Mothers's Knowledge Regarding Care of Children Having Pneumonia Under Five Years

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ABSTRACT

Background: Pneumonia is a leading cause of death among children under five years of age. Pneumonia deaths could be prevented if mothers recognized the dangerous signs and sought appropriate treatment promptly. **Aim:** The current study aimed to; explore mothers' knowledge regarding care of children having pneumonia under five years. **Subject and Methods** : Descriptive e xp loratory research design was utilized. The convenient sample for 125 mothers of children who under five years with pneumonia and not companied with congenital heart diseases admitted in pediatric medical units at Minia University Hospital for Obstetrics and Pediatrics . The required data was collected through structured interview questionnaire which developed by the research investigator to assess mother's knowledge regarding care of children with pneumonia. Results:Apparently,77 .6% of the mothers in the current study had satisfactory level of knowledge about pneumonia while, 22. 4% had unsatisfactory level. The majority (82.4%) of the mothers had satisfactory level of total knowledge regarding care of children having pneumonia. It was found that, the mothers' educational level had a significant positive correlation with mothers' total knowledge about pneumonia. **Conclusion:** It was concluded that the highest percentage of the mothers had satisfactory level of total knowledge regarding care of children having pneumonia. Urban and employed mothers had satisfactory level of knowledge rather than the younger, rural and housewife mothers. **Recommendations:** Pediatric nurses should educate mothers about dangerous signs of pneumonia, ways of prevention and the importance of early medical seeking of disease.

Keywords: Pneumonia- Under five year's children- mothers.
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Introduction

Pneumonia is an infection of the lower respiratory tract that involves the airways and parenchyma with consolidation of the alveolar spaces. Worldwide, It has been estimated that approximately 2 million deaths per year in children under 5 years of age due to pneumonia (**Ebell, 2010 ; Watkins & Lemonovich, 2011**).

According to American Lung Association (2014), pneumonia most often caused by infection with bacteria, viruses, and other organisms. Pneumonia can be classified as hospital-acquired pneumonia (HAP) or nosocomial pneumonia (NP) and community-acquired pneumonia (CAP). Pneumonia is divided into several types based on the agents causing this disease and these vary according to the child's age.

Despite those specific signs and symptoms all types of pneumonia do share the common symptoms such as fever is usually high, cough-unproductive to

productive with white sputum, tachypnea, crackles, decreased breath sounds, also chest pain, retractions, nasal flaring, dullness with percussion, vomiting, diarrhea, abdominal pain, irritability, restlessness, malaise, lethargy and chest pain (**Watkins & Lemonovisch, 2011**). Symptoms of pneumonia may range from mild to severe. It is an important cause of extended hospitalization and death while it can be prevented with simple interventions, and treated with low-cost, low-tech medication and care (WHO, 2013).Mother's knowledge that they may be unable to recognize the early symptoms of pneumonia, which may delay seeking appropriate care. Health care providers thought that the majority of mothers considered pneumonia as a serious illness, but at the same time majority of mothers could not recognize the signs of pneumonia (**Arora, et al. 2010**).

Pneumonia should be treated with antibiotics. Most cases of pneumonia require oral antibiotics, hospitalization is recommended only for severe cases of pneumonia, and for all cases of pneumonia in infants younger than two months of age. Preventing pneumonia in children is an essential component of a strategy to reduce child mortality. Immunization against hepatitis B, pneumococcus, measles and whooping cough (pertussis) is the most effective way to prevent pneumonia. Adequate nutrition is a key to improving children's natural defenses, starting with e xclusive breastfeeding for the first six months of life. Encouraging good hygiene in crowded homes also reduces the number of children who fall ill with pneumonia (**Long, Pickering & Prober, 2012; WHO, 2013**).

The nurse should educate the mothers that care of the child with pneumonia is primarily supportive and symptomatic. It depends upon the severity of the symptoms and the etiologic agent. Supportive care should focus on maintain adequate oxygenation and airway clearance (**Potts & Manlleco, 2012**).

Significance Of The Study

Pneumonia remains the single largest cause of hospitalization and death among children under the age of five years globally. The incidence of pneumonia in children under the age of five years is more than 150 million episodes of pneumonia occur every year among children under five in developing countries, accounting for more than 95 percent of all new cases worldwide. Between 11 million and 20 million children with pneumonia will require hospitalization with estimated annual death of 1.2 million. This accounts for 18% of all deaths of children younger than 5 years worldwide and nearly all of those are children from developing countries(**Banstola & Banstola, 2013**). Half the world's deaths due to pneumonia in children under the age of five years occur in Africa(**Onyango, et al., 2012**).According to health statistics of **WHO ,(2013)** , under-5-years mortality rate among Egyptian children with pneumonia is 21 per 1,000 live births and causes 11% of mortality of children in the same age group. On the same line, [20] reported that every year in Egypt, 42,000 children under-5 die as a result of pneumonia.

Hence, the current study was under taken to explo re the knowledge of mothers regarding care of children having pneumonia under- five. Results of the current study may help in evaluation of the mother's knowledge regarding care of children having pneumonia under five years. As well as providing guidance and recommendations that should be reflected in pediatric nursing education and practice.

Aim Of The Study

The aim of the current study was to explore mother's knowledge regarding care

of children having pneumonia under fiveyears.

Research Question

What is the level of mother's knowledge regarding care of children having pneumonia under five years?

Subject And Methods

Research design:

A descriptive e xploratory research design was used to achieve the aim of the current study.

Setting:

The current study was conducted in pediatric medicine unit at Minia University Hospital for Obstetric and Pediatric (MUHOP).

Sample

A convenient sample 125 mothers of children under five years with pneumonia and not companied with congenital heart diseases admitted in pediatric medical units at MUHOP were participated in the study.

Data collection tool

Structured interview questionnaire: It was developed by the research investigator. The questionnaire was in Arabic language and composed of 46 questions. Data collection tool composed of four parts were as the following: Part I: Personal data about mothers of children with pneumonia

Part II: Characteristics of children with pneumonia

Part III: Knowledge of mother regarding pneumonia

Part VI: Care provided by mother for children with pneumonia

Validity and Reliability

The content validity: was e xa mined by five e xperts. Based on experts` co mments and recommendations minor modifications had been made.

Reliability: Cronbach's alpha for reliability testing internal consistency was performed for each section of the questionnaire and the results was 0.72 and 0.74 for mother's knowledge about pneumonia, mother's care giving to their children respectively.

Pilot study

The pilot study was conducted on 13 mothers who met the inclusion criteria was done The results of pilot study tha the tools were completed without difficulty, adding support to the validity of the instrument. Little modification was done e.g. rephrasing and rearrangements of some sentences.

Data collection procedure: Official permissions from the directors of MUHOP and pediatric medicine unit were obtained. Mothers who met the selection criteria were invited to participate in the study. The purpose and the nature of study were e xpla ined to each mother individually. A formal written consent was obtained from each mother to get her acceptance as well as to gain her cooperation. Clear and simple e xplanations about the aim and nature of the study were discussed by the research investigator for each mother. The interview conducted for all mothers to fill the personal data and to assess their knowledge regarding care of children with pneumonia on individual bases. The interview took place in the inpatient rooms in the pediatric medicine unit at MUHOP. The time taken to conduct the structured interview questionnaire for each mother was ranged from 25 to 30

minutes and at rate of 3 to 5 mothers/ week. Data collection was conducted over a seven months period e xtending from May 2013 till December 2014.

Ethical Considerations

A written approval was obtained from the Research Ethical Committee at the Faculty of Nursing, Cairo University. An official permission was obtained from the director of MUHOP. Each mother was informed about the nature, purpose of the study and its benefits. The research investigator emphasized that, participation in the study voluntary and possibility to withdraw at any time without repercussions and without any effect on their children' care. Confidentiality was also assured through coding the data. Each assessment sheet was coded anonymous. An informed written consent was obtained from mothers who met the criteria of selection and accepted to be included in the study.

Statistical Analysis:

The collected data were, coded, categorized, tabulated, and analyzed using the Statistical Package for the Social Science (SPSS 20.0).

Results:

As regards the personal of mothers of children with pneumonia, table (1) revealed that more than half of mothers (53.6%) their age ranged from 18-22 years. It was found that the mean age of the mothers was 22.9 ± 3.8 years. The vast majority of them (94.4%) came from rural areas, and 97.6% of them were housewives. Regarding to their level of education, the same table showed that 60% of the mothers were illiterate.

Concerning personal data pertinent to children with pneumonia, table (2)highlighted those children' age ranged from 1-6 months (61.6%), and the mean age was 8.67 ± 5.076 months. More than two thirds of children (67.2%) were males. In addition, more than half of them (52.8%) ranked as the first child in family and the highest percentage (80%) of them were underweight.

Regarding to the type of feeding, the study results evident that 69.6% of children were breastfed and the duration of breast feeding was less than 4 months among 47.2% of them. The same table proved that the duration of breast feeding was 4- 6 months in 31% of children. Children' age at introducing of new foods was 6 months in 42.8 % of them.

Regarding to children's past history about pneumonia, the study results pointed out that 27.2% of children had previous history of pneumonia. The highest percentage of them (44.1%) had suffering twice from pneumonia before, 32.4% had once, and more than twice was 23.5%. The mean of previous episodes of pneumonia was 2.02 ± 1.05 t imes. Half of children (50%) with history of pneumonia were treated at hospital, 29.4% of them treated at home.

Concerning the mothers' knowledge about pneumonia, table (3) illustrated that 41.6% of mothers defined pneumonia as lower respiratory infection invading lungs. An equal percentages (44%) of the mothers replied that their sources of information were mainly from personal e xperience and physicians. Regarding the mothers 'knowledge about children at risk to develop pneumonia, it was found that 48.8% of them mentioned that infant less than 6 months are more risky.

As regards to the mothers' knowledge about methods of transmission and causes of pneumonia, it is clear from the study results that the majority (90.4%, 95.2% respectively) of mothers said that modes of transmission was droplet infection and the main cause of pneumonia was common cold. Poor

ventilation, asthma, smoking, house animals, outdoor pollution malnutrition and low immunity were the other common causes of pneumonia as replied by 84.8%, 72.8%, 68%, 64.8%, 60%, 21.6% and 13.6% respectively of the mothers.

In relation to mothers' knowledge about management and prevention of pneumonia, table (4) highlighted that 87.2% of the mothers said that pneumonia is treated with antipyretics and antibiotics, followed by Oxygen therapy and steam inhalation as replied by 85.6% of them. More than two fifth (42.4%) of the mothers reported that there is no vaccine against pneumonia. Regarding to the methods to prevent pneumonia, the highest percentages of the mothers (92.8%, 87.2%, 71.2% &70.4% respectively) mentioned that protection from infection, avoidance of cold air, good ventilation and avoid air pollution were the main measures to prevent it.

Figure (1) showed that 77 .6% of the mothers had satisfactory level of knowledge while 22. 4% had un satisfactory level of knowledge about pneumonia. Figure (2)indicated that 80% of the mothers went to the physician as a first action toward the disease of their children. On the other, 10.4% of them went to pharmacist to get medications and 9.6% just administered antipyretics to their children.

Table (5) highlighted the care given by the mothers to their children as regards to fever, cough, and dyspnea. More than half (53.6%) of the mothers use antipyretics to decrease the child's fever. Cold compresses by tap water and using antipyretics were utilized by 40% of the mothers to reduce child's fever. For cough, 76.8% of the mothers went to physician to relief cough. As regards dyspnea, the same table proved that the vast majority of the mothers (96%) seek the physician advice when the child complains from dyspnea.

The study results illustrated that20% of diseased children gotten an immediate medical treatment, 32.8% of them gotten medical treatment after two days and 47.2% of children gotten medical treatment after more than 2 days. In relation to the causes of delayed management of the child's disease, It was found that the financial issues represented 71.1% of the causes, followed by knowledge deficit about the correct action (23.7%) then the distance from the hospital (2.6%) and difficulty of transportation(2.6%).

Figure (3) illustrated that the majority (82.4%) of the mothers in the current study had satisfactory level of total knowledge regarding care of children having pneumonia. Moreover, 17.6% of them had unsatisfactory level of total knowledge.

Table (6) showed that there was no statistically significant relation between total mothers' knowledge and their age, place of residence, level of education and mother's job ($p>0.05$). The same table revealed that the older, urban and employed mothers had satisfactory level of knowledge rather than the younger, rural and housewife mothers.

Table (7) documented that there was a statistically significant relation between the age of the child and mothers' total knowledge ($p<0.010$) at 7months. The mothers caring for children ranked 1-3 in their families gotten a satisfactory level of total knowledge with significant relation ($p<0.040$). On the other hand, there was no significant relation related to child's gender.

I was evident that there was a statistically significant relation between the previous history of pneumonia among children ($p> 0.05$) and total mothers' knowledge about pneumonia. The study results revealed that mothers' age, place of residence and mothers 'job had no statistically significant correlation with the mothers' total knowledge about pneumonia.

The mothers' educational level had a significant positive correlation with mothers' total knowledge about pneumonia ($p< 0.05$).

Table (1): Distribution of mothers as regards to personal data (N= 125).

Items	Personal Data	No.	%
Mothers' age\years	18- 23- 28- 33-	67 44 9 5	53.6 35.2 7.2 4
Mean±SD	22.9 ± 3.8 years.		
Educational Level	Illiterate	75	60.0
	Read and write	1	0.8
	Basic education	17	13.6
	Secondary school education	31	24.8
	University education	1	0.8
Mother's job	House wife	122	97.6
	Employed mothers	3	2.4
Place of residence	Urban	7	5.6
	Rural	118	94.4

Table (2) Distribution of personal data related to children (N= 125).

Items	Personal Data	No.	%
Child age / months	1-	77	61.6
	7-	24	19.2
	13-	6	4.8
	19-	10	8.0
	25-	4	3.2
	31- 36	4	3.2
Mean ± SD 8.67 ± 5.076 months			
Gender	Male	84	67.2
	Female	41	32.8

Table (3) Distribution of the mothers knowle dge about definition, sources of information and high-risk groups of pneumonia (N= 125).

Items	Mothers knowledge about pneumonia	No.	%
Definition	Chest infection	20	16.0
	Lower respiratory infection invading lungs	52	41.6
	Respiratory distress	1	0.8
	I don't know	52	41.6
Source of information	Personal experience	55	44.0
	Grand mother	4	3.2
	Neighbors	4	3.2
	Physician	55	44.0
	Mass media	4	3.2
	Physician & mass media	3	2.4
High-risk group	< 6 months	61	48.8
	< 1 year	24	19.2
	< 5 years	34	27.2
	All the above	3	2.4
	I don't know	3	2.4

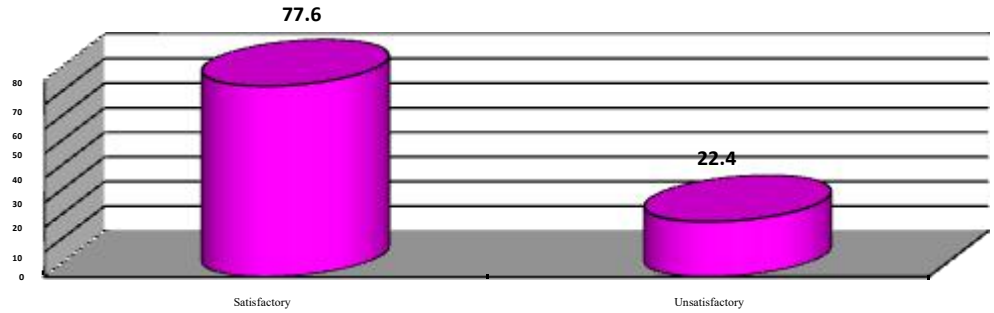

Fig. (1) Le vel of mothers' knowle dge about pneumonia

Table (4) Distribution of mother's knowledge about management and prevention of pneumonia (N= 125).

Items	Mothers' knowledge about pneumonia	No.	%
*Management	All the above	5	4.0
	Rest	19	15.2
	Warm fluids	55	44.0
	Intravenous fluids	101	80.8
	Cough syrup	104	83.2
	Oxygen therapy& steam inhalation.	107	85.6
	Antibiotics	109	87.2
	Antipyretics	109	872
Pneumonia vaccination	No	53	42.4
	I don't know	72	57.6
*Prevention	I don't know	4	3.2
	Personal hygiene	40	32.0
	Good nutrition and exclusive breast feeding	47	37.6
	Administration of obligatory vaccines	60	48.0
	Avoid air pollution	88	70.4
	Good ventilation	89	71.2
	Avoid cold air	109	87.2
	Protection from infection	116	92.8

* not equally distributed

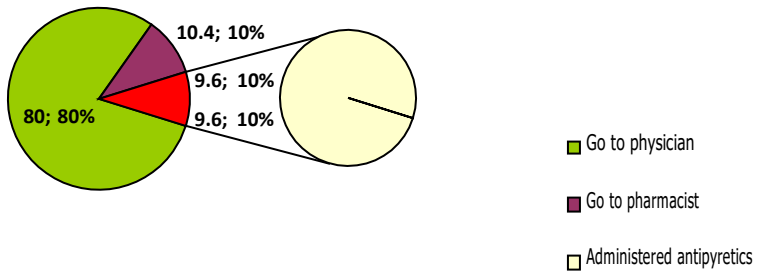

Fig. (2). Mothers' reaction to disease

Table (5): Distribution of mothers' care given to their Children as regards to fever,cough, and dyspnea (N= 125).

Items	Mothers' care given to their children	No.	%
Mothers' action when fever occur	Cold compresses by tap water only	8	6.4
	Antipyretics	67	53.6
	Cold compresses by tap water & Antipyretics	50	40.0
Mothers' action when cough occur	Go to physician	96	76.8
	Go to MCH	2	1.6
	Go to pharmacist	11	8.8
	Coughsyrup	5	4.0
	Provide warm fluids	2	1.6
	Go to pharmacist, coughsyrup & warm fluids	9	7.2
Mothers' action when dyspnea occur	Go to physician	120	96.0
	Go to MCH	1	0.8
	Go to hospital	2	1.6
	Put the child in semi setting position	2	1.6

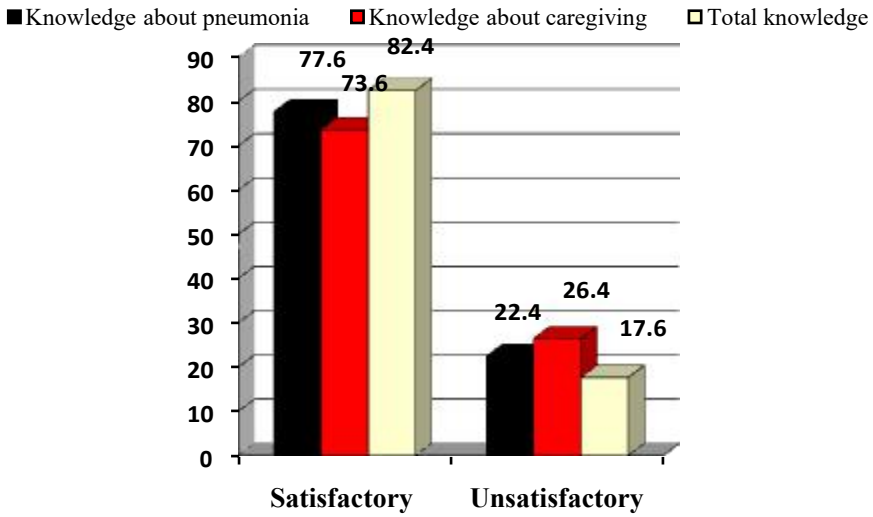

Fig. (3) Total score of studied mothers' knowle dge regarding care of children having pneumonia

Table (6): Relationship between total mothers' knowle dge and selected personal data.

Items	Personal Data	Knowledge about care giving				X^2	*P* – value
		Satisfactory		Unsatisfactory			
		No.	%	No.	%		
Age / years	18-	54	80.6	13	19.4	3.726	0.293 NS
	23-	29	65.9	15	34.1		
	28 -	6	66.7	3	33.3		
	33-	3	60.0	2	40		
Place of residence	Urban	7	100	0	0	2.660	0.103 NS
	Rural	85	72	33	28		
Level of Education	Illiterate	59	78.7	16	21.3	3.717	0.446 NS
	Read and write	1	100	0	0		
	Basic education	11	64.7	6	35.3		
	Diploma and secondary school	20	64.5	11	35.5		
	University education	1	100	0	0		
Mother's job	House wife	89	73	33	27	1.103	0.294 NS
	Government employee	3	100	0	0		

Table (7): Relationship between total mothers' knowledge and selected personal data related to children

Items	Personal data	Total knowledge about care giving				t	*P* – value
		Satisfactory		Unsatisfactory			
		No.	%	No.	%		
Age / months	1-	31	77.5	9	22.5	15.133	0.010*
	7-	49	80.3	12	19.7		
	13-	4	66.7	2	33.3		
	19-	6	60.0	4	4.0		
	25-	2	50.0	2	50.0		
	31- 36	0	0	4	100.0		
Gender	Male	63	75	21	25	X^2 0.258	0.611 NS
	Female	29	70.7	12	29.3		
Child's rank	1- 3	84	76.4	26	23.6	3.603	0.040*
	4-6	8	53.3	7	46.7		

NS= not statistical significant * Statistical significant at $p< 0.05$

Discussion

Pneumonia is defined as an inflammation of lung tissue due to an infectious agent. Pneumonia causes substantial morbidity in children worldwide and is a leading cause of death in children in the developing world. The incidence of pneumonia is the highest in children under 5 years of age and in recent years the incidence of complicated and severe pneumonia seems to be increasing (**Wojsyk-Banaszak & Bręborowicz, 2013**). The aim of the current study was to explore mother's knowledge regarding care of children having pneumonia less than five years.

As regards the personal data of the mothers and the child family, the current study results proved that three quarters of the mothers were illiterate and most of them came from rural areas. Which indicates that illiteracy rate among Egyptian females in rural areas is high. On the same line, the Egypt Demographics Profile (2014) assured that, the literacy rate among females was 65.8% compared to 59.4% in 2010. So, efforts of governmental and non-governmental organizations should focus on female' education in upper Egypt. The majority of children live in rural area. This is because almost hospital referral of acute cases to MUHOP for better facilities and equipment.

These findings were in agreement with findings reported in a previous study conducted in **Blgaum (India) by Kumar, et al. (2012)** to assess knowledge, attitude and practice about acute respiratory infection among the mothers of fewer than five children. They found that 43.3% of mothers were educated up to high level and their age ranged from 18-27 years old. On the other hand, **Ekure, et al. (2013)** assessed the knowledge of 107 Nigerian mothers about childhood pneumonia. They found that the majority (97 %) of them had at least secondary school education.

Pneumonia can occur at any age, although it is more common in younger children. Pneumonia accounts for 13% of all infectious illnesses in infants younger than 2 years. The results of the current study were in accordance to the above mentioned empirical evidences and demonstrated that pneumonia was common among male infants aged 1- 12 months. Similarly, an Egyptian study conducted by **Hussein and Elsamman (2011**) to construct, implement and evaluate the effect of an intervention of chest physiotherapy on improving chest airways among 60 infants suffering from pneumonia.

They concluded that the mean age of the infants was 4.93±2.99 months and 70% of them were males. The same findings were reported in a recent Egyptian study Hussein (2014) concluded that 64% of infants in the study group were males and their mean of age was 5.40±1.893 months.

Eighty percent of children in the current study were under weight. This could be due to malnutrition of child during disease period and the long duration between time of onset and time management of pneumonia. The empirical evidence and previously cited systematic review and meta-analysis by **Jackson et al. (2013)** to identify the risk factors for severe acute lower respiratory infections in children in developing countries. They commented that there was an association between being underweight and occurrence of severe acute respiratory tract infections among pediatric patients.

Several previous studies have shown that optimal breastfeeding practices, including e xc lusive breastfeeding during the first six months of life and continued breastfeeding until 24 months of age, are critical for reducing the burden of pneumonia among infants and young children **(Gupta, 2012).**The protective effect of human milk against respiratory infection is attributed to its numerous immunobiological components (**Lamberti et al., 2013**). More than two thirds of children in the current were breast fed but about half of them had given breast-feeding for less than 4 months. These results may increase the risk for occurrence of pneumonia. According to Egypt **Demographic and Health Sur ve y (2010**), the early in itiation of breast feeding was found among 56% of the mothers and the e xclusive breast feeding (up to 6 months) was 29%.

About two thirds of children in the current study did not have history of pneumonia. Only half of the one third got their treatment at hospital in the previous episodes, which may be due to financial problems or traditional cure trails. These findings support current evidence by **Bennett and Steele (2015)** they reported that in children with evidence for recurrent pulmonary infections, a careful history to determine the underlying cause is needed. The recurrent nature of the infections may be unveiling an innate or acquired immune deficiency, an anatomic defect, or another genetic disease (cystic fibrosis, ciliary dyskinesia).

The main sources of the mothers' information about pneumonia were physician, personal experience and socialization, which represented in current study as the grand mothers and neighbors, seems to be unsuccessful to transform the knowledge about pneumonia. Mass media such as television programs can play an important role in disseminating knowledge regarding pneumonia among rural mothers.

The minority of the mothers completely knew the high risk group and causes of pneumonia. It is important to improve knowledge about causes of pneumonia as a preventive measure. Majority of mothers in the current study, similar to most pneumonia surveys worldwide, knew that e xposure to cold and change in weather was the commonly cited causes for pneumonia by mothers. This reflects the widely held public views that pneumonia results from e xposure to cold air. This view has been reported among Nigerian mothers who participated in a previous study **Ekure et al. (2013**) who e xpla ined why mothers employ warmth producing measures as treatment for pneumonia.

On the same conte xt, a study held **Ferdous, et al. (2014)** to describe mothers' perception about signs and symptoms, causes of the illness, and healthcare seeking behaviors related to pneumonia and express the major modifiable barriers to seeking timely treatment when their under-5 children

had pneumonia in rural Bangladesh. They found that mothers described pneumonia as a serious life threatening disease in young children but most of the mothers could not diagnose whether their child had pneumonia or not. Environmental factors such as dust particles, spread from coughing mother, and drinking cold water or playing with water were perceived as the causes for pneumonia. Most of the rural mothers did not have knowledge about severity of childhood pneumonia.

The current study results evident that the relatively high percentage of the mothers completely answered questions related to seasonality, clinical manifestations, management and prevention of pneumonia. In Egypt, **Elabbas y and Semary (2013)**who studied the seasonal pattern for under five children mortality, they concluded that whereby peak of respiratory system diseases have been observed during winter.

The majority of mothers knew that tachypnea; fever, crackles, tiredness and nasal obstruction were manifestations of pneumonia. In a similar study **Ekure, et al. (2013)** reported that prior to the study, 15% of the mothers of children with pneumonia had not heard about pneumonia. About half of the mothers correctly identified fast/difficult breathing as suggestive of pneumonia. Besides, the total score of mothers' knowledge was low. The same e xplanation was reported by **Uk waja and Olufemi (2010)** to investigate mothers' knowledge of signs and symptoms of pneumonia among children in Nigerian district. It was found that only 23% were very familiar with the cardinal signs and symptoms of pneumonia, 58% had scanty information and 19% had no knowledge.

The majority of mothers knew that antibiotics, oxygen therapy and steam inhalation, cough syrup were used to manage pneumonia. As regards prevention of pneumonia, the highest percentage of the mothers reported that protection from infection, cold air avoidance, good ventilation, administration of obligatory vaccines can prevent pneumonia. On the same context, **Ekure, et al. (2013)** concluded that minimizing exposure to cold and wearing warm clothes were the two commonest reported ways of preventing pneumonia (75.8% & 49.5% of the mothers respectively). In contrast, hand washing, e xclusive breastfeeding and limiting e xposure to sick persons with common cold were the least mentioned.

Moreover, recent empirical evidence and previously cited cross sectional study **Agarwa and Bajpai (2015)** to assess the 256 caregiver's knowledge and recognition of pneumonia in children under five years of age. They found that 74.1% of the mothers indicated prevention from e xposure to the cold of child or mother as one of the preventive measure. Immunizations as a preventive measure were cited by only 11.1% of the caregivers.

Similarly, in their descriptive cross sectional study on **Memon, Shaikh, Pandhiani and Us man (2013)** 188 mothers of children with pneumonia in Pakistan. To determine the mothers' perceptions regarding pneumonia in children and the home remedies used by them to treat pneumonia in children. The study results revealed that fast breathing and chest in-drawing were most commonly reported symptoms for pneumonia (59.4%). Majority of the mothers (94.4%) were using two or more home remedies for their children. Honey was the most commonly utilized remedy for pneumonia (82.4%), followed by green tea (44.7%) and Vicks massage (43.2%).

It was concluded from the results of the current that more than three quarters of mothers had satisfactory level of knowledge about pneumonia. In a cross sectional study conducted Kumar, **Hashmi, Soomro and Ghouri (2012)** in Pakistan on 1000 mothers

to evaluate the health seeking behavior of mothers, regarding acute respiratory infections (ARI) in under five children. They found that 72% of the mothers had knowledge about ARI and could recognize it while 28% mothers had no knowledge about ARI. **Ferdous, et al. (2014)** reported that most of the rural mothers who participated in their study did not have adequate or appropriate knowledge or perception about childhood pneumonia and did not seek proper care even when their child was suffering from pneumonia.

Regionally, a recent descriptive study conducted in Saudi Arabia held **Abusaad and Hashem (2014)** to assess mothers' learning needs regarding pneumonia among children less than five years. The study concluded that 75% of mothers have good level of knowledge and as well as 64.3% of mothers have fair level of perception regarding pneumonia among their children. In spite of this, the recurrence and frequent hospital admission of children with pneumonia was noticeable particularly among mothers of young age. Agarwa and **Bajpai (2015)** in their study found that mothers' knowledge about childhood pneumonia is very low. They recommend health education efforts to be implemented both at household and community level to increase the awareness about childhood pneumonia.

Early detection and identification of a child with pneumonia at home allows for prompt referral to health facilities where administration of appropriate antibiotics increases the probability of a better outcome. This strategy of reducing pneumonia deaths takes a greater significance in developing countries where potent vaccines against streptococcus pneumonia and Haemophilus influenza are not routinely available (**Johnson et al., 2010**). The results of the current study were in accordance to the above mentioned empirical evidences and demonstrated that three quarters of mothers had satisfactory knowledge about care giving to their children with pneumonia.

Tachypnea and fever were the common clin ical manifestations reported among the majority of children. Mothers did not paid attention to the signs of respiratory distress appeared on their children. This could be interpreted as because cases of childhood pneumonia are commonly preceded by nasopharyngeal infection (common cold) which only requires supportive care at home, failure to recognize fast/difficult breathing as a complication of common cold requiring prompt medical attention.

The results of the current study revealed that only two of each five mothers apply both cold compresses and antipyretics to decrease the child's elevated temperature. This finding was consistent with **Oshikoya and Senbanjo (2008)** who assessed the mothers' knowledge and ability to recognize fever in their child, as well as management in stituted at home. It was found that 66.7% managed the fever at home. Home treatment was majorly by reducing th e clothing and exposing the child to air, tepid sponging, and use of antipyretics.

Recently, **Jamshid, Mostafa and Hossein (2014)** surveyed 240 Iranian mothers about knowledge, perception and management of fever in their children. In this study, 46% of the mothers treated febrile children with acetaminophen or ibuprofen. Fifty-eight percent of mothers perceived a risk of convulsions in children with fever if it is untreated. Fifty-five percent of mothers think that teething causes fever. Also, their knowledge is poor and the temperature is not measured accurately.

Cough and difficulty in breathing are common problems in young children. The causes range from a mild, self-limited illness to severe, life -threatening disease. Most episodes of cough are due to the common cold, each child having several episodes a

year. The commonest severe illness and cause of death that presents with cough or difficult breathing is pneumonia). The majority of mothers in the current study, preferred treatment as advised by physician, in cases of cough and dyspnea. This showed that most of mothers aware of the seriousness of the disease.

In the current study only one-fifth of children with pneumonia gotten an immediate medical treatment. More than two thirds of the mothers expla ined this delay in seeking medical treatment that the place of hospital was far. Financial problems and unawareness of correct action were also, reported by few of mothers. The current study results were in accordance with the findings of study by **Memon, et al. (2013)** the study concluded that more than half of the mothers (50.9%) seek health care facility's help within two days; while there was a delay of up to three days in 33.9% of the mothers.

For instance **Kumar, Hashmi, Soomro and Ghouri (2012)** concluded that 36% the mothers who participated in their study started home remedies while 64% visited a doctor. **Ferdous, et al. (2014)** found that three common barriers faced by the mothers to seek health care facility to manage their child pneumonia in proper time. Were as follows: illness was not perceived as serious enough or distance from healthcare facility or lack of money at household for seeking treatment outside.

On the same line, a case-series study conducted by **Källander et al. (2008)** to review individual case histories of children who had died of pneumonia in rural Uganda and to investigate why these children did not survive. Cause of death was assigned for 27% of children with pneumonia. Most were taken for care outside the home, 36% of whom first went to public hospitals. The study concluded that delays in seeking care and low quality of care for children were the major cause of death among those children with pneumonia.

In a systematic review and meta-analysis done **Lamberti, et al. (2013)** to quantify the protective effects of breastfeeding exposure against pneumonia incidence, prevalence, hospitalizations and mortality. The study results documented that suboptimal breastfeeding elevated the risk of pneumonia morbidity and mortality. In particular, pneumonia mortality was higher among not breastfed compared to exclusively breastfed infants. They emphasized the importance of breastfeeding during the first 23 months of life as a key intervention for reducing pneumonia. The results of the current study were in accordance to the above mentioned empirical evidences and demonstrated that about three quarters of mothers satisfactorily described type of food during disease.

In the current study, there was no clear relation between age of the mother, place of residence and care giving to children with pneumonia. The mothers' educational level had a significant positive correlation with mothers' total knowledge about pneumonia. It was noticed that Urban and employed mother had satisfactory level of care giving activities to children more than rural or house-wife mother. On the other hand, highlighted that low maternal age had association with inadequate knowledge level about care of children with pneumonia.

In another study **Par vez, Wiroonpanich and Naphapunsakul (2010)**aimed to evaluate the effects of the educational program on child care knowledge and behaviors of 50 mothers of children aged under five years with pneumonia. It was proved that educating the mothers was of utmost importance in good child rearing practices.

The current study results revealed that there was no statistically significant

correlation between children's age, gender, child's ranks or previous episodes of pneumonia. Although pneumonia was slightly higher among male children. In an Egyptian cross sectional study held **Montasser, Helal, and Rezq (2012)** to study the problem of ARI according to integrated management of childhood illness guidelines and find its relation with different related factors. The study finds proved that ARIs were significantly related to the age of the child, family size, and history of immunization.

Conclusions

It was concluded from the current study results that the highest percentage of the mothers had satisfactory level of total knowledge regarding care of children having pneumonia. It was concluded also that mothers' age, place of residence and mothers' job had no statistically significant correlation with the mothers' total knowledge regarding care of children having pneumonia. The mothers' educational level had a significant positive correlation with mothers' total knowledge about pneumonia. It was found that urban and employed mothers had satisfactory level of knowledge rather than the younger, rural and housewife mothers.

Recommendations

On the light of the findings of the current study, the following were recommended:

- Pediatric nurses should educate mothers about dangerous signs of pneumonia, ways of prevention and the importance of early medical seeking of disease.
- Health education sessions and awareness campaigns about pneumonia and how mothers to deal and mange their children with pneumonia especially in rural remote areas are mandatory.
- Heath care settings should emphasize the importance of exc lusive breast feeding, good nutrition of children and well ventilated housing because it considered the coronal stone to fight pneumonia among children.
- Establishing educational centers and hot lines for public awareness about childhood pneumonia.
- Future research studies should be done to investigate the beliefs and perceptions that hinder early detection and prevention of pneumonia.

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