Effect of Instructional Guidelines on Nurses' Knowledge and Practices Regarding Care for Infants with Bronchitis

Amira Adel Mohammed[1], Yasmen Adel Mohammed [2]

(1) Lecturer of Pediatric Nursing, Faculty of Nursing, South Valley University, Qena, Egypt

(2) Lecturer of Pediatric Nursing, Faculty of Nursing, Mirs University for Science and Technology, Egypt

Abstract

Background: Bronchitis is acute or choric inflammation of the large airway passages and lungs, which increased mortality rate among infant. The study **aimed** to evaluate the effect of instructional guidelines on nurses' knowledge and practices regarding care for infants with bronchitis. **Design**: A quasi-experimental design was applied; this study was conducted at inpatient pediatric department at Benha university hospital affiliated to Benha Governorate. **Sample**: A purposive sample of 43 nurses and 36 infants hospitalized with bronchitis. **Tools**: Structured interview questionnaire and follow up observational checklist. **Results**: this study reflects, a highly statistically differences for mean scores pre/post-test for nurses' knowledge and practices regarding care for infants with bronchitis. **Conclusion**: nurses' knowledge and practices regarding care for infants with bronchitis were improved post implementing the instruction guidelines than before. **Recommendation**: Instructions guidelines regarding care of infants with bronchitis should be periodically in pediatric inpatient departments in hospitals.

Keywords: Knowledge, Practices, Instruction guidelines, Care, Bronchitis

Introduction

The nurses are the first persons who responsible for caring the hospitalized infants each psychological or physiological care. Moreover, it is very important to apply instructional guidelines that improve nurses to have proper knowledge and practices for promoting the care for hospitalized infants **(Vandana, 2019).**

Respiratory tract infections (ARI) were considered as highest health problems particularly acute disorders and it is may be increased the morbidity & mortality rate in many countries. A biggest problem for developing countries is increased the morbidity & mortality rate from ARI in infants at the first year of life **(Bansal, 2017)**.

Upper and lower respiratory infections can be the initially causes of increased mortality rate for infants less than-two years, for an estimated just about three million childhood died globally. Contributes to one-fifths of all less than- four deaths in the developing countries which is around 10 million annually **(Scott, 2018).** The ratio of infants with acute respiratory infections spread for more than 75 % in urban and less than 40 % in rural at Egypt **(Senarath, 2018).**

The most common respiratory tract infection among infants is bronchitis, that a major infectious cause of infant's deaths worldwide. In 2019, bronchitis is leading to death for around 15% of infants at the first year of life **(Kanchan, 2020).**

The bronchitis is an inflammation of the lung bronchial tubes that carry air to and from the two lungs. Infants who have bronchitis have cough with thick mucus, which can be discolored. Bronchitis may be acute or chronic. The most causative micro- organism is for bronchitis is Mycoplasma Pneumonia, Streptococcus and Haemophilus influenza **(Grover, 2019).**

The causative factors of bronchitis are respiratory syncytial were 75%, while15% were rhinovirus **(Chisti, et al., 2018).** It usually affected the infants at the first year of life. In bronchitis the essentially manifestations were fever, dry cough, sore throat and dyspnea, tachycardia and tachypnea, most infants have two to six attacks of acute respiratory infection every year, which could be complicated by bronchitis **(Hug, 2019).**

The clinical manifestations' for bronchitis are slightly fever, chills, loss of appetite and vomiting, runny nose, wheezing, sore throat,

chest pain, dyspnea, dry cough and general fatigue. These manifestations were disappeared from one to two weeks. While the dry cough may continue from three to four weeks **(Fathie, 2017).**

Severe bronchitis management need infant hospitalization for the medical and nursing management including oxygen therapy, airway suctioning, replacement intravenous fluid, good nutrition management and closed observation. If bronchitis early diagnosed and early managed, the infant had a good prognosis. Therefore proper care of infants with bronchitis is good to decrease the incidence of complications. So the incidence rate can be decreased by give for the nurses sufficient and good knowledge regarding many aspects regarded bronchitis care such as, definition, etiologies, trigger factors, signs & symptoms, preventive measures and the complications and the medical treatment **(Hug, 2019).**

Treatments of bronchitis may be included both antibiotics & antiviral medical therapy, according to the causative factors, if it was early diagnosed by appropriate time, and medical therapy may be specified to avoid the secondary infections and complications. While bronchodilators and epinephrine are consider as supportive management **(Darmstadt, 2018).**

The most effective methods for caring the hospitalized infants with bronchitis, with supporting nurses by adequate knowledge regarding competent practices regarded, good hygiene by recurrent hand washing, avoiding direct contact with any infant who were ill, support infant by good & appropriate nutrition and give the proper instruction for nurses' regarding, avoid susceptible complications **(Parvez , 2019).**

Improving the nurses' knowledge and practices are very important related to the infant immunization schedule, increase nurses awareness about the main sources of infection regarded bronchitis **(Grover, 2019).** The nurses have very important roles toward increased the mothers knowledge about breast feeding during the initially six months for newborn is also very important in lowest the incidence ratio of infants' bronchitis, because breast milk had a good nutritional supplies and antibodies, which improving the infant immunity and needed for appropriate the infant growth and development **(Mersha, 2018).**

Instructional guidelines regarding care for infants with bronchitis are essentially role of nurses. Moreover the nurse is the most direct interactive person with the hospitalized infants and their parents. Instructional guidelines should include basic clarification regarding bronchitis as the causes, signs and symptoms for bronchitis, complications, preventive ways and the proper medical lines regarding bronchitis **(Madhu, 2019).**

The study significance:

The infant health challenges in Egypt are more difficult than the present in any country. According to the Health Survey and Egyptian Demographic (2016), the mortality rate of infant's in Egypt were15/1000 infants, while infant mortality in the poorest areas in Egypt were 25/1000 infants **(UNICEF Children in Egypt, 2017)**, which clarify the significance of care with infant for lowest this mortality rate by providing the appropriate care for these infants. There is decreasing in the national studies that had examined the nurse's knowledge and practices regarding care for infants with bronchitis

The study aim

The study was aimed to evaluate the effect of instructional guidelines on nurses' knowledge and practices regarding care for infants with bronchitis. Through:

1. Assessing of nurses' knowledge and practices regarding care for infants with bronchitis.
2. Designing and implementing instructional guidelines based on the nurses' knowledge level and practices regarding care for infants with bronchitis.
3. Evaluating the effect of instructional guidelines on nurses' knowledge and practices regarding care for infants with bronchitis.

Hypothesis: The nurses' knowledge and practices regarding care for infants with bronchitis, will be improved after implementing the instructional guidelines than before

Methods

Research design

A quasi-experimental design used with a single group**..**

The study settings

The current study conducted at inpatient pediatric department at Benha university hospital affiliated to Benha Governorate, where large numbers of pediatric nurses and infants hospitalized with bronchitis.

Sample and sample size

Sample:

A convenient sampling of 43 pediatric nurses who working in the previously mentioned setting and a purposive sample of 36 infants with bronchitis whose were admitted at pediatric inpatient department was included in the sample.

Inclusion criteria for the sample:

- The inclusion criteria for the nurses included: Nurses were introducing the direct care for infants with bronchitis.
- Infants diagnosed with bronchitis of both genders and free from any congenital anomalies to avoid further complications for infants.

Tools of data collection:

Data was collected through two tools:

Tool I: Structured interview questionnaire: It was developed by the researchers after reviewing related literature by simple Arabic language. It consisted of 3 parts.

Part I: **Characteristics of studied nurses**. It included 43 nurses had items related to qualifications, age and attendance of previous training programs regarding care for infants with bronchitis and experience years**.**

Part II: Characteristics of studied infants: It included 36 infants diagnosed with bronchitis had items related to age, gender and residence.

Part III; Nurses' Knowledge regarding care for infants with bronchitis (pre /posttest): This part used to assess nurses' knowledge regarding bronchitis pre/post instructional guidelines for the nurses. It was included 60 questions multiple choice (MCQ). MCQ covered definition (4 questions), signs & symptoms (15 questions), etiologies (5 questions), complications (8 questions), medical treatments (9 questions), management of bronchitis (5 questions), management of fever (7 questions), and prevention ways of bronchitis (7 questions).

Scoring system for knowledge:

Scoring items	Score
Poor	0
Average	1
Good	2

Total scoring system for nurse's knowledge

- Adequate knowledge: > 60%, score 71-120

- Inadequate knowledge: ≤ 60%, score 1-70

Cronbach's alpha test was used to test the reliability of mothers' knowledge which was reliably at (r = 0.80).

The validity of tools:

The tools were reviewed by three pediatric nursing professors, reviewed the tools for comprehensiveness, clarity, understanding, easiness and applicability. After that, the recommended modifications were done.

Tool II: Observational checklist for nurses' practices regarding care for infants with bronchitis (pre /posttest). It was designed by the researchers, after review the related literature. It consisted of 120 statements related to nurses' care for infants with bronchitis**.** It was divided into 8 categories; observational checklist to assess nurses' practices during hand washing (15 statements), during putting on and removing protective infant

equipment (12 statements), checking for sputum color (18 statements), do chest physiotherapy for the infants (13 statements), increased oral warm fluid (20 statements), Proper nutrient (18 statements), checking for cough sound (12 statements), practices for management fever (12 statements) for infants with bronchitis.

Scoring system for practice:

Scoring items	Score
Incompetent	0
Competent	1

The total score of checklists were 120 grades categorized into:
- Incompetent ≤85%, score 1-101
- Competent : >85 %, score 102-120

This tool reliability was estimated by utilizing test retest test for 2 weeks apart between them. Then Cronbach' alpha was calculated in between the 2 scores and it was 0.85, and 0.897 of both knowledge and practice tools respectively.

Instructional guidelines program: Construction the instructional guidelines

Ethical considerations

After the researchers were obtained the approval of the Ethical Scientific Research Committee from Faculty of Nursing, South Valley University, Egypt and the approval from the directors of Benha University Hospital affiliated to Benha Governorate, the pilot was done. Written informed consent from nurses was taken and their participations were voluntary. Anonymity and confidentiality were maintained. At the first interview the researcher were explain the aim of the study for nurses were informed by the researchers that no known risks would be associated with the participation or non-participation in the study.

Pilot study

A pilot study was carried out for 10% from the total nurses were 4 and 3 infants not included in the study sample for applicability and clarity for the study tools and the time which will needed for each nurse to fill the questions.

program for nurses' knowledge and practices regarding care for infants with bronchitis. The demonstration of instructional guidelines in this study was developed by the researchers. The instructional guidelines program were designed after assessed the actually nurses' knowledge and practices through reviewed the related literature and then evaluation was conducted. During implementing the instructional guidelines, the researchers utilized different teaching methods such as; lectures, group discussion, demonstration, power point presentation and posters, finally booklet by adequate knowledge and proper practices regarding the infants with bronchitis, which was developed by the researchers in simple Arabic language was distributed for the nurses. Three professors of pediatric nursing were revised the instructional guidelines booklet for clarifications and validity. After that, the researchers were done the importance modifications for finalized form of instructional guidelines booklet. Nurses' knowledge and practices were evaluated pre/post implementing the instructional guidelines by the study tools.

Procedure

Implementation phase

The study was carried out for collecting the data and implementing the instructional guidelines, at the second week of June (2020) up to the end of December (2020). The researchers were visited the study setting three times weekly (Saturday, Monday and Wednesday) from 10:00 am to 2:00 pm. The researchers were introduced herself for the nurses and begin to give the complete explanation for study aim; the researchers were collected the nurses consent to include in the study and interviewed each nurse individually in separate room. All recruited sample specify 43 nurse and 36 infants hospitalized diagnosed with bronchitis utilized as a single group. The researchers were collected the nurses and infants characteristics, after that begun to assess their knowledge's level regarding care for infants with bronchitis, pre/post implementing the instructional guidelines. A pretest distributed for the nurses after that, the researchers were filled the follow up

observation checklist during the nurses introduces the care for the infant with bronchitis. The instruction guidelines were implemented according the actual nurses' needs. The instruction guidelines were covered the practical & theoretical parts, regarding care for infants with bronchitis. It was aimed for improvement the nurse's knowledge and practices about care for infants with bronchitis. Nurses participants were divided to ten small groups, the instructional guidelines were conducted around 10 sessions, every session take (within 45-60 minutes for every session) three sessions weekly, at the morning shift. It was given over a period of 7 weeks. Different teaching methods have been utilized by the researcher during the instructional guidelines implementation as; lectures, group discussion, demonstration, posters and at the end the researchers distributed the hand-out booklet about the instructional guidelines about care for infants with bronchitis.

Evaluation phase

After implementing the instructional guidelines, the researchers were used the same pretest from the study tools, for the posttest done, to evaluate the nurses' knowledge and practices that to evaluate the effect of instructional guidelines. The study conclusion and recommendations were distributed to the nurses. The booklet of instructional guidelines is available at inpatient pediatric department at Benha University Hospital affiliated to Benha Governorate.

Statistical design

The data were illustrated and analyzed by utilizing the statistical package for social science (SPSS) version 20, was used to carry out the data analyses. Quantitative data were presented as mean and standard deviation (SD). While qualitative data were interpreted as percentage (%).and finally was used r-test for the differences. The significance was at p < .05.

Results

Table (1): Illustrated the distribution of the nurses' sample as regarded to the percentage distribution of the nurses' age < 30 years were 74.5 % and around half of them 46.5% were married. Also, the higher percentages of them around 85% were living at

rural areas. While 43.0% had bachelor degree at the educational level, more ever 86% of nurses' hadn't attendance previous training courses about infants care with bronchitis

Table (2): Illustrates that (41.5%) of the studied infants age ranging from one month to >1 year and showed that the mean age of the studied infants were 30.8 ± 2.1, there are represented females were (75 %) while males were (25 %), about more than half of them were (61%) living at rural areas

Table (3): Represent the nurses' knowledge regarding care for infants with bronchitis pre/post implementation of instruction guidelines mean scores, were on infant admission, during hospitalization and at infant discharge pre implementation of instruction guidelines were 4.81 ± 0.96, 4.72 ± 1.03 and 4.93 ± 0.99 respectively. While, the nurses' knowledge on infant admission, during hospitalization and at infant discharge post implementing the instruction guidelines the mean scores were, 8.81 ± 0.88, 8.88 ± 1.05 and 8.88 ± 0.88. It was revealed that implementation of instruction guidelines improved the nurses' knowledge regarding care for infants with bronchitis than before. The t-test revealed a significant difference between pre and post instruction guidelines implantation where, t (*-23.536) at p value (0.000).

Table (4): Represented the nurses' practices regarding care for infants with bronchitis total mean scored pre instruction guidelines implementation were (52.74 ± 15.68). While, total mean score for the nurses' practices post instruction guidelines implementation was competent to (112.42 ± 4.85) respectively. It was clarified the instruction guidelines were leaded to improve the competence nurses' practices regarding care for infants with bronchitis than before, where t test (*-25.591) at p value (0.000).

Table (5): Illustrated, the instruction guidelines were improved nurses' knowledge and practices regarding care for infants with bronchitis. The correlation revealed, the knowledge of suggested instruction basically was reflected adequate practices and remained the basic step toward the evidence based the instruction guidelines implementation about caring the infants with bronchitis.

Table1. Distribution of the studied nurses characteristics regarding care for infants with bronchitis (N=43)

Nurses' characteristics	No	%
Age		
1. < 30	32	74.5
2. 30 < 40	11	25.5
Mean ±SD		28.76±3.97
Residence		
1. Rural	36	85.0
2. Urban area	7	15.0
Educational level		
1. Bachelor	17	39.2
2. High educate	18	43.0
3. Less	8	17.7
Marital status		
1. <5 years	20	46.5
2. 5<10years	7	16.5
3. 10<15years	5	11.5
4. ≥15 years	11	25.5
Mean ±SD		7.31 ± 3.81
Attendance of previous training courses about infants care with bronchitis		
1. Yes	6	14
2. No	37	86

Table (2): Percentage distribution of the studied infants' characteristics (N=36)

Infants' characteristics	No	%
Age by months		
1. ≥ 1 month	15	41.5%
2. >1 year	21	58.5%
Mean ±SD	30.8 ± 2.1	
Gender		
1. Female	27	75%
2. Male	6	25%
Residence		
1. Rural	22	61%
2. Urban	14	39%

Table (3): Distribution of nurses' knowledge regarding care for infants with bronchitis pre/post implementing instruction guidelines

Knowledge questions	Pre -implementation instruction guidelines Mean ±SD	Total number=43(100%) Post- implementation instruction guidelines Mean ±SD	t-test	P value
1- Nurses' knowledge on infant admission	4.81 ± 0.96	8.81 ± 0.88	*-22.752	0.000
2- Nurses'' knowledge during infant hospitalized	4.72 ± 1.03	8.88 ± 1.05	*-20.653	0.000
3- Nurses' knowledge at infant discharge	4.93 ± 0.99	8.88 ± 0.88	*-19.184	0.000
Total mean scores of nurses knowledge	14.47 ± 2.45	26.58 ± 2.63	*-23.536	0.000

*Significance difference at nurses' knowledge pre/post instructions guidelines implementation

Table (4): Distribution of nurses' practices regarding care for infants with bronchitis pre/post implementing instruction guidelines

Practices statements	Maximum score	Pre -implementation of instruction guidelines Mean ±SD	Post- implementation of instruction guidelines Mean ±SD	t-test	P-value
		Total number=43(100%)			
1- Hand washing	15	7.16 ± 2.27	14.05 ± 0.90	*-19.704	0.000
2- During putting on and removing protective infant equipment.	12	6.37 ± 2.02	11.40 ± 0.66	*-15.868	0.000
3- Checking for sputum color	18	6.84 ± 3.15	16.98 ± 0.80	*-20.656	0.000
4- Do chest physiotherapy for their infant	13	5.88 ± 2.16	12.19 ± 1.01	*-18.263	0.000
5- Increased oral warm fluid	20	8.33 ± 2.35	18.93 ± 0.94	*-26.729	0.000
6- Proper nutrient	18	6.02 ± 2.27	17.12 ± 0.93	*-31.384	0.000
7- Checking for cough sound	12	6.81 ± 2.79	11.33 ± 0.71	*-13.120	0.000
8- Practice for management fever	12	5.33 ± 2.06	11.44 ± 0.83	*-18.091	0.000
Total mean scores of nurses' practice	120	52.74 ± 15.68	112.42 ± 4.85	*-25.591	0.000

*Significance difference at nurses' practices pre/post instructions guidelines implementation

Table (5): The correlation between pre & post instruction guidelines scores for nurses' knowledge and practices regarding care for infants with bronchitis

Total knowledge	Pre - instruction guidelines (N = 43)		Post- instruction guidelines (N = 43)	
	r	p-value	r	p-value
Total practices	0.945**	<0.001	0.395**	0.009

P < 0. 000 (Highly statistical significant difference)

Discussion

Discussion

The result of the present study supported the stated hypothesis, and the instructional guidelines is highly improved the knowledge and practices of nurses regarding care for infants with bronchitis. Nurses must be aware by the quality of infants care with bronchitis. Although the nurses had a knowledge regarding bronchitis management for infants, but hadn't competence regarding practice of the proper care. If nurses had form the proper knowledge, they must be taken benefits of these in a proper care and improve their practices on common upper respiratory tract infection and bronchitis, which decrease the incidence of communicable diseases and support in social reconstruction. Publishing various materials as knowledge at booklet or posters with proper and the basic concepts on bronchitis care could be given to expectant nurses and keep positive results with them certainly getting benefits from it *(Bansal, 2017).*

The present study aimed to evaluate the effect of instructional guidelines on nurses' knowledge and practices regarding care for infants with bronchitis.

According the age of the studied nurses, results of this study implied, their age < 30 years were 74.5% this finding harmonize with *(Mamata, 2019*) where, that 25.5% were in age 30 < 40years. Where 43.5% of the studied nurses' were high education and around 85.5% of them living in rural areas. On other hand 85% hadn't attended previous training courses regarded infants care with bronchitis

The present study confirmed, more than half of the studied infants were more than one month and third quarter of them were females and 61% living in rural areas.

The results of the current study revealed, after implementing the instruction guidelines for the nurses, had improvement in the knowledge level score than before instruction guidelines implementation. The change in infants care with bronchitis and nurses' knowledge level believed to be the result of the instruction guidelines session professionals. Therefore, increasing the morbidity ratio and mortality ratio of bronchitis reinforce the

mothers for accepting and presented and accepting the instruction guidelines session.

Improvement nurses' knowledge was considered as an essentially part for caring the infants with bronchitis. The role of instruction guidelines is improving the nurses' knowledge level and practices to improve the quality of care for infants *(Chistie, 2018)*. Furthermore, the current study results were presented, highly significant differences between nurses' total knowledge level regarded, definition, clinical manifestations, complications and line of treatment regarded bronchitis, pre/post instruction guidelines implementation. Moreover, **(Ghimire, 2019)** added that, improvement in the most nurses' knowledge level regarding care for infants with bronchitis post implementation had statistically significant.

The mean scores of nurses' knowledge regarding care for infants with bronchitis pre instruction guidelines implementation on admission, during hospitalization and at infant discharge were 4.81 ± 0.96, 4.72 ± 1.03 and 4.93 ± 0.99 respectively. While, the mean scores regarding care for infants with bronchitis pre instruction guidelines implementation were 8.81 ± 0.88, 8.88 ± 0.88 and 8.88 ± 1.05. That reflects improvement at the nurse's knowledge post instruction guidelines implementation than before implementation. This result was confirming by *(Mamata, 2019)* identified that; the one of causes for nurses' lack of knowledge might be lack of instruction guidelines.

From the nurses' sample, total mean scores of nurses' practices regarding care for infants with bronchitis, pre instruction guidelines were 51.74 ± 15.68, while post instruction guidelines were improved to 113.42 ± 4.85 respectively in compared pre instruction guidelines implementation, with statistical significant differences. This result was agreed by **(Daniel, 2018),** study done in 3 Iran hospitals at inpatient pediatric department to evaluate the nurses' knowledge and practices regarding care for infants with bronchitis, through implementation instruction guidelines: It was presented; the nurses' knowledge level & practices were improved and promoted post instruction guidelines implementation. It

clarified the instruction guidelines competency of the nurse's practices regarding care for infants with bronchitis.

The study were in the same line with **(Narila et al., 2019)** who reported improving on nurse's knowledge and practices regarded infant care through pediatric inpatient department and represent that outpatient clinics had significantly improvement nurse's knowledge and practices regarding care for infants with bronchitis.

Infants' lower respiratory tract infection is connected with low economic status and the process of poor of infant care and the evidence instruction guidelines practices that improve awareness regarded health care. Previous studies had reflected that hand washing practices were a basic in reducing the spread of micro- organisms which responsible for infant with bronchitis, that could lowest the incidence bronchitis above 58%. Air pollution, maternal illiteracy and lack of nurse's awareness by respiratory tract infection are trigger factors for bronchitis that confirmed with this study on the gap and the lack of a suitable concept for nurses regarding care for infants with bronchitis **(Ebrahim, 2019).**

Conclusion:

The present study was concluded, nurses' knowledge and practices regarding care for infants with bronchitis, after instructional guidelines implementation were improvement than before. So that, the results of the present study were comply with the study hypothesis.

Recommendations:

- Instructions guidelines regarding care of infants with bronchitis should be periodically in pediatric inpatient departments in hospitals

- Instructional guidelines regarding care for infants with bronchitis should be instructed to pediatric nurses at inpatient pediatric department.

- Replication of this study for the larger sample at the different areas for generalized the results.

References:

Bansal A., (2017): Zinc supplementation in severe acute lower respiratory tract infection in Children: A triple blind randomized placebo controlled trial, The Indian Journal of Pediatrics, Jan; 78(1), PP. 33-37. (3).

Chisti M. J., (2018): "Impact of lack of breast feeding during neonatal age on the development of clinical signs of bronchitis and hypoxemia in young infants with diarrhea," PLoS ONE, 10(6).

Daniel, B., Nagaraju, B., Padmavathi ,G.V., Bolouri, A., Zothanmawia, C., and Sahar, S. (2018): The Effectiveness of Structured Teaching Programmer on Care of Infant Patient with Central Venous Access Device Among Staff Nurses in Selected Oncology Hospital of Bangalore, International Journal of Medicine and Medical Science Research, 1(1): p: 12.

Darmstadt, G.L., Hussein, M.H., Peter, J.W., Rachel, A.H., Mohsen, L., & El-Said, M.A. (2018): Neonatal home care practices in rural Egypt during the first year of life Tropical. *Med Int Health* 12:783–797.

Ebrahim, M.Y. (2019): Assessment of nurses' knowledge regarding prevention of bronchitis for their infant, Un published thesis, Master degree, Faculty of Nursing, Cairo University, Egypt. pp 75 -81.

Fathie, S., Talaat, E., & Sadek, S.A. (2017): Hospital based study to assess knowledge, attitude, practice and problem of infant related to their respiratory disorders. *J Arab Board Health Special* 13:36–43.

Ghimire M., (2019): "bronchitis in South-East Asia Region. Public health perspective," Indian Journal of Medical Research, 4(135), pp. 459–468.

Grover, P., & Chhabra, P. (2019): Neonatal care practices in urban village, Indian Medical Gazette — JANUARY Delhi, *Indian J Pediatrics* 65:867–872.

Hug, L., Sharrow, D., & Zhong, K. (2019): United Nations inter-agency group for infant mortality estimation. Levels & trends in infant mortality, Available at: https:// data.unicef.org/wp-content/uploads/2018/09/UN-IGME-Child-Mortality-Report.

John, P., Eric, C., & Anne, R. (2013): Manual of infant care. 7th ed. Phladelphia: Lippincott William and Wilkins; 103.

Kanchan, B. RajKumari, Sylvia, D. & Gomathi, B. (2020): Effectiveness of an 'Instructional Teaching Programme' (ITP) on the Knowledge of infant Mothers regarding bronchitis, *IOSR Journal of Nursing and Health Science* (IOSR-JNHS) e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 2, Issue 2, PP 24-30 www.iosrjournals.org www.iosrjournals.org 24 | Page.

Madhu, K., Chowdary, S., & Masthi, R. (2019): Breastfeeding practices and newborn care in rural areas: a descriptive cross-sectional study. *Indian J Comm* Med 34:243–246.

Mamata Jena, (2019): Effectiveness of Information Booklet on Knowledge & Practice about Prevention of bronchitis among Mothers of Under Five Children IOSR Journal of Nursing and Health Science (IOSR-JNHS) e-ISSN: 2320–1959. p- ISSN: 2320–1940 .3(1). PP. 25-30 www.iosrjournals.org.

Mersha, A., Assefa, N., Teji, K., Shibiru, S., Darghawth, R., & Bante, A. (2018): Essential newborn care practice and its predictors among mother in Chencha District, South Ethiopia. PLOS One 13: e0208984. https://doi.org/10.1371/*journal.pone.*0208984

Narila, M. N., Yuli, A., & Yasuhide, N. (2019): Changing Knowledge and Practices of Mothers on prevention of bronchitis for their infant through mother class, Journal of Tropical Pediatrics, , 63, 440–446 doi: 10.1093/tropej/fmx010 Advance Access Publication Date: 3 March Original paper.

Parvez MM , Wiroonpanich2 W, Naphapunsakul M. (2019): The effects of educational program on child care knowledge and behaviors of mothers of infant under five years with bronchitis, Bangladesh Journal of Medical Science Vol.09 No.3 Jul'10,

Scott J. (2018): "The definition of pneumonia, the assessment of severity, and clinical standardization in the Pneumonia Etiology Research for Child Health study," Clinical Infectious Diseases, (54), supplement 2, pp. S109–S116. View at Publisher · View at Google Scholar

Senarath, U., Fernando, D., & Rodrigo, I. (2018): Infant care practices at home: effect of a hospital-based intervention in Sri Lanka. *J Trop Pediatr* 53:113–118

UNICEF Children in Egypt (2017): A statistical digest, UNICEF Egypt, Cairo. Accessed at: http://www.unicef.org/egyp

Vandana, (2019): Effectiveness of URTI preventive education program on recovery of children and practice of care givers. IOSR journal of nursing and health science. 6;2(2):31-35. Available from http://www.iosrjournals.org/iosr-jnhs/papers/vol2 issue2/F0223135.pdf? id=6986.