Anggota APPTI No. 002.115.1.05.2020
Anggota IKAPI No. 127/JTI/2018

FAKULTAS KEPERAWATAN UNEJ
Jl. Kalimantan No.37 Krajan Timur Sumbersari - Kec. Sumbersari -Kabupaten Jember
Jawa Timur 68121

ISBN 978-623-7973-20-1

The 4th International AgroNursing Conferences 2020

PROCEEDINGS

Optimizing the Role of Nursing and Health Professionals

November 24th 2020

FACULTY OF NURSING
UNIVERSITAS JEMBER
www.fkep.unej.ac.id Fakultas Keperawatan UNEJ fkep@unej.ac.id

Membangun Generasi Menuju Insan Berprestasi

PROCEEDING THE 4th INTERNATIONAL AGRONURSING CONFERENCE

"Optimizing the Role of Nursing and Health Professionals to Enhance the Health Care Quality in The New Normal Era"

UPT PERCETAKAN & PENERBITAN
UNIVERSITAS JEMBER
2020

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"Optimizing the Role of Nursing and Health Professionals to Enhance the Health Care Quality in The New Normal Era"

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ISBN : 978-623-7973-20-1

Penerbit :
Jember University Press
Jalan Kalimantan No.37 Jember
Telp. 0331-330224, Voip.0319
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GREETING MESSAGE

Bismillahirrohmanirrohim
Assalamualaikum Wr Wb
Good morning and best wishes

The Honorable, Rector of University of Jember
The Honorable, Dean Faculty of Nursing, University of Jember
The Honorable, All Speaker of the International Nursing Conference
The Honorable, Guests
The Honorable, Conference Committee
Dear All, All Participants of the conference

Thank God we praise the presence of Allah SWT, because of the blessing and grace, we all can be present in this place, in order to attend the International Nursing Conference. Solawat and greetings may still be delegated to the Great Prophet Muhammad SAW.

Ladies and Gentlemen,
As the beginning of this speech, I would like to say welcome to the third international nursing conference, with the theme " Optimizing the Role of Nursing and Health Professionals to Enhance the Health Care Quality in the New Normal Era".

In the era of globalization, nursing and healthcare are affected in a unique way. Although the important tenets of health remain unchanged, the evolutions of nursing knowledge are far beyond than previously thought to be. The advancement of technology has enabled human to find more curative possibilities and the latest in nursing process or medical therapy. Nevertheless, more work needs to be done due to new challenges in the era of industrial revolution and unstable economic climate. A more comprehensive approach is needed in order to adapt and improve the healthcare system. Today, health is not only the absence of illness but also the presence of wellness especially in the New Normal Era of COVID 19.

4th IANC 2020 aims to enhance health care quality amongst healthcare professional, scientist, practitioners and students by being a platform to share and disseminate knowledge, updates, research findings and experience for the benefit of mankind.

4th IANC 2020 will focus on multiple range of topics in nursing, medicine, surgery, science, health management and alternative medicine. It will include but not limited to these major areas: 1). Nursing: Medical and surgical nursing (Adult), Emergency and critical nursing, Gerontological nursing, Community nursing, Family health nursing, Mental health nursing, Pediatric nursing, Maternity nursing, Nursing leadership and management, Complementary and Alternative Medicine (CAM) in nursing, Education in nursing. 2). Clinical Sciences: Dentistry, pharmacology, toxicology, immunology, medical and surgical nursing. 3). Health sciences Nutrition, population health, community health, epidemiology and health prevention, biostatics.
To answer that question on November 26, 2020, we will discuss enhance the Health Care Quality in the New Normal Era with speakers from 5 countries namely:

1. Prof. Rozzano Locsin, Ph.D, RN, FAAN (Tokushima University, Japan)

2. Prof. Lin Perry, RN., MSc., Ph.D (University of Technology Sydney, Australia)
3. Assist. Prof. Dr. Samoraphop Banharak (Khon Kaen University, Thailand)
4. Dr Jane Brooks, PhD, RN SFHEA (The University of Manchester, UK)
5. Ns. Anisah Ardiana, M.Kep., PhD (Faculty of Nursing, Universitas Jember, Indonesia)

Ladies and Gentlemen
This conference is attended by students, health department delegates, academics, hospital and community clinic practitioners with a total of 350 participants.
This event can be held because of the support and efforts of all parties. Therefore, I would like to thank the Rector of University of Jember, Head of School of Nursing- University of Jember, Indonesian National Nurses Association (INNA) or PPNI, and all the committees who have worked hard to carry out this activity. I also thank to the sponsors who have worked with us so that this event run as expected. Amen.

We as the committee, apologize if there is any inconvenience during this event. Our hope that this activity can increase our knowledge that benefits all of us. Amen.

Before I end my speech, I want to say "when we interpret that today is an ordinary day, then we will come out of this room as an ordinary people, but when we interpret that today is a very extraordinary day, then we will come out of this room as a very wonderful person ".
Finally, please enjoy this conference, may Allah SWT always gives blessings to all of us. Amen

Wassalamualaikum Wr. Wb.

Chairperson

Ns. Kholid Rosyidi Muhammad Nur, MNS

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CHEST PHYSIOTHERAPY IN CHILDREN WITH PNEUMONIA: A LITERATURE REVIEW

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ABSTRACT

Background: Pneumonia is the cause of acute inflammation or infection lungs caused by infectious agents (bacteria, viruses, fungi, and aspirated objects foreign), which stimulates a response resulting in damage to the lung tissue (alveoli). Inflammation increases mucosal production so that it occurs cough reflex that occurs in children. The onset of a productive cough will accumulate the secretory output, but the child cannot independently take it out. It will result in more and more accumulated secretions attached to the lungs. Chest physiotherapy plays a role in cleansing accumulated secretions and improving respiratory status, thereby decreasing road resistance breath, improving gas exchange, and making breathing easier. Purpose: The literature review aims to explain chest physiotherapy on respiratory status Children under five with pneumonia with nursing problems ineffective airway clearance. Methods: A literature review using the PRISMA checklist and PICOS in selection determines inclusion criteria. How to collect data using several electronic databases, including Springer Link, PubMed, Science Direct, Taylor & Francis, and Scholar Total found 716, after screening from 2015-2020. One hundred sixty-three articles do not fit into the study area. After that, select items by title and abstracts totaling 147 articles. Articles other than in English and Indonesian, there is 1 article. And article number 9 is not full text. Total papers which can be reviewed totaling seven articles. Results: Children gave chest physiotherapy intervention under five with pneumonia or toddler age. Chest physiotherapy is carried out by administering 20-30 minutes of sessions with a frequency of 2-3 times a day. Awarded in morning and evening or before going to bed on condition that there are problems with status respiration and met inclusion criteria. Conclusion: Chest physiotherapy is significantly affected the respiratory status of children under five with ineffectiveness problems; airway clearance is more effective when combined with other methods such as with a combination of nebulation and infrared.

Keywords: Chest Physiotherapy, Pneumonia, Children

BACKGROUND

There are various kinds of diseases related to ducts breathing in the current era, one of which is pneumonia. Pneumonia is the primary cause of morbidity and mortality due to infectious reasons in children under five years of age, with most deaths occurring in developing countries (Sutcliffe et al., 2016). The number of deaths caused by AIDS, malaria, and tuberculosis tends to be lower than the number of pneumonia deaths in children (Getaneh et al., 2019). More than ten million new pneumonia cases in Indonesia are diagnosed each year (Saha et al., 2016).

This disease occurs because of an inflammation or acute infection of the lungs caused by infectious agents (bacteria, viruses, fungi, and aspiration of foreign bodies), which stimulates a response resulting in damage to the lung tissue (alveoli) (Scotta et al., 2019). Inflammation will result in increased mucosal production, a cough reflex that occurs in children. Early symptoms of pneumonia, usually children not having a cough. But after a few days, the child will experience a dry cough and turns into a productive cough. The onset of a productive cough will result in secretory production, but the child cannot independently take it out. It will result in more and more accumulated secretions attaches to the lungs, resulting in ineffective airway clearing problems. Based on the results of writing (Kaunang, 2016), it found that the highest frequency was at clinical features on auscultation were asphyxiated 148 children (93.7%), followed by the cough of 145 children (91.8%), it found that 142 children (89.9%). If this problem did not resolve accurately and immediately, it would bring new issues that are more severe and lead to death.

Pneumonia is a disease that is considered deadly because it is based on incidence. The incidence has increased every year. Each year there are 151.8 million cases of pneumonia in children that occur in developing countries. Severe pneumonia ranges from 10% and must be in medical treatment in health services. In developed countries, there are 4 million cases each year. So the number of pneumonia incidents reached 156 million cases globally (Sinaga, 2018). Based on the Indonesian Ministry of Health 2017 in Indonesia, pneumonia in children causes death among the ten biggest diseases each year. In Indonesia, the coverage of finding the percentage of pneumonia cases has increased since the 2015-2018. In 2015 it was 91.91%, in 2016 it was 94.12%, 2017 namely 97.30%, and in 2018 it is 100% (Kemenkes RI, 2018).

Individuals who develop pneumonia are caused by a decrease in the body's protection system against pathogenic organisms so that microorganisms are easy to attack. Type Bacterial pneumonia varies, but most are caused by bacterial species streptococcus pneumonia and Haemophilus influenza (Scotta et al., 2019). Microorganisms the cause of pneumonia enter the lung tissue through the upper respiratory tract leading to the bronchiolus, then into the alveolus and its surroundings by going through the Kohn axis, causing inflammation of the walls of the bronchi or bronchioles and alveoli. The microorganisms arrive at the alveoli resulting in the inflammatory process in the alveoli wall and surrounding tissue. The inflammatory process will blockage the bronchial lumen and accumulation of secretions so that the patient experiences a cough. It will create ineffective airway cleaning problems due to disability in children to clear secretions independently, resulting in airway obstruction (Suartawan, 2019). If it is not handled immediately, the child will experience difficulties in this inhaling oxygen from outside. The reduced oxygen supply to the body will be resulting in hypoxia.

Things you can do to prevent more severe complications such as their occurrence alveolar collabs, fibrosis, emphysema, meningitis, atelectasis, and other problems, then management is carried out. Besides giving nursing action by staff medical in the hospital, independent nursing actions can be done given a nurse or family member for ineffective airway clearance problems in pediatric pneumonia in chest physiotherapy. Chest physiotherapy is one nursing actions, either independently or in a combination consisting of several collections of techniques, consisting of postural drainage measures (positioning), vibrating (vibration), and percussion (clapping)) (Jauhar, 2013) in (Siregar & Aryayuni, 2019). The aim, the primary physiotherapy of the chest is to help cleanse accumulated secretions, repair respiratory status, thereby lowering airway resistance, increasing gas exchange, and make breathing easier (Gajdos 2010) in (Chaves et al., 2019).

From the above background, it can be concluded that the ineffectiveness of road cleaning breath has a significant impact on the condition of pneumonia patients, and there is a correlation regarding chest physiotherapy in children under five who have pneumonia problems.

METHOD

The method used in preparing the literature review was using the PRISMA checklist to determine the study selection and use the PICOS format to assess inclusion criteria. Secondary data sources obtained come from journals reputable both nationally and internationally on predetermined topics. Search literature in this literature review uses several electronic databases, including *Springer Link, PubMed, Science Direct, Taylor & Francis, and Scholar use words key to Chest Physiotherapy, Pneumonia in Children, Respiratory Status, Respiratory Rate, Oxygen Saturation, Sputum Removal.* Total found 716 filtered from 2015- 2020. There are 163 articles which are not according to the study area—after that, selecting articles with titles and abstracts totaling 147 articles. Items other than using language English and Indonesian, there is 1 article. And article number 9 is not full text. The total number of papers that can be reviewed is seven articles.

RESULTS

The place of research in the *literature review* was carried out in 4 countries, including in America, Saudi Arabia, Singapore, and Indonesia. for vital capacity and the BORG scale for dyspnea, the primary measurement and the second measurement using time clinical resolution, changes in respiratory rate and arterial oxygen saturation, and Respiration Assessment Breathing (mRDAI). In some studies, this was a pediatric patient breathing problem caused by pneumonia. Characteristics of respondents in Some of these studies are toddlers aged 1-5 years (Toddler) because they are very vulnerable to catch pneumonia. Gender characteristics of respondents are almost the same among men and women because the study is comprehensive.

Table 1 Theoretical Mapping Chest Physiotherapy in Children with Pneumonia

No.	Author	Title	Research Objectives	Research Design and Sample	Results
1.	(Lestari et al., 2018)	The combination of nebulization	The purpose of This study	Methods: This study was a quasi-	Results: There was a significant

		and chest physiotherapy improved respiratory status in children with pneumonia	aimed to determine the effectiveness of chest physiotherapy and nebulization in these children's respiratory status.	experimental study with a nonequivalent control group design before and after the test. Sample: Thirty-four respondents selected by consecutive sampling were divided into two groups: one who received nebulization and received nebulization with chest physiotherapy. The independent t-test was used to analyze the effects of chest physiotherapy and nebulization on the respiratory status of children younger than five years of age with pneumonia.	mean difference in patients' respiratory status after chest physiotherapy and nebulization (respiratory rate, and oxygen saturation) between the control and intervention groups (p = 0.000).
2.	(Mane & Memushaj, 2018)	The Effects of Respiratory Physiotherapy in Pneumatological Patients	This study aimed to identify respiratory physiotherapy's effects on patients with pneumatological problems, increasing vital capacity, and improving the	Methodology: This study is a prospective, experimental type, realized over six months from January to June 2017 at the Vlora Regional Hospital and Fizio Life Clinic with 40 patients	Results: Of the studied patients, the most affected were children in 50% of cases, and the highest prevalence was in men with 60% of cases. After physiotherapy, the respiratory rate normalizes, an

			patient's overall condition.	in the pediatric and pediatric wards. Diseases that are treated include bronchial asthma, bronchitis, and pneumonia. The rehabilitation protocol used was a postural and autogenic drainage technique twice a day for 20 minutes, and 30 minutes of Huffing & Puffing for kids. Measurements were used by spirometry for vital capacity and the BORG scale for dyspnea.	increase in vital capacity and a reduction in hospitalizations is observed.
3.	(Amin et al., 2018)	Pengaruh Chest Therapy Dan Infra Red Pada Pneumonia	Knowing the effect of therapy using Infra-Red and Chest Physiotherapy	Understanding the impact of treatment using Infra-Red and Chest Physiotherapy	There is a significant difference in the patient's breath rate per minute between before and after therapy as indicated by the p-value in the paired sample test (sig. 2-tailed) of 0.000, which is below the critical value <0.05
4.	(Abdelbasset & Elnegamy, 2015)	Effect of Chest Physical Therapy on Pediatrics Hospitalized	This study aimed to evaluate the effects of chest physiotherapy	Methods and Materials: A randomized controlled study was conducted at	Results: There was a significant difference in the median time to clinical resolution

		With Pneumonia	on hospitalized pediatrics with pneumonia.	the Pediatric University Hospital and Cairo University Hospital. Fifty children aged 29 days to 5 years hospitalized with pneumonia between October 2014 and January 2015 were obtained, 25 were randomly allocated to the study group (chest physical therapy and standard treatment for pneumonia), and 25 to the control group (standard treatment for pneumonia). only) without chest physical therapy). The primary measurement is the time to clinical resolution. Secondary measures are changes in respiratory rate and arterial oxygen saturation.	(4.0 vs. 7.0 days, p = 0.012). The study group had a more substantial respiratory rate (40 to 30 w / m vs. 39 to 34 b). / m) and in arterial oxygen saturation (93 to 98% vs. 93 to 95%) than the control group. Conclusion: It is concluded that chest physical therapy shows a significant improvement in hospitalized pediatrics with pneumonia.
5.	(Yuen Ling Hue, Lucy Chai See Lum, Siti Hawa	Safety, tolerability, and efficacy of LEGA-Kid mechanical	This study aims to determine whether mechanical CPT using the	Sample: Children aged five months to 5 years who were admitted and referred for	All 30 patients enrolled had a significant reduction in RR and mRDAI

	Ahma, Soon Sin Tan & Anna Marie Nathan, Kah Peng Eg, 2020)	percussion device versus conventional chest physiotherapy in children: a randomized, single-blind controlled study	LEGA-Kid® automatic percussion device is better than manual CPT in children with LRTI.	CPT from January to April 2017 were randomized to manual CPT or mechanical CPT with LEGA-Kid®. Methods: The results measured at pre-intervention and 2 hours post-intervention were respiratory rate (RR), oxygen saturation, and modified Respiration Assessment Instrument (mRDAI) scores.	scores post-intervention. There was an 8% reduction in RR for the manual CPT group (p = 0.002) and a 16.5% reduction in the mechanical CPT group (p = 0.0001), with a significantly larger reduction in the CPT group (p = 0.024). The mRDAI score decreased by 2.96 in the manual group (p = 0.0001) and 3.62 in the mechanical group (p = 0.002), without significant differences between groups. This study observed significant increases in RR, oxygen saturation, and mRDAI in patients undergoing manual or mechanical CPT.
6.	(Melati et al., 2018),	The Impact of Chest Physiotherapy on Respiratory Status of Children under Five with Pneumonia in Rsud Koja and Rsud Pasar	The purpose of This study is to determine the impact of chest physiotherapy on respiratory status, pulse / HR, and saturation	The research design used was a quasi-experimental study with a pretest and posttest without control. Consecutive sampling	The research analysis results showed differences before and after the intervention on HR and SaO2 with a significance of P = 0.001.

		Rebo Jakarta	oxygen / SaO2 children under five with pneumonia.	method sampling 35 the number of respondents in RSUD Koja and RSUD Pasar Rebo Jakarta	
7.	(Siregar & Aryayuni, 2019).	Effect of Chest Physiotherapy on Sputum Expenditure Children with Respiratory Disorders at the Children's Clinic of the Depok City Hospital	This research aims to determine the effect of chest physiotherapy on sputum expenditure in children at the Depok City Hospital.	This type of research used a quasi-experimental design with a one-group pretest-posttest approach with 11 respondents.	The results of the paired sample t-test analysis obtained a P-value 0.000 <alpha 0.025, which means that there is an effect of sputum expenditure in children with respiratory system disorders before and after chest physiotherapy, which is evident from the mean results between the presence of sputum and absence of sputum -0.73 there is a difference in the range between the lower value -1, 04107 to the upper value of -0.41347, which means that the sputum expenditure is smaller before the procedure when compared to after doing chest physiotherapy.

DISCUSSION

Pneumonia is an inflammation or acute infection of the lungs caused by infectious agents (bacteria, viruses, fungi, and aspiration of foreign bodies) that can stimulate a response resulting in damage to the lung tissue (alveoli). There are various types of pneumonia bacteria, but most are caused by types of bacteria streptococcus pneumonia and Haemophilus influenza (Scotta et al., 2019). Based on the results research, several nursing interventions or actions help clear sputum that obstructs the airway. One of the procedures is Chest Physiotherapy.

Chest physiotherapy is an essential adjuvant in treating most diseases deep breathing (Balachandran, 2005) (Chaves et al., 2019). Chest physiotherapy is one of the nursing actions, either independently or in a combination consisting of several collections of techniques, namely consisting of postural drainage measures (positioning), vibrating (vibration), and percussion (clapping) (Jauhar, 2013) in (Siregar & Aryayuni, 2019). The primary purpose of chest physiotherapy for children is to aid in cleansing accumulated secretions, thereby decreasing airway resistance, increasing gas exchange, and make breathing easier (Gajdos 2010) deep (Chaves et al., 2019). While according to research results (Gupta & Gupta, 2018), the goal of chest physiotherapy is to improve ventilation in respiratory diseases by various techniques with increasing muscle strength, which inspires and helps clear phlegm.

Based on research conducted by (Lestari et al., 2018), an intervention was done for about 30 minutes done two times a day, relevant mean differences in heart rate, respiratory rate, and oxygen saturation were found between the control and intervention groups. Although there is a correlation between age and heart rate, other characteristics (nutritional status, exclusive breastfeeding, vaccinations, duration of illness, and nebulizing drug content) does not affect heart rate, respiratory rate, and oxygen saturation. The combination of nebulization and chest physiotherapy is more effective than alone nebulization. It is essential to reconsider the variety of nebulization and physiotherapy chest to treat airway obstruction.

Previous studies revealed that one benefit of chest physiotherapy is to help reduce the number of days the child is hospitalized. Another research shows that passive techniques, such as percussion, vibration, and postural drainage (better known as CPT), reduce secretion and increase oxygenation. Chest physiotherapy is used in Passive treatment procedural settings for patients with bronchiolitis and pneumonia. One indication of chest physiotherapy is increased secretion—chest physiotherapy techniques have proven effective and safe.

These results are following previous studies that average oxygen saturation at toddlers improve after chest physiotherapy. Other similar studies explain that physiotherapy chest affects oxygen saturation. Another study in Brazil also revealed that patients who underwent chest physiotherapy had increased oxygen saturation. Chest physiotherapy, including postural drainage, vibration, and percussion.

According to research results (Yuen Ling Hue, Lucy Chai See Lum, Siti Hawa Ahma, Soon Sin Tan & Anna Marie Nathan, Kah Peng Eg, 2020), Results measured at pre-intervention and 2 Post-intervention hours were respiratory rate (RR), oxygen saturation and Instrument score Modified Respiratory Respiration Assessment (mRDAI). Every physiotherapy session lasts for 15-20 minutes, done two times a day. By obtaining results had a significant reduction in RR and mRDAI scores post-intervention. There is an 8% reduction in RR for the manual CPT group and a 16.5% reduction in Mechanical CPT.

Whereas in research (Mane & Memushaj, 2018), the intervention was carried out

twice daily for 20 minutes, the measurements were used with spirometry for vital capacity and the BORG scale for dyspnea. Of the patients studied, the most affected were children in 50% of cases, and the highest prevalence was in men with 60% of cases. After physiotherapy, the respiratory rate becomes familiar, the vital capacity increases and a reduction in hospitalizations was observed.

However, in the study (Abdelbasset & Elnegamy, 2015), the study group accepted chest physiotherapy three times daily with standard care for pneumonia. The control group received standard treatment for pneumonia alone without therapy chest physiotherapy. Each session lasts about 20 minutes. With the results, there have been differences were significant in terms of median time to clinical resolution (4.0 vs. 7.0 days), and the study group experienced more substantial increases in respiratory rate (40 to 30 beats/min vs. 39 to 34 beats/min) and arterial oxygen saturation (93) to 98% vs. 93 to 95%) than the control group.

The results of research conducted by (Holland et al., 2003) in (Abdelbasset & Elnegamy, 2015) he agreed in his study that postural & percussion drainage helps release mucus from the lungs, to remove airway secretions, increases chest sound, increases gas exchange, and reduces the work of breathing. While the research results (Hill and Webber, 1999) in (Abdelbasset & Elnegamy, 2015)mentioned that postural drainage & percussion is an effective therapy effective, improved breath sounds no additional breath sounds such as Ronchi, wheezing.

Furthermore, the results are also following the results of previous studies, as they found in their research that auscultatory post-percussion therapy resulted in improvement in breath sounds heard due to better air intake and oxygenation (Mathews ey al, 2009) in (Abdelbasset & Elnegamy, 2015)

As a result of research (Amin et al., 2018), there are differences in the respiratory rate of patients per minutes between before and after therapy, while for shortness of breath, patients experienced a significant reduction between before and after treatment, it can be concluded that it can improve the respiratory rate per minute and reduce hard to breathe.

Whereas in research (Siregar & Aryayuni, 2019), there is an influence spending sputum in children with respiratory system disorders before and after he performed chest physiotherapy as evidenced by the mean results between the presence of sputum and the absence of sputum -0.73 which is a difference in the range between the lower value -1, 04107 until the upper is -0.41347, which means that the sputum expenditure is smaller before action if compared after chest physiotherapy In research (Melati et al., 2018) after the chest physiotherapy action was carried out the difference between mean change in respiratory status in HR and SaO2 before the intervention and after the intervention.

CONCLUSION

Chest physiotherapy can be given to children under five with pneumonia or toddlers. An intervention was given for 20-30 minutes of sessions with a frequency of 2-3 times a day in the morning and evening or before bed. The proper chest physiotherapy technique is agar obtain maximum results to address ineffective road cleaning breath, namely doing postural drainage techniques, vibrating techniques (vibration), and percussion techniques (clapping). Effect of chest physiotherapy on children's respiratory status under five with problems ineffective airway clearance is more effective when combined with methods others such as with a combination of nebulation and infrared.

REFERENSI

Abdelbasset, W., & Elnegamy, T. (2015). Effect of Chest Physical Therapy on Pediatrics Hospitalized With Pneumonia. *International Journal of Health and Rehabilitation Sciences (IJHRS)*, *4*(4), 219. https://doi.org/10.5455/ijhrs.000000095

Amin, A. A., Kuswardani, K., & Setiawan, W. (2018). Pengaruh Chest Therapy Dan Infra Red Pada Pneumonia. *Jurnal Fisioterapi Dan Rehabilitasi*, *2*(1), 9–16. https://doi.org/10.33660/jfrwhs.v2i1.42

Chaves, G. S. S., Freitas, D. A., Santino, T. A., Nogueira, P. A. M. S., Fregonezi, G. A. F., & Mendonça, K. M. P. P. (2019). Chest physiotherapy for pneumonia in children. *Cochrane Database of Systematic Reviews*, *2019*(1). https://doi.org/10.1002/14651858.CD010277.pub3

Getaneh, S., Alem, G., Meseret, M., Miskir, Y., Tewabe, T., Molla, G., & Belay, Y. A. (2019). Determinants of pneumonia among 2-59 months old children at Debre Markos referral hospital, Northwest Ethiopia: A case-control study. *BMC Pulmonary Medicine*, *19*(1), 1–9. https://doi.org/10.1186/s12890-019-0908-5

Gupta, L., & Gupta, H. (2018). Physiotherapy for Respiratory Conditions. *Advanced Nursing & Patient Care International Journal Review Article*, *2018*(1), 180003. https://chembioepub.com/ANPCIJ/

Lestari, N. E., Nurhaeni, N., & Chodidjah, S. (2018). The combination of nebulization and chest physiotherapy improved respiratory status in children with pneumonia. *Enfermeria Clinica*, *28*, 19–22. https://doi.org/10.1016/S1130-8621(18)30029-9

Mane, E., & Memushaj, L. (2018). *Luisiana Memushaj*. *August*, 83–90. https://doi.org/10.5281/zenodo.1412109

Melati, R., Nurhaeni, N., & Chodidjah., S. (2018). Dampak fisioterapi dada terhadap status pernapasan anak balita pneumonia di RSUD Pasar Rebo Jakarta. *Jurnal Ilmiah Keperawatan Altruistik*, *1*(1), 41–51. https://akper-manggala.e-journal.id/JIKA/article/view/21

Saha, S., Hasan, M., Kim, L., Farrar, J. L., Hossain, B., Islam, M., Ahmed, A. N. U., Amin, M. R., Hanif, M., Hussain, M., El-Arifeen, S., Whitney, C. G., & Saha, S. K. (2016). Epidemiology and risk factors for pneumonia severity and mortality in Bangladeshi children <5 years of age before 10-valent pneumococcal conjugate vaccine introduction. *BMC Public Health*, *16*(1), 1–12. https://doi.org/10.1186/s12889-016-3897-9

Scotta, M. C., Marostica, P. J. C., & Stein, R. T. (2019). Pneumonia in Children. In *Kendig's Disorders of the Respiratory Tract in Children* (Ninth Edit). Elsevier Inc. https://doi.org/10.1016/B978-0-323-44887-1.00025-0

Sinaga, F. T. Y. (2018). Jurnal Ilmu Kedokteran Dan Kesehatan , Volume 5 , Nomor 2 , April 2018 Jurnal Ilmu Kedokteran Dan Kesehatan , Volume 5 , Nomor 2 , April 2018. *Jurnal Ilmu Kedokteran Dan Kesehatan*, *5*(April), 140–153.

Siregar, T., & Aryayuni, C. (2019). Pengaruh Fisioterapi Dada Terhadap Pengeluaran Sputum Pada Anak Dengan Penyakit Gangguan Pernafasaan Di Poli Anak RSUD Kota Depok. *Jurnal Keperawatan Widya Gantari Indonesia*, *2*(2), 34–42. https://ejournal.upnvj.ac.id/index.php/Gantari/article/view/856/591

Suartawan, I. P. (2019). PNEUMONIA PADA ANAK USIA 20 BULAN I Putu Suartawan. *Jurnal Kedokteran*, *05*(01), 198–206.

Sutcliffe, C. G., Thea, D. M., Seidenberg, P., Chipeta, J., Mwyanayanda, L., Somwe, S. W., Duncan, J., Mwale, M., Mulindwa, J., Mwenechenya, M., Izadnegahdar, R., & Moss, W.

J. (2016). A clinical guidance tool to improve the care of children hospitalized with severe pneumonia in Lusaka, Zambia. *BMC Pediatrics*, *16*(1), 1–10. https://doi.org/10.1186/s12887-016-0665-z

Yuen Ling Hue, Lucy Chai See Lum, Siti Hawa Ahma, Soon Sin Tan, S. Y. W., & Anna Marie Nathan, Kah Peng Eg, M. de B. M. M. C. (2020). Online first publication. *Engineering with Computers*, *20*(1), 1–16. https://doi.org/doi.org/10.11622/smedj.2020084