

Assessment Of Nurses' Knowledge Towards Using Physiotherapy For Children With Pneumonia At Pediatric Hospitals In Babylon Province

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Abstract

Background: Physiotherapy is considered to aid in the removal of inflammatory exudates, tracheobronchial secretions, and airway blockages, as well as the reduction of airway resistance, in order to promote breathing and gas exchange. **Aims:** This study aimed to assess nurses knowledge towards using physiotherapy for children with pneumonia. **Methods:** A descriptive study design was carried out for the period of January 10th 2021 to June 27th 2021 on nurses working at children's hospitals in Babylon. The research sample includes (40) nurses working in Children's Hospital. (23) who are selected from Babylon Hospital for Maternity and Children, and (17) who are selected from Al-Noor Hospital for children by using non probability sampling (purposive sample), the data collection process uses the self-administrating technique in which the nurse fills the questionnaire form by themselves; and analyzed through the descriptive and inferential statistic. **Results:** Findings indicate the majority of study sample is female (80%), (40%) aged 20-25 years, (35%) High School Nursing graduated, (55%) have less than 5 years as experiences, and all of them no participation courses related to the use of physiotherapy. By the overall knowledge, nurses with unsatisfactory knowledge related to the use of physiotherapy. **Conclusions:** Unsatisfactory nurses knowledge about using physiotherapy for children with pneumonia due to less years of experience and lack of training sessions. More years of experience in training the staff on physiotherapy for children with pneumonia by local officials help raising professionals' nurses. Provide the health resources and exploiting young energies of nurses which indeed helps to develop their knowledge. **Key-wards:** Assessment, Nurses Knowledge, Physiotherapy.

INTRODUCTION

Pneumonia is the most prevalent infection, affecting around 450 million persons each year and impacting people in every country. It is the leading cause of mortality in all age categories, accounting for 7% of all fatalities worldwide each year^[1]. Pneumonia claimed the lives of 920,000 children below the age of 5 in 2015, accounting for 15% of all deaths; 99 percent of deaths were in children below the age of 5^[2]. Pneumonia is the leading cause of mortality in children below the age of 5 worldwide, with the bulk of deaths occurring in Sub-Saharan Africa and South Asia. Despite the fact that the latter infections have gotten more attention in recent years, pneumonia kills more children under the age of five than AIDS (acquired immune deficiency syndrome), malaria, and measles combined^[3]. Acute lower respiratory infections (ALRI) affect around 120–156 million people worldwide each year, with about 1.4 million of them dying. Pneumonia, on the other hand, kills an estimated 1 million children below the age of 5 every year, accounting for 15% of all fatalities in children below the age of 5, with 90–95 percent of these deaths happening in poor countries. Only 15 nations account for pneumonia episodes in children under the age of five, with South Asia and Sub-Saharan Africa bearing the brunt of the burden, accounting for over half of all pneumonia cases in children worldwide^[4]. Pneumonia is the top cause of killed in children below the age of 5 across the world. Every year, the illness kills about two million children below the age of 5, with India accounting for roughly a quarter (400,000) of these deaths. In India, bacteria cause around half of pneumonia infections, which may be treated with medicines. Antibiotics are only given to 13% of Indian children under the age of five who have probable pneumonia^[5]. Pneumonia happened In 2008 in approximately 156 million children (151 million in the developing world and 5 million in the developed world). It caused in 1.6 million deaths or 28–34% of all deaths in those under 5 years of age of which 95% occur in the developing world countries with the greatest burden of disease include: India (43 million), China (21 million) and Pakistan (10 million) children in developing countries are at a significantly higher danger for developing pneumonia because malnutrition, overcrowding, and the lack of proper housing are prevalent risk factors^[6]. The use of chest physiotherapy as an adjuvant to the cure of children with acute pneumonia in the hospital is still debatable. On the one hand, child chest physiotherapy has been and continues to be widely

utilized to help these kids clear inflammatory exudates and tracheobronchial secretions, eliminate airway obstruction, lower airway resistance, enhance gas exchange, and reduce breathing effort^[7].

On the other hand, empirical data supporting the efficacy of chest physiotherapy in children hospitalized with pneumonia is lacking. Chest physiotherapy is not helpful and should not be administered in children with pneumonia, according to British Thoracic Society guidelines; Nonetheless, these guidelines are mostly based on the results of two randomized controlled trials, one in adults and the other in children. Furthermore, due to the small sample size, exclusion of patients with suspected bacterial pneumonia, and insufficient randomization and blinding, the validity of this elderly pediatric clinical research is questioned^[8]. Physiotherapy treatment is sometimes used to help infants with pneumonia who are in the hospital. To minimize labor of breathing, enhance gas exchange, and raise lung volumes, physiotherapy treatments attempt to move and evacuate mucus from the airways. The goal of physiotherapy treatment has also been to shorten the time it takes to achieve clinical stability or the length of a hospital stay^[9].

A variety of techniques are used in chest physiotherapy for babies with bronchiolitis. Although some techniques have not been scientifically validated, some remedies have recently been tested in clinical studies. The various treatments are not described in the recommendations, but are referred to in broad terms such as "chest physiotherapy". Therefore, this study aimed to assess nurses' knowledge towards using physiotherapy for children with pneumonia.

METHODOLOGY

Descriptive study design is conducted for the period of January 10th 2021 to June 27th 2021 on nurses working at children's hospitals in Babylon.

The research sample includes (40) nurses working in Children's Hospital. (23) who are selected from Babylon Hospital for Maternity and Children, and (17) who are selected from Al-Noor Hospital for children by using non probability sampling (purposive sample).

Study instruments include

Part I: Demographic status includes the general information of the nurses like (age, gender, educational level, number of years of service in the nursing field, the number of years of service in children's hospital, the participation courses related to the use of physiotherapy)

Part III: Nurses' knowledge of the use of physical therapy. The overall sum of questions is (20) questions. The questionnaire items aim for study purposes and it involves relevant topics to the study subject and the educational program.

The data collection process uses the self-administrating technique in which the nurse fills the questionnaire form by themselves; and analyzed through the descriptive and inferential statistic.

RESULTS

Table 1: Distribution of the studied subjects according to (SDCv.) with comparisons significant

SDCv.	Classes	No	%	C.S. ^(*) P-value
Gender	Male	8	20.0	P=0.000 (HS)
	Female	32	80.0	
Age Groups	20 _ 25	16	40.0	$\chi^2= 9.000$ P=0.029 (S)
	26 _ 30	12	30.0	
	31 _ 35	9	22.5	
	More than 36	3	7.5	
Educational level	High School Nursing	14	35.0	$\chi^2= 0.650$ P=0.723 (NS)
	Diploma (Nursing Institute)	11	27.5	
	Bachelor (Faculty of Nursing)	15	37.5	
Number of years of service in the nursing field	1 _ 5	22	55.0	$\chi^2= 22.400$ P=0.000 (HS)
	6 _ 10	10	25.0	
	11 _ 15	6	15.0	
	16 _ 20	2	5.0	
The number of years of service in Children's Hospital	1 _ 3	16	40.0	$\chi^2= 15.750$ P=0.003 (HS)
	4 _ 6	11	27.5	
	7 _ 9	7	17.5	
	10 _ 12	4	10.0	
	More than 12	2	5.0	
Do you have participation courses related to the use of physiotherapy ?	No	40	100	P=0.000 (HS)
	Yes	0	0.00	

^(*) **HS: Highly Sig. at P<0.01; Testing based on One-Sample Chi-Square test, and Binomial test.**

Results shows that a highly significant differences are accounted in at least at P<0.05 among observed distribution with their an expected outcomes in each variable, except with educational levels which showed no significant different among the three education levels.

In addition to that, gender variable has vast majority with female in, and accounted 32(80%) of the studied subjects, age groups are focusing at the primary groups, (i.e. 20 _ 30 yrs.), and accounted 28(70%), then followed by education levels which has reflecting validity of the selected subjects due to their similarity status in light of that variable. Number of years of service in the nursing field, are focusing at the first two groups, and are accounted 32(80%), as well as number of years of service in children's hospitals, are focusing at the first two groups, and are accounted 27(67.5%) , then finally followed by asking about having participation courses related to the use of physiotherapy, which showed that all studied subjects hasn't joining any courses related to physiotherapy.

Table 2: Descriptive Statistics of the studied sample according to the (Nurses' knowledge of the use of physiotherapy items)

Item's of the : Domain II	No.	Statistics			
		MS	SD	RS%	Ass.
1. Physiotherapy provides services for children to develop, maintain and restore movement to its maximum potential and functional capacity throughout life	40	1.22	0.95	61.0	M
2. The importance of physiotherapy as an effective choice for a fast and safe recovery	40	0.95	0.68	47.5	M
3. There are many specialties in physiotherapy among them	40	0.87	0.76	43.5	M
4. Physiotherapy for lungs and limbs	40	0.60	0.90	30.0	L
5. Aspiration is considered one of the physical treatment of the chest	40	1.00	1.01	50.0	M
6. Breathing exercises are considered one of the chest physiotherapy	40	0.35	0.77	17.5	L
7. Physiotherapy primarily consists of exercise, massage, and pulling	40	0.98	0.86	49.0	M
8. Physiotherapy is an art and science that contributes to the development of health and the prevention of complications through an understanding of body movement	40	0.35	0.53	17.5	L
9. There are many cases that require physiotherapy, including abnormalities in lung function	40	0.83	0.90	41.5	M
10. The most common procedures used are postural drainage and chest percussion	40	0.18	0.38	9.0	L
11. One procedure of percussion and vibration is to relieve pressure on the rib cage when the patient inhales	40	0.53	0.82	26.5	L
12. Heart and lung physiotherapy is primarily concerned with the respiratory function of the heart	40	1.00	1.01	50.0	M
13. Manual therapy is used in the field of physiotherapy to help remove lung secretions	40	0.30	0.46	15.0	L
14. Breathing exercises help strengthen the muscles that work to inflate and return the lungs	40	0.55	0.50	27.5	L
15. Respiratory therapists, nurses, and family members who have been educated use aspiration to help clear secretions from the airway.	40	0.70	0.79	35.0	M
16. Postural drainage when a person sits at an angle or propped up at a chosen angle to help drain secretions from the lungs	40	0.58	0.50	29.0	L
17. Knock on the chest or back with a cupped hand to help loosen the secretions	40	0.93	0.80	46.5	M
18. Encourage the patient to cough using the abdominal muscles after three or four vibrations	40	0.45	0.71	22.5	L
19. Tap or clap with arched hands or the chest wall for 5 minutes on each section for 5 minutes for CF and 1-2 minutes for other cases	40	0.70	0.76	35.0	M
20. Learn about the patient's medications. Some medications, especially antihypertensive diuretics, cause changes in fluid and haemodynamics. These reduce the patient's tolerance to postural changes and postural drainage.	40	0.00	0.00	0.0	L

Evaluation Intervals Scoring Scales of Percentile Global Mean of Score (PGLMS): [L: Low (0.00 – 33.33)]; [M: Moderate (33.34 – 66.66)]; [H: High (66.67 – 100)].

Statistics of nurse's knowledge about using Physiotherapy for children with pneumonia at pediatric hospitals in Babylon city. Findings indicated that the nurses with unsatisfactory knowledge (low to moderate level).

DISCUSSION

Regarding to the distribution of the socio demographic characteristics of the sample, the findings indicated that about three quarters of nurses were females. This finding supported by the results of the following studies. In a quasi-experimental study conducted in ICUs in Istanbul, the finding indicated that two third of nurses were females ^[10]. In a descriptive study was carried out at pediatric ward of Kirkuk Teaching Hospitals, the finding indicating that most of nurses were females ^[11]. In a quasi-experimental study design carried out at Alzahrawy Hospital and Child and maternity hospital in Al Amara City, the finding revealed that most of nurses were females ^[12]. While, in a quasi-experimental design conducted found that majority of nurses were males, and this finding inconsisted with our finding ^[13].

Regarding to nurses age, most of nurses at age (20-25) years. In a descriptive study found that half of nurses at age (20-30) years ^[14]. However, Cengiz, & Kanan, (2019), they found in their study that three quarter of nurses at age less than 25 years ^[13]. Moreover, Al-Waly et al., (2020) they found in their study that most % at age (20-25) years old ^[14]. It is reported that most of nurses at age 18-25 years ^[12]. This finding in same line with the present study finding.

While, Saeed, (2012) found that most of nurses at age (25-35) years ^[13]. Also, in a Quasi experimental research design carried out by (Mohamed et al., 2019), the finding indicated that more than half of nurses at age (25-30) years ^[15]. This results disagree with our study.

As regard to nurses' level of education, the finding shows that less than half of nurses had bachelor's degree in nursing. This finding supported by the finding of Saeed, (2012) found that most of nurses had bachelor degree in nursing ^[13]. Also, Al-Waly et al., (2020) supported our study, they found that less than half graduated from college of nursing (Bachelor of Nursing) ^[11].

Hassan, (2017) found that half of nurses had diploma in nursing ^[14]. Cengiz & Kanan, (2019) found that more than half of nurses were under graduated ^[11]. Mohamed et al., (2019) found that (60%) of nurses had technical nursing institute graduated ^[15]. However, Jassm & Aziz, (2020) found that half of nurses graduated of nursing institute ^[12]. This finding inconsisted with our finding.

According to years of service in nursing field, (55%) of them had (1-5) years of service. Saeed, (2012) found that most of nurses had (1-6) years of experience ^[13]. In a descriptive study carried out by Hassan, 2017, he found that three quarters of nurses at age (1-5) years of experience ^[15]. Cengiz & Kanan, (2019) found that most of nurses had (1-9) years of experience in nursing ^[10]. Also, Al-Waly et al., (2020) found that most of them have (1-5) years of general experience ^[11]. Jassm & Aziz, (2020) found that half of nurses had (1-10) years of service in nursing field ^[12]. This finding in same line with the present study. While, the finding of Mohamed et al., (2019) disagree with our finding, they found that half of nurses had (5-10) years of service ^[15].

Relating to years of service at children hospitals, less than half of nurses had (1-5) years of service in children hospitals. Cengiz & Kanan, (2019) found that more than half of nurses had (1-9) years of experience in ICU ^[10]. Al-Waly et al., (2020) found that majority of them have (1-5) years of experience inside the medical pediatric ward ^[11]. This finding agree with our finding.

According to nurses participation in courses related to the use of physiotherapy, the finding revealed that all of nurses not participated in any training sessions related to physiotherapy. Also, Cengiz, & Kanan, (2019) found that more than half of nurses do not participate in training session related to ventilator-associated pneumonia ^[10]. Moreover, Al-Waly et al., (2020) found that 57.5 not have any participation in training courses at the pneumonia in children under five years of age ^[11]. Additionally, Jassm & Aziz, (2020) found that most of nurses do not participate in training session related to pneumonia ^[12]. This finding supported the present study results.

Discussion of the studied sample according to the (Nurses' knowledge of the use of physiotherapy items)

The finding of the nurses knowledge related to use of physiotherapy shows that nurses have low level of knowledge in half of items which include (Physiotherapy for lungs and limbs, Breathing exercises are considered one of the chest physiotherapy, Physiotherapy is an art and science that contributes to the development of health and the prevention of complications through an understanding of body movement, The most common procedures used are postural drainage and chest percussion, One procedure of percussion and vibration is to relieve pressure on the rib cage when the patient inhales, Manual therapy is used in the field of physiotherapy to help remove lung secretions, Breathing exercises help strengthen the muscles that work to inflate and return the lungs, Postural drainage when a person sits at an angle or propped up at a chosen angle to help drain secretions from the lungs, Encourage the patient to cough using the abdominal muscles after three or four vibrations, Learn about the patient's medications. Some medications, especially antihypertensive diuretics, cause changes in fluid and hemodynamics. These reduce the patient's tolerance to postural changes and postural drainage). While moderate level in the other half of items.

Ali et al., (2018), conducted a descriptive study on pediatric intensive care units (PICUs) at Benha University Hospital and Benha Pediatrics Specialized Hospital. They discovered that just a handful of the nurses testing had acceptable knowledge of chest physiotherapy, whereas the majority of the nurses evaluated had

inadequate understanding of chest physiotherapy. This result matched the results of the current research in the pretest ^[16].

Also, the findings of Mohamed et al., (2019) agree with our finding, they found that most of nurses had unsatisfactory performance about chest physiotherapy for children with pneumonia at the pretest. Most of nurses had unsatisfactory level for chest and lung assessment, most of them had unsatisfactory level for performing postural drainage, percussion and vibration, more than half of them had unsatisfactory level for performing suctioning (oropharyngeal and nasopharyngeal suction), more than half of them had unsatisfactory level for performing oral care ^[15].

In point of my view that the logical reason of this results because of most participate in study was with low level knowledge about using of chest physiotherapy for children with pneumonia and most of them without any information about the topic study. This is indicating that the educational program need to be conducted among nurses.

CONCLUSION

Unsatisfactory nurses knowledge about using physiotherapy for children with pneumonia due to less years of experience and lack of training sessions. More years of experience in training the staff on physiotherapy for children with pneumonia by local officials help raising professionals' nurses. Provide the health resources and exploiting young energies of nurses which indeed helps to develop their knowledge.

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