the Sample information level regarding Children with Pneumonia with Demographic Variables

study of [13], where 63.6% of nurses participated in training courses (Table 2).

The researchers believed that the number of nurses who participated was few and that most of them had yet to attend workshops or training sessions on treating children with pneumonia. They also believed that since most participating nurses were interested in learning more about the topic, they tended to do so from social media rather than reliable academic sources, which could have provided inaccurate or unreliable information. The care provided to children with pneumonia will be improved by the nurses' participation in training sessions that impact the quality of childcare services and ensure that nurses are competent.

50.0% of the nurses have excellent information about children's pneumonia. The study results inconsistent with the study of [14] were (50.0 %) of the nurses had poor information regarding pneumonia in children and 0% of them had excellent information (Table 3).

According to the result, the majority strongly disagree (76.1%) about information and training for nurses. This does not correspond to the study by ([8], [15], [16]). They illustrate the improvement in nurses' knowledge and practice after a training and education program (Table 4).

More than half strongly disagree with teaching parents about smoking and the crowded effect (69.6%). This is compatible with a study by [17] where 16.09 percent of children died of severe pneumonia due to smoking. However, a study conducted in New Zealand by [18] was contradictory, which refers to overcrowding leading to acute respiratory disorder. While a low percentage (39.1) disagreed that the item increased ventilation by elevating the head by 45 degrees, this result resembles the study by [10]. (43.5%) of them disagree that pneumonia is considered a fatal disease. This result reverses a study by [19] adopted by the World Health Organization (WHO). Moreover, a study by [1] for mothers' perception of pneumonia was dangerous at 68.2%. Another study also refers to the result by [17], which was a high average of mortality related to severe pneumonia.

Results show no association between nurses' demographic characteristics and their information level. However, a positive statistical correlation exists between the nurse's information level regarding children's pneumonia and their reading

information. This result is inconsistent with the study of [20] that showed a significant association between nurses' knowledge and their age and years of employment (Table 5).

The current study shows a significant correlation between variable age, education level, service in the ward, training course, and nurses' perception of causative agents in medical and nursing management of pneumonia. This result agrees with a study by [14]. On the other hand, a study by [21] contravenes demonstrates that There is no effect of the level of Education on nurses' knowledge. In addition, another study by [22] contrary showed no significant difference between variables and nurses' knowledge about pneumonia (Table 6).

In the researchers' opinion, nurses' different perceptions are due to their lack of interest in information about pneumonia and linking it to work reality and its correct effect on response to treatment and prevention.

5. Conclusion

In general, we note that nurses were well aware of the strategies used for children with pneumonia, but the presence of gaps in some items is likely due to their information taken from social media. The study recommended enhancing awareness of some items related to strategies through workshops and courses certified training. Educating mothers about some important procedures to reduce pneumonia infection such as handwashing, breastfeeding, and vaccinations. Activating the Ministry of Health's media on the importance of global strategies used in the treatment of children with pneumonia.

Recommendation

- 1) Enhancing awareness of some items related to strategies through workshops and courses certified training.
- 2) Educating mothers about some important procedures to reduce pneumonia infection such as hand washing, breastfeeding, and vaccinations.
- 3) Activating the Ministry of Health's media on the importance of global strategies used in the treatment of children with pneumonia.

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Conflict of Interest

The authors declare no conflict of interests. All authors read and approved final version of the paper.

Authors Contribution

All authors contributed equally in this paper.

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	Age	Educational level	Service in the ward	Training Course
Pneumonia (pneumonia) is a fatal disease	0.835	0.545	0.296	0.061
Ease of treatment and complications prevention and death	0.162	0.584	0.987	0.850
To help prevent pneumonia, vaccines should be given to children according to the Vaccination Schedule	0.859	0.041	0.847	0.625
To help prevent pneumonia, practice good child hygiene (hand washing)	0.570	0.881	0.017	0.570
Breastfeeding and good nutrition help prevent and reduce pneumonia	0.247	0.101	0.033	0.328
Teaching parents about preventing smoking in the child's surroundings as well as overcrowding	0.180	0.080	0.539	0.193
Use simple measures to reduce the severity of the spread of the disease	0.070	0.292	0.728	0.010
Hand washing and sterilization is preventing the spread of pneumonia among infected children	0.151	0.670	0.132	0.008
Knowing the causative agent and the disease degree is necessary to choose the treating antibiotic	0.047	0.369	0.121	0.549
Giving intravenous antibiotics because they are the fastest in treatment	0.023	0.224	0.433	0.037
Giving oxygen is one of the important steps to increase the level of oxygen in the blood	0.079	0.033	0.549	0.976
Raising the head of the bed 45 degrees to increase ventilation and prevent inhalation	0.023	0.030	0.433	0.410
Teaching parents about chest physiotherapy techniques and deep breathing	0.077	0.526	0.186	0.840
Special information and training are essential for nurses about pneumonia	0.482	0.684	0.488	0.162

Table 6: Statistical Correlation between Sample information regarding management and treatment strategies for Children with Pneumonia with Demographic Variables

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