



The Relationship Of The Level Of Mother's Knowledge And Efforts To Prevent Upper Respiratory Tract Infectious Diseases In Children At Nuhon Health Center

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Abstract

Acute Respiratory Infection is an acute infectious disease that attacks one or more parts of the respiratory tract from the nose (upper tract) to the alveoli (lower tract). The main transmission of upper respiratory tract infections is through droplets that come out of the sufferer's nose/mouth when coughing or sneezing which contain bacteria. Some cases of upper respiratory tract infections can cause extraordinary events with high mortality and morbidity rates, causing a public health emergency and becoming a national problem. This study used an analytical design with the aim of identifying the relationship between independent variables, namely maternal knowledge and prevention of the incidence of upper respiratory tract infections at the Nuhon Community Health Center. The sample used was 74 mothers. The results of the research found that 62 respondents (83.8%) had poor knowledge and 12 people had good knowledge (16.2%), it was found that 64 respondents (86.5%) did it incorrectly and 10 people did it correctly (13.5%). The research conclusions show that from the test results of respondents and the incidence of Upper Respiratory Tract Infections, there is a relationship between overall knowledge and prevention efforts against Upper Respiratory Tract Infections.

Keywords: Relationships, Mother's Knowledge, Prevention of Infectious Diseases, Children

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1. Introduction

Acute Respiratory Tract Infection (upper respiratory tract infection) is an acute infectious process that lasts for 14 days, which is caused by microorganisms and attacks one or more parts of the respiratory tract, starting from the nose (upper tract) to the aveoli (lower tract), including adnexal tissue, such as the sinuses, middle ear cavity and pleura (Anonymous, 2007 in Lumban Batu).

The initial symptoms that appear are usually a cold cough, which is then followed by shortness of breath and rapid breathing. at a more severe level, there is difficulty breathing, inability to drink, seizures, decreased consciousness and death if not treated immediately. Under fives are the group most vulnerable to respiratory tract infections (Alimul, 2005).

This disease is caused by various causes (multifactorial). The cause of this disease is an infectious agent/germ. Apart from that, there are several factors that influence it, namely; the age of the baby/neonate, the size of the respiratory tract, the child's body's resistance to disease and weather conditions (Maramis, 2013).

The clinical course of upper respiratory tract infections begins with the interaction of the virus with the body. The entry of the virus as an antigen into the respiratory tract causes the cilia on the surface of the respiratory tract to move upwards pushing the virus towards the pharynx or by a reflex capture of spasm by the larynx. If this reflex fails, the virus damages the epithelial lining and mucosal lining of the respiratory tract. Virus irritation of these two layers causes a dry cough. Damage to the structure of the lining of the respiratory tract walls causes an increase in the activity of the mucous glands which are abundant in the walls of the respiratory tract, resulting in the release of mucosal fluid that exceeds normal. Excessive fluid stimulation causes cough symptoms (Kusumawati, 2010).

The World Health Organization (WHO 2010), estimates that the incidence of acute respiratory tract infections in developing countries with under-five mortality rates above 40 per 1000 live births is 15% - 20% per year in toddlers . In Indonesia, upper respiratory tract infections are always the first cause of death among infants and toddlers.





The prevalence of upper respiratory tract infections in Indonesia based on Basic Health Research data (Riskesdas, 2013) is 35%, which is the disease with the highest prevalence in toddlers (children who aged 1-5 years). NTB Province is one of the five provinces with the highest incidence of upper respiratory tract infections (41.7%). And in the Central Sulawesi region it is (28.4%).

Upper respiratory tract infections are spread throughout Central Sulawesi Province with a very varied prevalence range (18.8 – 42.7%). The prevalence rate of upper respiratory tract infections in the last month in Central Sulawesi Province was 28.4%; prevalence above 30% was found in several districts/cities, namely: Buol District, Parigi Moutong, Morowali, Banggai Islands and Palu City. especially in the district, the incidence of upper respiratory tract infections reached (18.7%). (Riskesdas 2013).

Knowledge is the result of "knowing" and this occurs after people sense certain objects. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste and touch. Mostly, human knowledge is obtained from the eyes and ears (Notoatmodjo, 2011).

The condition and level of complexity of health care facilities vary within a country and between countries. Health policy makers and administrators should identify strategies with appropriate cost-effectiveness ratios based on the characteristics of health care facilities and the possibility of continuous and continuous improvement. (WHO, 2008)

The foundation of infection prevention and control for the care of patients with upper respiratory tract infections includes early and rapid patient identification, implementation of routine infection control measures for all patients, additional preventive measures in certain patients (for example, based on a presumptive diagnosis), and development of infection prevention and control infrastructure for facilities Infection prevention and control strategies in health care facilities are generally based on the type of control. The impact of secondary bacterial infections can also attack the lower respiratory tract, so that bacteria that are usually only found in the upper respiratory tract,





after a viral infection, can infect the lungs, causing bacterial pneumonia (Kusumawati, 2010).

Handling respiratory tract diseases in children must pay attention to the immunological aspects of the respiratory tract, especially in the case that the immune system in the respiratory tract, which mostly consists of mucosa, is not the same as the systemic immune system in general. The respiratory tract immune system, which consists of follicles and scattered lymphoid tissue, is a characteristic feature of the mucosal immune system. The next characteristic is that IgA plays a role in the upper respiratory tract while IgG plays a role in the lower respiratory tract. It is also known that secretory IgA (sIgA) plays an important role in maintaining the integrity of the respiratory tract mucosa (Hariani, et al, 2014).

2. Research Methods

The design of this research is an analytical research design with the aim of identifying the relationship between the independent variables, namely the variable maternal knowledge and prevention efforts, with the dependent variable, namely the upper respiratory tract infection variable. Population is a generalized area consisting of objects/subjects who have certain qualities and characteristics that have been determined by researchers to study and then draw conclusions. The population in this study was all mothers whose toddlers suffered from upper respiratory tract infections, totaling 280 people in the work area of the Community Health Center.

Meanwhile, the sample is part of the number and characteristics of the population. If the population is large and the researcher cannot possibly study everything in the population, for example limited funds or time, then the researcher can use a sample taken from that population. For this reason, samples taken from the population must be truly representative.

3. Results and Discussion

a. Results

1. Univariate Analysis





Univariate analysis is carried out on a variable from the research results, which aims to explain or describe the characteristics of each research variable. In general, this analysis only produces the distribution and percentage of each variable studied (Notoadmojo, 2010).

a) Distribution of Respondents Based on Age

Table 1

Frequency Distribution of Respondents Based on Age in Nuhon District

No	Age	Frequency	Percentage
1	20 - 30 years	51	68.9
2	31 - 40 years old	23	31.1
	Total	74	100

Based on table 1, it can be seen that respondents aged 20 - 30 years were 51 people (68.9 %), those aged 31 - 40 were 23 people (31.1%).

b) Distribution of Respondents Based on Education

Table 2

Frequency Distribution of Respondents Based on Education

No	Education	Frequency	Percentage
1	JUNIOR HIGH SCHOOL	5	6,8
2	SENIOR HIGH SCHOOL	59	79.7
3	S1	10	13.5
	Total	74	100

Based on table 2, it can be seen that respondents based on junior high school education were 5 people (6.8 %), high school 59 people (79.7%), bachelor's degree 10 people (13.5%).

c) Distribution of Respondents Based on Occupation

Table 3

Frequency Distribution of Respondents Based on Education

No	Work	Frequency	Percentage
1	IRT	46	62.2





2	Self-employed	17	23.0
3	Civil servants	11	14.9
	Total	74	100

Based on table 3, it can be seen that respondents based on work as housewives were 46 people (62.2 %), entrepreneurs were 17 people (23.0%), civil servants were 11 people (14.9%).

2. Bivariate Analysis

This is done to find out whether there is a relationship between each independent variable and the dependent variable. Data analysis used *the Chisquare test* with the SPSS program. (Notoadmojo 2012).

1) Distribution of knowledge about upper respiratory tract infections

Knowledge	Upper Respiratory Tract Infections				Total		ρValue
	Yes		No				
	N	%	N	%	N	%	
Know	12	100	0	0.0	12	16.2	0.006
Don't know	38	61.3	24	38.7	62	83.8	
Amount	50	67.6	24	32.4	74	100	

Based on table 4, it can be seen that from 74 research respondents there were 62 respondents (83.8%) who had poor knowledge and 12 people who had good knowledge (16.2%). The statistical test results obtained for the variable knowledge of the causes of Upper Respiratory Tract Infections with a value of $\rho = 0.006$ which means < 0.1 . So it can be concluded that there is a significant relationship between the variable knowledge of Upper Respiratory Tract Infections and the incidence of Upper Respiratory Tract Infections.

2) Distribution of prevention regarding upper respiratory tract infections

Prevention	Upper Respiratory Tract Infections				Total		ρValue
	Yes		No				
	N	%	N	%	N	%	
Appropriate	10	100	0	0.0	10	13.5	0.014





Not exactly	40	62.5	24	37.5	64	86.5	
Amount	50	67.6	24	32.4	74	100	

Based on table 5, it can be seen that from 74 research respondents, there were 64 respondents (86.5%) who did it incorrectly and 10 people who did it correctly (13.5%). The statistical test results obtained for the Upper Respiratory Tract Infection Disease Prevention Variable were obtained with a value of $\rho = 0.014$, which means < 0.1 . So it can be concluded that there is a significant relationship between the variable preventing Upper Respiratory Tract Infections and the incidence of Upper Respiratory Tract Infections.

b. Discussion

The research results show that there are more respondents who have poor knowledge and prevention compared to respondents who have good knowledge and prevention. This shows that the small community of Nuhon district. Most Banggai do not have good knowledge and prevention of upper respiratory tract infections, so the researchers draw a conclusion that there is a relationship between knowledge and prevention of upper respiratory tract infections in mothers of toddlers and upper respiratory tract infections.

According to researchers' assumptions, knowledge is best supported by adequate education regarding knowledge and prevention of upper respiratory tract infections.

The results of this research are supported by the opinion of Notoatmodjo (2010), who says that knowledge is the result of knowing and occurs after people sense a particular object. Sensing occurs through the five human senses, namely sight, hearing, smell, taste and touch. Knowledge can be obtained, among other things, through formal and informal education. Knowledge can also be obtained from other people's knowledge, including by hearing, seeing directly and through communication tools such as television, radio, books, magazines and so on.

This research also shows that some respondents still have good knowledge and prevention of upper respiratory tract infections. This could happen because the





respondent knows but does not understand and apply the knowledge. Lack of knowledge is also influenced by those who have never received information about the importance of knowledge and prevention of upper respiratory tract infections in toddlers. This was similarly expressed by Notoatmodjo (2010).

The foundation of infection prevention and control for the care of patients with upper respiratory tract infections includes early and rapid patient identification, implementation of routine infection control measures for all patients, additional preventive measures in certain patients (for example, based on a presumptive diagnosis), and development of infection prevention and control infrastructure for facilities. Infection prevention and control strategies in health care facilities are generally based on the following types of controls:

1. Personal Protective Equipment

All of the above strategies reduce but do not eliminate the possibility of exposure to biological risks. Therefore, to further reduce this risk for healthcare workers and others who interact with patients in healthcare facilities, Personal Protective Equipment should be used in conjunction with the above strategies in certain situations that pose a greater risk of pathogen transmission. (WHO, 2008).

The use of Personal Protective Equipment should be defined by policies and procedures specifically aimed at infection prevention and control (e.g., isolation precautions). The effectiveness of Personal Protective Equipment depends on adequate and regular supplies, adequate staff training, proper hand hygiene, and more importantly, human behavior. All the types of control above are very interrelated. All types of control must be harmonized to create an institutional work safety culture, which becomes the basis for safe behavior. (WHO, 2008)

2. Ventilate the room

Room ventilation is the process of introducing and distributing outside air, and/or recycled air that has been properly treated into a building or room. Ventilation and air conditioning are two different concepts. The purpose of air





conditioning is to maintain an indoor environment at a comfortable temperature (WHO, 2008).

The purpose of ventilation is to maintain good indoor air quality, namely ensuring that indoor air is safe for breathing purposes. Isolation rooms with adequate ventilation control systems and controlled one-way air flow should be provided whenever possible in healthcare facilities. This is especially important to reduce the transmission of pathogens transmitted by obligate or preferential airborne transmission (e.g., pulmonary tuberculosis, measles, chickenpox). . Most respiratory diseases (e.g., parainfluenza viruses, RSV, influenza viruses) do not spread rapidly through the air over long distances in healthcare settings, and patients can be adequately protected without environmental ventilation control systems. However, because airborne transmission can occur for some upper respiratory tract infections, for patients infected with new agents that cause upper respiratory tract infections that may be of concern, Airborne Transmission Precautions should be maintained until the mode of transmission is known. Thus, if an airborne infection prevention room is available, these patients should also be placed in that room. If an airborne infection prevention room is not available, placement of these patients in an adequately ventilated single-patient room, which has ≥ 12 ACH but with uncontrolled one-way airflow, should be considered. (WHO, 2008).

4. Conclusion

Based on the results of the research and discussion above, research conclusions can be drawn from the test results of respondents with the incidence of Upper Respiratory Tract Infections, there is a relationship between overall knowledge and prevention efforts for Upper Respiratory Tract Infections.

5. Compliance with ethical standards

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Disclosure of conflict of interest

This research collaboration is a positive thing for all researchers so that conflicts, problems and others are absolutely no problem for all writers.

Statement of informed consent

Every action we take as authors is a mutual agreement or consent.

References

- Republic of Indonesia Ministry of Health. (2013). Indonesian health profile data and information center 2008. Jakarta: Indonesian Ministry of Health.
- Republic of Indonesia Ministry of Health 2013. Guidelines for Handling UPPER RESPIRATORY TRACT INFECTIONS. Director General of PPM and PLP. Jakarta: Ministry of Health of the Republic of Indonesia.
- Indonesian University Dental Journal, FKGUI.
- Central General Hospital, Prof. Dr. R. D Kandou Manado” E-Dental Journal (Eg), Volume 3, Number 2.
- Firdausia, A. 2013. The relationship between the level of education and employment of the mother with the behavior of preventing upper respiratory tract infections in toddlers in the work area of the Gang Sehat Community Health Center, Pontianak Community Health Center. Medical Education Study Program, Faculty of Medicine, Tanjungpura University, Pontianak.
- Hariani, et al. 2014. The relationship between immunization status, nutritional status and cigarette smoke with the incidence of upper respiratory tract infections in children at the Seger Pangkep Community Health Center. Health scientific journal Diagnosis Volume 5 Number 5 of 2014 ISSN: 2302- 1721. Poltekkes Kemenkes Makassar and STIKES Nani Hasanuddin Makassar.
- Herdiansyah, Haris. 2010. Qualitative Research Methods for the Social Sciences. Jakarta: Salemba Humanika
- Kusumawati, 2010. The relationship between the smoking status of family members and the length of treatment for upper respiratory tract infections in toddlers in Jenawi District. Sebelas Maret University Postgraduate Program, Surakarta.
- Maran, AA, Alim, A., Marpaung, MP, Nurhaedah, N., Pannyiwi, R., & Rahmat, RA (2023). Education about household waste management in maintaining environmental health





- in Manisa Village. *Social Friends: Journal of Community Service*, 1(4), 200 – 208. <https://doi.org/10.59585/sosisabdimas.v1i4.176>
- Maramis, et al. 2013. The relationship between education level and knowledge about upper respiratory tract infections with the mother's ability to care for upper respiratory tract infections in toddlers at the Bahu Community Health Center, Manado City. *Nursing Ejournal (e-Kp) Volume 1. Number 1. August 2013*
- Mufida, M., Rabiah, R., Tuti, M., Damayanti, F., Vista, N., Asril, KC, & Nusi, O. (2023). Educate Students About the Dangers of Smoking for Health. *Social Friends: Journal of Community Service*, 1(4), 133–141. <https://doi.org/10.59585/sosisabdimas.v1i4.116>
- Nurjazuli, (2011). Dominant risk factors for the occurrence of pneumonia in children under five years (Thesis). Not published. Faculty of Health Sciences. Hasanuddin University
- Ngastiyah, 2005. Manual for eradicating infectious diseases. Edition 17. Jakarta: CV. Infomedicine.
- Notoatmodjo, 2011. *Research Methodology on Knowledge, Attitudes and Human Behavior*. Yogyakarta: Nuha Medika.
- Notoatmodjo, 2014. *Introduction to Health Education, knowledge and Health Behavior Science*. Yogyakarta, Andi Offset.
- Basic Health Research. 2013. *Interviewer's Guide for Data Collecting Officers*. Jakarta: Research and Development Agency, Republic of Indonesia Ministry of Health, 2013.
- Serviyanti, 2013. Bacterial Patterns from Sputum of Patients with Respiratory Tract Infections at the Bahu Community Health Center. Department of Microbiology, Samm Ratulangi University, Manado.
- Rahmawati DY. (2011). Effectiveness of Chewing Berxiylitol gum to reduce dental plaque index at SDN Sekolah 01 Gunungpati Semarang. (thesis), Semarang State University, Faculty of Public Health Sciences, Semarang.
- Rosdiana, R., Djunaedi, D., & Aditia, D. (2023). Parents' Knowledge of Elementary School Children Regarding Persistent Health Cases. *Barongko: Journal of Health Sciences*, 1(3), 122–128. <https://doi.org/10.59585/bajik.v1i3.109>
- Resti Wijayanti, FE, HB, E., Ratu, M., Arfah, A., Hartati, A., & Werdyaningsih, E. (2022). Analysis Factor To Implementation Standard Care Nursing In room Treat Stay Public health center. *Barongko: Journal Knowledge Health*, 1(1), 47–49. <https://doi.org/10.59585/bajik.v1i1.39>
- Srianingsih, S., Wijaya, A., Pannyiwi, R., Anto, S., Muhajrin, M., & Rauf, NI (2022). Care Nursing Family With Problem Health Environment. *Barongko: Journal of Health Sciences*, 1 (1), 53–56. <https://doi.org/10.59585/bajik.v1i1.41>
- Susiandari, A. (2024). Tool Use Contraception Implants on Knowledge of Couples of





- Childbearing Age in the Mamuju Community Health Center Work Area. JIMAD: Multidisciplinary Scientific Journal, 1(2), 125–131. <https://doi.org/10.59585/jimad.v1i2.292>
- Susanti, R., Imran, A., Briiliannita, A., Akbar, A., Yermi, Y., B, M., Pannyiwi, R., & Rasyid, D. (2023). Counseling on clean and healthy living behavior in Minasatene District, Pangkajene Islands Regency. *Social Friends: Journal of Community Service*, 1(3), 92–98. <https://doi.org/10.59585/sosisabdimas.v1i3.70>
- Susilawati. (2020, December). Characteristics of patients with decisions to purchase dental and oral health services. *Silampari nursing journal*, vol 4 (no 1).
- Toalu, A., Alwy, SNA, Baharuddin, B., & Nurhartati, A. (2023). Analysis of the Quality of Refillable Drinking Water Depots in the Tamalanrea Community Health Center Area. JIMAD: Multidisciplinary Scientific Journal, 1(1), 30–37. <https://doi.org/10.59585/jimad.v1i1.154>
- Ulasaswini, AA, Haris, M., Hidayat, T., Yusriyanto, Y., Syafri, M., Mustari, S., & Hermawan, A. (2023). Effectiveness of Clean Water Filtering on the Water Quality of Dug Wells in Patingalloang Village, Ujung Tanah District, PT Pertamina Patra Niaga IT Makassar Corporate Social Responsibility Program 2023. *Barongko: Journal of Health Sciences*, 1(3), 228–242. <https://doi.org/10.59585/bajik.v1i3.147>
- WHO. 2008. Prevention and control of Acute Respiratory Infections which tend to become Epidemics and Pandemics in Health Care Facilities WHO interim guidelines. Linguist: Trust Indonesia : Jakarta.
- Wulandari, S., Jamila, S., Rabiah, R., Mardini, RS, Magelo, WG, & Pratiwi, A. (2023). Educational Outreach on the Dangers of Smoking at SMP Negeri 11 Sigi. *Social Friends: Journal of Community Service*, 1(4), 152–159. <https://doi.org/10.59585/sosisabdimas.v1i4.127>
- Yudarmawan, I N. 2013. The Influence of Home Sanitation Factors on the Incidence of Disease in Children Under Five.

Book Source:

- Donny Aditia; Fransina Tubalawony; Son; Mochamad Robby Fajar Cahya; Nur Febrianti; Risca Hamdanesti; Goddess Kokmesa; Israel ; Kurniati Nawangwulan; Yusnita Yusufik. *Wound Care And Treatment For Health*. No. ISBN: 978-623-09-8231-6. <https://agdosi.com/2024/01/10/wound-care-and-treatment-for-health/>
- M. Khalid Fredy Saputra; Lili Amaliah; Mohammad Sadli; Eko Prastyo; Dr. Abd. Rozak; Dr. Muh. Risal Tawil; Devin Mahendika; Wita Oileri Tikirik; Asbath Said; Ria Wahyuni. *HEALTH PROMOTION: Improving The Community's Healthy Quality Of Life*. No. ISBN: 978-623-09-8361-0.
- Tri Ayu; Devin Mahendika; Nurul Aini Suria Saputri; Dr. M. Risal Tawil; Suratno Kaluku;





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