



# The Role of Nurses in Enhancing Medication Adherence and Patient Outcomes in Hypertension Management

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## ABSTRACT

Acute respiratory tract infection (ARI) is a disease that is often found and is transmitted from the upper or lower respiratory tract which can cause a spectrum of diseases ranging from mild infections to severe and fatal diseases, depending on the causative pathogen and environmental factors. This study aims to determine the description of drug use in patients with Acute Respiratory Tract Infections (ARI) based on the Patient Visit Book at the UPT. Narumonda Health Center Period January-April 2023 based on drug class and type of drug. This study is a descriptive study with a retrospective approach conducted in June 2023, in the patient visit book there were 60 patients with ARI from January to April 2023. Based on the age range where the age of >61 years and above the most suffer from ARI, namely 20 cases (33%) and at the age of 1-10 years as many as 18 cases (30%). Based on the drug class in the classification of the most widely used drugs, namely the vitamin group where there were 44 cases (73.33%). Based on the type of drug most widely used, namely Paracetamol where there were 35 cases (17.32%). Suggestion: For further research, it is hoped that ongoing research can be carried out with the category of evaluating the use of ARI drugs so that researchers can directly observe the patient's condition.

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## 1. INTRODUCTION

Health according to the World Health Organization (WHO), is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity/disability" (Grzywna, 2020). Health is something that is very important for human life. However, sometimes an unhealthy lifestyle causes various diseases to attack our bodies, one of which is Acute Respiratory Tract Infection (ARI). ARI is the leading cause of death in the world, where ARI cases reach 120 million people per year and around 1.4 million people die. 95% of deaths are caused by ARI in countries with low and middle per capita income.

According to the World Health Organization (WHO), rational drug use is a condition where patients receive treatment according to their clinical needs, in doses that are appropriate to individual needs, for an adequate period of time, and at the lowest cost to the patient and the community. ARI is still the main cause of morbidity and mortality of infectious diseases in the world (Williams et al., 2002). The mortality rate of ARI reaches 4.25 million each year in the world. The World Health Organization

(WHO) in 2020 found that there were 1,988 cases of ARI in toddlers aged 1-5 years with a prevalence of 42.91%. Based on the results of the 2018 National Basic Health Research (Riskesdas), the prevalence of ARI was (4.4%) with the characteristics of the population experiencing the highest ARI in the toddler age range (25.8%)(Mayasari & Resley, 2020).

The provinces included in the top five highest ARI are Papua (10.0%) Bengkulu (9.5%), West Papua (7.5%), East Nusa Tenggara (7.4%) Central Kalimantan (6.0%) East Java (5.5%), Maluku (5.4%), Banten (5.1%), West Java (4.9%), Central Java (4.9%). Based on the prevalence of ARI in the province of North Sumatra with a symptom diagnosis (DG) of 6.8 %, while with a health diagnosis (D) of 2.8%). Based on the Prevention and Control of ISPA program, it is focused on controlling pneumonia in toddlers because it contributes greatly to the morbidity and mortality of toddlers(Widiasih et al., 2020). Until now, pneumonia is still one of the causes of the highest morbidity and mortality in toddlers in the world and in Indonesia(Cahyati & Sari, 2020).

According to WHO, pneumonia contributed to 14% of toddler deaths in the world in 2019(Marangu & Zar, 2019). In RISKESDAS 2018, the prevalence of pneumonia based on diagnosis by health workers was 2% and 4% based on diagnosis by health workers and symptoms(Purba et al., 2019). Based on the percentage of pneumonia case treatment according to standards, 50% of the target of 53% was achieved with a performance of 106% (Chou et al., 2019). Marisa's (2020) research on the Overview of Prescribing for the Use of Acute Respiratory Infection (ARI) Drugs in outpatients at the Pantai Cermin Tanjung Pura Health Center. It was found that from the research results, ARI ranked first and affected female patients more, namely 94 prescriptions (53.71%), and with an age range of 1-15 years as many as 43 prescriptions (24.57%). ARI is an infection that starts from the respiratory tract, nose, throat, larynx, trachea, bronchi and alveoli(Arruda et al., 2009). ARI 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) (Arruda et al., 2009).

Treatment is a scientific process carried out by doctors or nurses on patients based on the diagnosis obtained. These efforts are carried out through a series of procedural stages consisting of anamnesis, examination, diagnosis, treatment and follow-up. Medicines are one of the important factors in health services(Donabedian, 2005). However, the World Health Organization (WHO) estimates that there are about 50% of all medicines used inappropriately in their prescription, preparation and sale. About 50% of the other are not used appropriately by patients. Improper use of drugs can cause many problems. These problems include aspects of effectiveness, side effects, interactions, economy and drug abuse. Therefore, in the use of drugs, proper consideration is needed so that their use is effective and efficient(Sudhakar et al., 2006).

The main therapy for ISPA patients is carried out with antibiotic therapy and supportive therapy such as antihistamines, antipyretic analgesics, decongestants, corticosteroids, bronchodilators, mucolytics, expectorants and vitamins. The patient visit book is a book that contains a summary of patient treatment visits, and consists of patient identity, diagnosis, treatment therapy received/patient during treatment(Santana & Feeny, 2014). Based on an initial survey conducted by researchers at the UPT(Rea & Parker, 2014). Health Center, the disease that ranked first in terms of patient visits was Acute Respiratory Tract Infection in the period January - April 2023(Birkmeyer et al., 2020). Based on this problem, the author is interested in conducting research with the title Overview of Drug Use/Drugs in Patients with Acute Respiratory Tract Infection at the UPT. Narumonda Health Center for Period January-April 2023 Based on the Patient Visit Book.

## 2. RESEARCH METHOD

The research method used is descriptive with a retrospective time approach(Akhtar et al., 2016). The main objective in using this method is to describe the nature of an object's current state based on facts as they exist, then analyze and interpret them using past sources(Gregor, 2006).

### 3. RESULTS AND DISCUSSIONS

#### 3.1 results

Table 1. Characteristics of ISPA Patients Based on Age at the Narumonda Health Center UPT based on patient visit books.

No	Age (years)	Frequency	Percentage (%)
1	1-10	18	30%
2	11- 20	8	13%
3	21-30	4	7%
4	31-40	2	4%
5	41-50	5	8%
6	51-60	3	5%
7	61 and above	20	33%
	Amount	60	100%

Based on Table 1 above, the research results show that patients aged 61 years and above are more likely to suffer from ARI, namely 20 respondents (33%) and followed by those aged 1-10 years as many as 18 respondents (30%).

Table 2. Overview of drug use in ISPA patients at the Narumonda Health Center UPT for period January-April 2023 based on drug group

No	Drug Classes	Frequency	Percentage (%)
I	ISPA medicine		
	1. Gol. Analgesic antipyretic	35	17%
	2. Antihistamines	36	18%
	3. Mucolytics	9	4%
	4. Gol. Corticosteroids	8	4%
	5. Gol. Antitussive	14	7%
	6. Gol. Bronchodinator	-	-
	7. Gol. Expectorant	9	4%
	8. Gol. Decongestant	-	-
	9. Gol. Vitamin	44	22%
II	Other Medications		
	1. Antibiotics	37	19%
	2. Gol. Other drugs	10	5%
	Amount	202	100%

Based on Table 2, the use of ISPA drugs that are most widely used are vitamins, which is 44 cases (22%). From the results of the study, it can be seen that in addition to ISPA drugs, other drugs are also used because some patients have other diseases, the most widely used are antibiotics, which is 37 (19%) cases.

Table 3. Overview of drug use in ISPA patients at the Narumonda Health Center UPT for period January-April 2023 based on type

Group Drug	Type drug	Frequency	Percentage
Goal. Analgesic antipyretic	Paracetamol	35	17.32%
Gol. Antihistamin	Cetirizine	21	10.39%
	Chlorpheniramine maleat	11	5.44%
	Loratadine	4	1.98%
Gol. Mucolytic	Acetylcysteine	9	4.45%
Gol. Corticosteroids	Methylprednisolone	8	3.96%
Gol. Antitussive	Dextrofen syr	14	6.93%
Gol. Bronchodinator	-	-	-
Gol. Expectorant	Hustab syr	9	4.45%
Gol. Decongestant	-	-	-
Vitamin Goal	Vitamin C	16	7.92%
	Vitamin B complex	27	13.36%
	Vitamin B1	1	0.49%
Antibiotics Goal	Amoxicillin	21	10.39%
	Cefixime	12	5.94%
	Ciprofloxacin	4	1.98%
Gol. Medicine Other	Oralit	1	0.49%
	Lansoprazole	2	0.99%
	Sodium Diclofenac	2	0.99%

Antacids	2	0.99%
Donperidone	2	0.99%
Amlodipine	1	0.49%
Amount	202	100%

Based on Table 3, it shows that the most widely used ISPA drugs based on the type of drug are from the analgesic antipyretic group, the type of drug is paracetamol, as many as 35 cases (17.32%), and the lowest use of ISPA drugs based on the type is the bronchodilator group and the decongestant group, where in both groups there was no use of any type of drug in the period January-April 2023.

### 3.2 Discussion

Characteristics of ISPA patients totaling 60 cases obtained from the results of the study include age obtained from the patient visit book at the UPT. Narumonda Health Center. From table I it can be seen that the age range for suffering from ISPA is >61 years and above with a frequency of 20 respondents (33%) where those aged >61 years and above have a low or declining immune system so that they are susceptible to various infections and followed by those aged 1-10 years with a frequency of 18 respondents (30%). One of the main reasons why ages 1-10 are more susceptible to ARI is because their immune system is not yet fully formed (Weigl et al., 2007). That is why, the body at that age finds it difficult to fight bacterial or viral infections that cause ARI.

In addition to immunity factors, the surrounding environment may also play a role in the transmission of ARI. In contrast to the results of a study conducted by Marisi (2020), the age group most susceptible to ARI is 1-15 years old with 43 prescription sheets (24.57%). Age has a significant influence on the occurrence of ARI, this ARI disease can attack anyone from children, adolescents, adults, even the elderly, especially those with weak immune systems (Das, 2020). The high risk of ARI is in the age group less than 1 year and age > 61 years and above. In the age group > 61 years and above, susceptibility to ARI occurs due to a person's level of immunity and more activities outside the home so that they are more exposed to air containing ARI disease agents (Han, 2020).

Based on the 2018 Mutalazimah study in the village of Cilibur Pengayuban regarding biological factors with the occurrence of ARI at the age of 6-11 years are more susceptible to ARI because the child's immune system is not yet able to fight the virus that enters. This can cause ARI to be attacked by laziness in washing hands, touching the face, not changing clothes after coming home from school or playing, various uses of cutlery, difficulty eating and drinking. Based on the results of the study in table II, the use of drugs in patients with acute respiratory infections (ARI) at the Narumonda Health Center UPT based on the group.

Of the 60 cases of ARTI sufferers, there were 202 drug items. The most widely used ARTI drugs were the vitamin group, which was 44 cases with a percentage of 22% (Group, 2001). From the results of the study, it can be seen that in addition to ISPA drugs, other drugs are also used, this is because there are patients who have comorbidities, where the group that is widely used is antibiotics as many as 37 cases with a percentage (19%). In contrast to the results of the study conducted by Marisi, (2020) Based on the data, the most widely prescribed group is cough medicine (32.82 %) as many as 150 items. Vitamins are food supplements that are very necessary in helps maintain metabolism in a person's body so that it can speed up healing. Antibiotics are a type of drug that is most common and most widely used to treat infections such as ARI.

Based on the statement from the Ministry of Health, the majority of respiratory symptoms are mild, for example colds and coughs that do not require antibiotics (Fischer et al., 2005). But the use of antibiotics for these symptoms can make the healing process of this type of disease faster than being given symptomatic drugs, not only that the use of antibiotics with the right dose can anticipate further infection from bacteria, therefore the determination and administration of antibiotics for the disease are really considered so as not to cause defense (resistance) of germs or bacteria in the future. Cough medicine is a drug used to reduce cough symptoms due to various causes including viral infections in the upper respiratory tract (Dicpinigaitis et al., 2009). Based on the results of an interview conducted with one of the doctors at the UPT. Narumonda Health Center, the provision of antibiotics on the prescription is not always given because the main cause of ARI at the UPT. Narumonda Health Center

is mostly caused by viruses where the disease will heal on its own (self-limiting disease), so it does not always require antibiotic treatment and only provides symptomatic treatment such as analgesics, antitussives, or vitamins to increase immunity.

Based on research conducted by Anonymus 2022 at the Karangnongko Health Center, the use of antihistamines in ARI patients was 83 patients (53%). Because Antihistamines are generally used to treat ARI symptoms and are not curative, although most ARI will improve without treatment within 1 week (Min, 2010). Based on the results of the study in table III, the use of drugs in patients with acute respiratory infections (ARI) at the Narumonda Health Center UPT based on type shows that from the analgesic antipyretic group, the most widely used type of drug is paracetamol in 35 cases with a percentage of 17.32% with the total number of ISPA drug use based on its type of 202 cases and the type of drug that is widely used is also vitamin B complex in 27 cases with a percentage (13.36%). This is different from the results of the study by Ovikarian et al., (2013) where the administration of the most ISPA drug was amoxicillin, which was 92%.

Treatment for ARI does not only focus on treating the infected respiratory tract, but also requires supportive therapy to treat the symptoms caused by the infection (O'Connor et al., 2018). One of the treatments that can be done in treating ARI is using antipyretic analgesics. Paracetamol is a drug in the NSAID class which is more often used as an analgesic and antipyretic (Graham & Scott, 2003). The mechanism of action of this drug is to inhibit prostaglandin synthesis in the brain so that the analgesic and antipyretic effects are better. Vitamins and minerals are very necessary for someone who is to increase endurance and help maintain metabolism in a person's body so that it can accelerate healing. Amoxicillin is the most effective and most widely used penicillin antibiotic, which is free from toxic properties and is most often used incorrectly and excessively (Thambavita et al., 2017).

Based on research conducted by Suhandayani 2022 At UPT.Puskesmas Tembilahan Hulu, the use of Cetirizine amounted to 179 people (56.3%). This Ceterizine is included in the second generation and was developed so that it does not cause drowsiness only or only causes minimal drowsiness. This is achieved by increasing the selectivity of the H<sub>1</sub> receptor, and adding compounds to reduce the crossing of the brain barrier (Lu et al., 2010).

#### 4. ONCLUSION

Based on the characteristics of respondents in Acute Respiratory Tract Infection (ARI) Patients at the Narumonda Health Center UPT for the period January–April 2023. The majority were in the age range of 61 years and over where there were 20 cases (33%) and in the age range of 1-10 years where there were 18 cases (30%). Based on the description of the use of ARI drugs based on the drug group that was mostly used, namely the vitamin group where there were 44 cases (73.33%). Based on the type that was most widely used, the majority used paracetamol as many as 35 cases with a percentage of 17.32 %.

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