

## CHARACTERISTICS OF PATIENTS WITH URINARY TRACT INFECTION

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### ABSTRACT

Urinary tract infection is caused by pathogenic microorganisms ascending from the urethra to the bladder and increasing in number, then evoking infection of the ureters and kidneys. The incidence of urinary tract infection at Pelamonia Hospital in 2018 was 1094 cases, and from January to August in 2019, the number of cases was 944 cases, while for the last three months data were 321 cases. The purpose of this study was to describe the characteristics of patients with urinary tract infection. This study is a descriptive study using the Accidental Sampling design. The sample in the study was 38 people who were diagnosed with urinary tract infection at Pelamonia Hospital. The data were collected using a questionnaire. The results of this study showed that from 38 respondents with urinary tract infection (UTI), the average age was mostly between 56-65 years as many as 14 (36.8%) respondents, most of them were female as many as 20 (52.6%) respondents, most are high school graduates as many as 25 (65.8%) respondents, most only have sufficient knowledge as many as 35 (92.1%) respondents, and mostly occurred in the accustomed to holding urination group as many as 34 (89.5%) respondents. The conclusions of this study indicate that the characteristics of patients with Urinary Tract Infection (UTI) such as age, gender, education level, knowledge, and accustomed to hold urination play a role in the incidence of urinary tract infection.

Keywords: characteristics; patient; urinary tract infection

### INTRODUCTION

Urinary tract infection is one of the most common types of infection. It can occur to the kidneys (ureters), bladder, and urethra. The female is more susceptible to urinary tract infection. Their urethra is shorter than the male and makes bacteria easily reach it. Urinary tract infection is mostly caused by *Escherichia coli* (Kausuhe,2017). According to WHO in Safitri (2013), urinary tract infection is one of the second most common infections in the body after respiratory tract infections, and about 8.3 million cases are reported per year. (Pangaribuan, 2018). According to the Centers for Disease Control and Prevention (CDC) surveillance in 2018 regarding Catheter-Associated Urinary Tract Infection (CAUTI) showed that mortality is estimated more than 13,000 deaths every year are related to urinary tract infection (CDC, 2018).

Urinary tract infection is one of the most common health problems. *American Urology Association* (AUA, 2016) states that the incidence of urinary tract infection is estimated at 150 million world population per year. Urinary tract infection in the United States account for more than 7 million hospital visits annually. Approximately 15% of all antibiotics prescribed to the public in the United States are given to patients with urinary tract infection, and some European countries show the same data. (Lina, 2018). Meanwhile, data from the Ministry of Health of the Republic of Indonesia in 2014 show that the population of Indonesia who suffers from urinary tract infection is estimated at 222 million people. Urinary tract infection in Indonesia and its prevalence is high. The number of patients with urinary tract infection in Indonesia reaches 90-100 cases per 100,000 population per year or about 180,000 new cases per year. (Pangaribuan, 2018).

According to data from the South Sulawesi Provincial Health Office, the incidences of UTI in hospitals and health care centers in 2008 were 379 cases (27%), in 2009 there were 456 cases

(29%), and in 2010 there were 346 cases (27%) (Aminullah, 2018). The leading factors of urinary tract infection are Females who have a short urethra and the children with congenital abnormalities of ureter implantation in the bladder wall often cause recurrent upper urinary tract infection due to backflow of urine into the upper urinary tract during urination. Another habit is holding urination. It can be a factor in the incidence of UTI (Melasari, 2015).

A study by Said (2018) showed that statistical test found a relationship between the behavior of holding urination with the incidence of urinary tract infection in patients at risk for urinary tract infection at KRMT Wongsonegoro Hospital, Semarang. Based on these results, it is hoped to avoid resisting the urge to urinate and hasten it when there is a stimulus to urinate (Said, 2018). A study by Imaniah (2015) said that females had a higher chance of incidence of UTI by 57.41% than males (42.59%) in Dr. Moewardi Hospital in 2014. Most patients with Urinary tract infection occur at the age of more than 60 years by 38.89% due to asymptomatic bacteria found in females aged 18-40 years (the presence of bacteria without symptoms) by 5-6% and an increase in the elderly by 20% (Saudi, 2018). Based on the background described above, the researcher is interested in examining the Characteristics of Patients with Urinary tract infection at Pelamonia Hospital Makassar.

## METHOD

The type of research is descriptive research which is part of observational research carried out through direct or indirect observations without any treatment or intervention. The population in this study were all outpatient urinary tract infection at the urology polyclinic of Pelamonia Hospital Makassar with a total of 321 cases. The sample selection used the Non-probability Sampling method with the accidental sampling technique, taking samples based on coincidence meetings. Data were collected using observation sheets and interviews as research instruments to describe the characteristics of patients with urinary tract infection. Data analysis used univariate analysis. This analysis describes the research variables.

## RESULTS AND DISCUSSION

Table 1.

Distribution of Characteristics of Patients with Urinary tract infection by Age Group		
Age (Years)	f	%
Early Adolescence 12-16 years	2	5,3
Late Adolescence 17-25 years	4	10,5
Early adulthood 26-35 years	6	15,8
Late adulthood 36-45 years	5	13,2
Early elderly 46-55 years	4	10,5
Late elderly 56-65 years	14	36,8
Old Age >65 years	3	7,9

Table 1, the characteristics of respondents according to age indicated that the most respondents were the late elderly group with 14 respondents (36.8%), and the smallest group was the early adolescent group with 2 respondents (5.3%)..

Table 2.  
Distribution of Characteristics of Patients with Urinary tract infection by Gender Group

Gender	f	%
Male	18	47,4
Female	20	52,6

Table 2, the characteristics of the respondents according to gender showed that there were 20 (52.6%) female respondents and 18 (47.4%) male respondents.

Table 3.  
Distribution of Characteristics of Patients with Urinary tract infection by Education Level Group

Education Level	f	%
Graduated from SD	6	15,8
Graduated from Middle School	4	10,5
Graduated from High School	25	65,8
Graduated from College	3	7,9

Table 3, the characteristics of respondents according to education level showed that from 38 respondents there were 25 (65.8%) respondents who graduated from high school, and 3 (7.9%) respondents who graduated from university.

Table 4.  
Distribution of Characteristics of Patients with Urinary tract infection Based on Knowledge Group

Knowledge Level	f	%
Low	3	7,9
Sufficient	35	92,1

Table 4, the characteristics of respondents according to knowledge showed that from 38 respondents there were 35 (92.1%) respondents who have sufficient knowledge, and 3 (7.9%) respondents who have a low level of knowledge.

Table 5.  
Distribution of Characteristics of Patients with Urinary tract infection Based on Groups of Holding Urination Habits

Holding Urination Habits	f	%
Acustomed	34	89,5
Not Acustomed	4	10,5

Table 5, the characteristics of respondents according to the habit of holding urination showed that from 38 respondents there were 34 (89.5%) respondents who were accustomed to holding urination and 4 (10.5%) respondents who were not accustomed to holding urination.

## DISCUSSION

### 1. Age

Age is a factor in the pathogenesis of urinary tract infection. Urinary tract infection is common in sexually active young women, with reported incidence rates ranging from 0.5–0.7 per person per year, while in young men aged 18-24 years is 0.01 per person per year. In the elderly, there will be an increased susceptibility to disease. Above the age of 50, the ability to maintain sterility is complicated in both the bladder and urethra (Lina dan Lestari, 2019). In this study, the highest percentage of age was late elderly with 14 (36.8%) respondents, while the lowest percentage category was 12-16 years as many as two respondents (5.3%). The results of this study is in line with (Pratistha, 2017) stated that the most frequent urinary tract infection is at the age of 45 years. The incidence of urinary tract infection increases in adults and the elderly due to sexual activity, chronic diseases, genitourinary functional disorders, and certain drugs usage. Cases of Urinary tract infection often occur in the age group with a range of 25 to 59 years which are included in the category of adults and the elderly. (Pratistha, 2017).

The researchers obtained data from Vincitorio (2014) that the striking changes in the elderly are related to the bladder. Complaints of urgency to urination and frequent urination often occurs. It is caused by the bladder muscles disorder or the disorder of the urethral sprinter. Bladder capacity and ability to completely expel urine from the bladder are reduced. It makes the elderly suffer from urinary tract infection (Vincitorio, 2014). Researchers assume that over 55 years of age are at risk for urinary tract infection due to low immunity or urinary function. With age, the kidneys and bladder will change. Old age also causes a decrease in bladder capacity and will increase susceptibility to disease. During the study, most of the respondents who came to the urology polyclinic were >50 years old.

### 2. Gender

Gender relates to the different life roles and behaviors between male and female. Urinary tract infection is common in Female. Because the urethra is shorter, making it easier for contaminant bacteria to gain access to the bladder. About 30-50% of Female will experience a urinary tract infection in their lifetime. (Herlina, 2015). According to gender, the highest percentage of respondents is female as many as 20 respondents (52.6%), and the lowest one is male respondents as many as 18 (47.4%) respondents. It shows that the majority of respondents who suffer from urinary tract infection are Female. Data obtained from Hermiyanty (2016), that gender is a risk factor for urinary tract infection. Female are more susceptible to infection because the female urethra is shorter than the male urethra. Most of the leading causes of urinary tract infection in Female are urinary tract anatomy factors, then the next most influential factor is the lack of knowledge about the triggers of urinary tract infection (Hermiyanty, 2016).

This study is in line with research conducted by Pradani in Surakarta in 2016 found that females are more frequently affected by urinary tract infection than males amounting to 58 respondents (56.86%). This incident occurs because of the anatomical factors of the female genitalia because they have a shorter urethra making it easier for urinary tract infection to occur than males. (Pradani, 2016). According to the researcher, based on the literature and related research results above, it can be concluded that the prevalence of Urinary tract infection is more common in females because they have a short urethra (2-3 cm) than males. Where the majority of the cases

in hospitals are dominated by females. So gender may be very closely related to the occurrence of urinary tract infection, specifically in females, due to the short urethra, which is anatomically close to the vagina, periurethral gland, and rectum which makes it easier for contaminant bacteria to gain access to the bladder and increase the occurrence of infection.

### 3. Education

Education is a process of efforts to increase the value of individual civilization or society from a certain situation to a better state, and the process is through research, discussion, or contemplation of problems or symptoms of educating actions (Neolaka, 2017). Researchers obtained data from Pradono and Sulistyowati about the relationship between education level, knowledge about environmental health, healthy living behavior, and health status in Central Jakarta, it was found that there was a positive and very significant relationship between education level and respondents' health status (Dewi, 2018). The results showed that the most education level of indicated Urinary Tract Infection is at the high school graduates as many as 25 respondents (65.8%), the lowest level of education is the group of college graduates as many as three respondents. (7.9%). The results of this study were due to the uneven distribution of respondents at each level of education so that there were many incidences of Urinary tract infection in patients with a high school education level. Researchers assume that the higher the level of education, the higher the knowledge about health because the information obtained about health is more than those with low education. On the other hand, the lower the education level, the lower a person's development of newly recognized values.

### 4. Knowledge

Knowledge is the result of human sensing or the result of knowing, namely the impression in human thought through its five senses. Most of the human knowledge is obtained through eyes and ears (Melasari, 2015). The results of this study indicate that 35 (92.1%) respondents had a sufficient level of knowledge, and 3 (7.9%) respondents had a low one. The results of this study are not in line with research conducted by several other researchers. The results of this study indicate that most of the respondents with sufficient knowledge have a low educational background including elementary, middle school, and high school. Researchers obtained data from Selamat (2020), concluded that his research was supported by previous research on knowledge about urinary tract infection that did not depend on the respondent's awareness of urinary tract infection. It could be due to a lack of information regarding urinary tract infection. In addition, several other studies conducted from various countries also reported that the correlation between knowledge and attitudes regarding urinary tract infection was similar, thus the level of knowledge could be influenced by the attitudes and educational background. (Selamat, 2020). The researcher assumes that knowledge can be motivated by a person's education or the respondent's awareness of health status, even though it is known that educational background and knowledge are closely related. However, in this case, the researcher did not conduct an in-depth study of the factors affecting the respondents' knowledge like information, experience, culture, and social.

### 5. Habit of holding urination

From a literature study, it was found that the habit of holding urination affects the wash-out mechanism, a mechanism for cleaning germs in the urine. The disturbance will cause germs to

be easily replicated. Holding urination can cause stagnation of urine and lead the bacteria to colonize (Marliasa, 2019). The results of this study indicate that there were 34 (89.5%) respondents who have the habit of holding urination, while 4 (10.5%) respondents are not accustomed. In this study, most respondents are accustomed to holding urination, especially when working. It makes respondents vulnerable to urinary tract infection. This research is in line with research conducted by (Said, 2018) which stated that the results of the statistical test found a relationship between the behavior of holding urine with the incidence of urinary tract infection (UTI) in patients at risk of urinary tract infection at KRMT Wongsonegoro Hospital, Semarang..

The results of a study conducted by Lina (2019) showed that the habit of holding urination made the informants susceptible to urinary tract infection. The effect of holding urination is a pain when urination and the bladder feels full. It is a sign that the stretch receptors are at work providing a stimulus for the sensation of urination and the pain experienced when urinating due to the pressure caused by the amount of urine being excreted too much in the bladder (Lina dan Lestari, 2019). Researchers also obtained data from Hermiyanty (2016), said that urinary tract infection are strongly influenced by environmental conditions, knowledge, and behaviour of life, namely the habit of holding urination, and make organic and inorganic materials dissolved in urine can crystallize and form stones that clog the urine and evoke infection (Hermiyanty, 2016). Researchers assume that most of the respondents have a habit of holding back urination. This increases the risk of infection. Not only that, the body's defence function will be disrupted in the urinary tract in fighting infection, namely the disruption of the function of excreting urine as a mechanism to naturally expel microorganisms. The habit of holding back urination will also cause urine stagnant and lead to urinary tract infection.

## CONCLUSION

Based on the results and discussion in the study entitled Characteristics of Patients with Urinary tract infection at the Pelamonia Hospital Makassar, the conclusions are as follows: the results showed that the most age in respondents was the 56-65 year age group, as many as 14 respondents. The results showed that the most gender in respondents were female group, as many as 20 respondents. The results showed that the most education level was high school graduates as many as 25 respondents. The results showed that the most knowledge level was 35 respondents with sufficient knowledge. The results showed that the most habit of holding urination was accustomed to holding urination as many as 34 respondents.

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