


## Analysis Of Factors Influencing The Incident Of Urinary Tract Infections In Pregnancy

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Article Info	ABSTRACT
<b>Keywords:</b> Urinary tract infection, pregnancy	Urinary tract infections are one of the most common health problems. There are several factors that influence the occurrence of urinary tract infections during pregnancy, namely, age, education, employment, income, gestational age also influence the occurrence of UTI. To analyze the factors that influence the incidence of urinary tract infections in pregnancy. This type of research uses Literature Review. A literature review study is a method used to collect data or sources related to a particular topic which can be obtained from various sources such as journals, books, the internet and other libraries. The design of this research is a Narrative Review design by analyzing 20 journals. Got it20 journals were reviewed, regarding the influence of the incidence of urinary tract infections on pregnancy where education, employment, level of knowledge, sexual relations, genital hygiene, socio-economics had a significant influence. There is a significant relationship between education, employment, level of knowledge, sexual relations, genital hygiene, socio-economics and the incidence of UTIs in pregnancy.
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### INTRODUCTION

Pneumonia Urinary tract infections are one of the most common health problems. The American Urology Association (AUA, 2016) says that the incidence of urinary tract infections is estimated at 150 million people worldwide per year. Urinary tract infections in the United States account for more than 7 million visits each year. Approximately 15% of all antibiotics prescribed to the United States population are given to people with urinary tract infections and several European countries show similar data.

Data from the Indonesian Ministry of Health in 2014 shows that the number of sufferers of urinary tract infections reached 90-100 cases per 100,000 population per year or around 180,000 new cases per year. The number of urinary tract infection patients at RSU GMIM Pancaran Kasih Manado tended to increase from 2014 to 2016 and was included in the 10 highest diseases. In 2016 the number of urinary tract infections in outpatients was in 10th place but the number increased to 1,051 patients.1 Urinary tract

infections are caused by various types of bacteria including E.coli, klebsiella sp, proteus sp, providenciaceae, citrobacter, P.aeruginosa, acinetobacter, enterococcus faecalis, and staphylococcus saprophyticus. Around 90% of UTIs are generally caused by E.coli.<sup>3</sup>

Urinary tract infections are caused by invasion of microorganisms ascending from the urethra into the bladder. Invasion of microorganisms that can reach the kidneys is facilitated by vesicoureteral reflux. In women, germs from the anus first colonize the vulva and then enter the bladder through the shortened urethra spontaneously or mechanically due to sexual intercourse and changes in pH and vulvar flora. Urinary tract infections can affect all age groups and genders. Where in women the incidence of UTIs is more common due to the short shape of the urethra, the absence of prostate secretions, and during pregnancy the urinary tract is easily contaminated with fecal flora.<sup>5</sup>

There are several factors that influence the occurrence of urinary tract infections during pregnancy, namely, age, education, employment, income, gestational age also influence the occurrence of UTI because the pressure from the gravid uterus on the ureters causes stasis of urine flow and is also related to humoral and immunological changes during normal pregnancy. , habits of holding BAK, personal hygiene, sexual history and history of previous urinary tract infections. Without realizing it, some of these risk factors are customary in society, therefore it is important for pregnant women to know these risk factors and be able to prevent them early to avoid UTIs during pregnancy.

## METHOD

This type of research uses Literature Review. A literature review study is a method used to collect data or sources related to a particular topic which can be obtained from various sources such as journals, books, the internet and other libraries. The design of this research is a Narrative Review design.

The data used in this literature is secondary data. Data was obtained by reviewing articles and scientific journals in the form of research related to analysis of factors that influence the incidence of UTI in pregnancy. The databases used are clinical key, Google Scholar, Gale, NCBI. The keywords used in this search were UTI risk factors, pregnancy

The inclusion criteria in this study were that the articles used were research articles from national journals, international journals, clinical key, NCBI, as well as lecturer citations and included articles or literature discussing urinary tract infections and pregnancy, while the exclusion criteria were literature published below. in 2017.

## RESULTS

From the results of this research which was carried out by means of a literature study, namely by collecting data from official sources in online media, a summary of the data was obtained as follows:

No	Research Title	Writer	Method	Publisher Year	Results
1.	<i>Urinary Tract Infection among pregnant women and its associated risk factors 1</i>	MirfatMohamed Labib Al-Kashif	Crosssectional studies	2019	Based on age, the incidence rate of UTI in pregnancy in get the most at the age of 35-45 years who are affected by UTI 40.7% with <i>p-value</i> There is a relationship of 0.004 between age and the incidence of UTI during pregnancy Based on the level of education, levels are obtained University
2.	Analysis of related factors with urinary tract infections in pregnancy	Dean AngelnaGinting, Endy Julianto, Alex Lumbanraja	Literature review use secondary data	2019	Based on the age of pregnant women, those aged 20-30 years are more susceptible to UTI. Based on the level of education, high school students are more susceptible to UTI. Based on employment status, pregnant women who work are more susceptible to UTI than those who do not work. Based on gestational age, pregnant women are susceptible to UTI in the 3rd trimester. Based on the habit of holding in urination, most pregnant women who are susceptible to UTIs during pregnancy are pregnant women who cannot hold back urination
3.	<i>Association Between Sexual</i>	Simin Haghdoost,	Case Control	2020	There is a relationship between sexual

No	Research Title	Writer	Method	Publisher Year	Results
	<i>and Genital hygiene Habits With the Urinary Tract Infection During Pregnancy: A case control study</i>	Farzaneh Pazandeh, MehdiKhabazkhoob, Tahereh Behroozi lak	Study		intercourse and genital hygiene and the incidence of urinary tract infections in pregnant women
4.	<i>Prevalence and Associate Risk Factor of Urinary Tract Infection in Pregnant Women Admitted to Maternity Wardin Jinja Regional Referral Hospital</i>	Junior JuliusSafari	Crosssectional studies	2023	Parity and agePregnancy greatly influences the prevalence of urinary tract infections. Based on age, urinary tract infections often occur in pregnant women between the ages of 20-30 years. Based on education level and socio-economic status, urinary tract infections often occur in low socioeconomic status and pregnant women with low educational levels
5.	<i>Prevalence of urinary tract infection among pregnant women in Kano, Northern Nigeria</i>	Muhammad Ali, Muhammad S. Abdallah	Crosssectional studies	2019	Based on the total sample, 23 pregnant women were found to have urinary tract infections. The average prevalence of UTI incidents in pregnant women is aged 26-30 years.Based on gestational age, the highest incidence is in the 3rd trimester. Based on socio-economic andeducation, the incidence of UTI is highest in pregnant women with socio-economic and

No	Research Title	Writer	Method	Publisher Year	Results
					low education
6.	<i>The Etiology of Urinary Tract Infection among Pregnant Women in a Tertiary Care Hospital</i>	Ferdossi Begum, Dipi Barua, Ayesha Nigar Nur	Prospective observational studies	2023	Majority pregnant women with UTI at the age of 25-31 years. Based on the level of education, it was found that pregnant women with the highest number of UTIs were at the secondary education level. Based on gestational age, the highest number was found in the 2nd trimester and there was a high presentation of UTIs in pregnant women with sexual activity >3 times in a week
7.	Parity and Gestational Age Related to UTI in pregnant women at Sanglah General Hospital	Mike Rizki Amalia, Anak Agung Gde Oka	Cross Sectional Study	2018	Gestational age has a significant relationship with the incidence of urinary tract infections in pregnant women with a p-value of 0.021, while parity shows an insignificant relationship with UTI in pregnant women
8.	<i>Prevalence of urinary tract infection in pregnant women in Kathar district, Bihar</i>	Tarannum Yasmin, M. Yosuf Sawar, Aninda Sen	Cross Sectional Study	2018	The results of the study showed that the highest prevalence of UTI in pregnant women was found at the age of 26-30 years and was highest in the third trimester of pregnancy, those who do not work are found to experience more UTIs than pregnant women who work. A

No	Research Title	Writer	Method	Publisher Year	Results
					significant relationship was found between gestational age and the incidence of UTI in pregnant women
10.	Description Incidence of Urinary Tract Infections in Pregnant Women at the Tabanan General Hospital Agency	Great ChildLidya Nirmala Dewi, Cokorda Dewi Widhya Hana Sundari, Ida Ayu Sri Anjani	Crosssectional studies	2018	The incidence of urinary tract infections based on age groups occurs most often in pregnant women in the 20-35 age group, based on gestational age, namely in pregnant women aged third trimester of pregnancy, based on sexual activity in pregnant women with a frequency of sexual activity of 1x/week, based on the level of education, namely pregnant women with elementary and high school education levels, based on the habit of changing underwear, namely pregnant women with the habit of changing underwear 2 or more times a day, and based on the habit of cleaning the urinary tract. external, namely in pregnant women who clean the external urinary tract from the front to the front behind
11.	Description of the incidence of urinary tract	Siti Nafisah, Zaky Mubarak	Descriptive cross-sectional	2023	The results of data analysis were carried out on 32 pregnant women, the majority

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	infections (UTI) in pregnant women in Singorojo Village, Kendal				(53%) of respondents with UTI indications were in the age group <25 years (59%), and the majority (55%) were in the first trimester.
12.	Number and Age of Pregnancy as Risk Factors for Urinary Tract Infections in Pregnant Women	Hariyona Fitrin, Asri. C. Adisasmita	Cross-sectional	2024	Among the 192 samples of pregnant women who underwent ANC, the prevalence of UTI occurred in 50 pregnant women (26%). This research found that UTIs tend to occur in multigravida and the second trimester. However, there was no significant relationship between the factors of number and gestational age on the risk of UTI in pregnant women ( $p = 0.07$ ; $p = 0.344$ , respectively).
13.	Urinary Tract Infection as a Risk Factor for Preterm Labor	Sugianto, I Wayan Megadhana, Ketut Suwiyoga, Tjokorda Gde Agung Suwardeva, I Gusti Putu Mayun Mayura, Anom Suardika, I Wayan Artana Putra	Case control study	2020	In this study, it was discovered that there were no significant differences in the characteristics of maternal age, gestational age and gravidity between the two groups ( $p > 0.05$ ). It is known that pregnancy with UTI (asymptomatic bacteriuria) increases the risk of preterm birth by 13 times compared to pregnancy without UTI (OR = 13.24; 95% CI = 1.53-114.30; $p = 0.005$ ).
14.	<i>Urinary Tract Infection and</i>	Ezekiel K. Vicar,	Cross-	2023	Of the 560 pregnant women, 223 cases

No	Research Title	Writer	Method	Publisher Year	Results
	<i>Associated Factors among Pregnant Women Receiving Antenatal Care at a Primary Health Care Facility in the Northern Region of Ghana</i>	Samuel EK Acquah, Williams Wallana, Eugene D. Kuugbee, Emmanuel K. Osbutey, Abigail Aidoo, Emmanuel Acheampong and Gloria Ivy Mensah	sectional		(39.8%) were positive for UTI. There was a statistically significant relationship between sociodemographic, obstetric and personal hygiene variables and UTI ( $p < 0.0001$ ). Escherichia coli (27.8%) was the most common bacterial isolate found, followed by CoNS (13.5%) and Proteus species (12.6%). These isolates showed greater resistance to ampicillin (70.1-97.3%) and co-trimoxazole (48.1-89.7%) but were moderately susceptible to gentamicin and ciprofloxacin.
15.	<i>Urinary Tract Infection as a Risk Factor for Preterm Delivery: A Tertiary Hospital-Based Study</i>	Nuring Pangastuti, Lathifa N Indraswari, Shinta Prawitasari	Retrospective cohort	2019	The research sample was taken from medical record data of 45 patients with preterm labor. Of the entire sample, only 25 patients (55.6%) had urinalysis examination data. Of these 25 patients, 15 (60%) had urinary tract infections (UTI) and preterm labor. Urinalysis results showed that 13 (86.7%) of the 15 patients had asymptomatic bacterial uria. Bacteriuria found in 15 subjects was not statistically significant when compared with the occurrence of preterm labor, the relative



No	Research Title	Writer	Method	Publisher Year	Results
					ratio was 1.083 ( $p = 0.581 > 0.05$ ). Multivariate logistic regression analysis showed that preterm birth was not directly related to UTI ( $p$ -value = 0.704), gestational age ( $p$ -value = 0.274), UTI symptoms (0.699), history of UTI ( $p = 0.999$ ), and history of coitus ( $p$ -value = 0.872).
16.	<i>Prevalence and Risk Factors of Urinary Tract Infection among Pregnant Women in Shahrekord, Iran</i>	Mehri Rejali ID, Seyede Soghra Ahmadi	Cross-sectional	2019	No significant association was observed between UTI and the variables age, BMI, maternal education and employment level, multi-fetal conditions, spotting problems, unwanted pregnancies, abortion, pre-pregnancy care, genitourinary problems, annual interval less than 3 in between two pregnancies, kidney disease, infertility, preeclampsia, and diabetes. In contrast, significant differences were seen in childbirth, severe vomiting during pregnancy, genitourinary problems, infertility, and blood type between the two groups.
17.	<i>Prevalence and Risk Factors of Urinary Tract Infection in</i>	Srija Voruganti, Saif Ali Khan	Systematic Review and	2023	Of the 45 studies, 41 studies were included for the prevalence of UTI in pregnant

No	Research Title	Writer	Method	Publisher Year	Results
	<i>Pregnant Women: Systematic Review and Meta-Analysis</i>		Meta-Analysis		women and 19 studies were included to evaluate risk factors. The prevalence of UTI in pregnant women in Africa is higher when compared with pregnant women in Asia (28.6% vs 20.7%). Risk factors that were statistically significantly associated with UTI were found to be underwear texture (silk), history of catheterization, diabetes mellitus, history of previous UTI and HIV.
18.	<i>Prevalence of Urinary Tract Infection and Possible Risk Factors Among Antenatal Women Attending GA Semiurban Tertiary Care Center in Central Travancore</i>	Amrutha Kirana VR, Jisha TU, Sara Mathew, Alice John, Molin Reeta Mathew	Cross-sectional	2023	The prevalence of UTI in pregnant women is 29.7%. The highest prevalence of UTI occurred in pregnant women in the third trimester (34.6%), followed by women in the second and first trimesters (27.4% and 25%). The highest prevalence of UTI was seen in primigravida (32.7%). Our study reported a high prevalence of UTI (40.7%) in women with a history of previous urinary tract infection. There was no statistically significant relationship between the risk factors taken in this study which included gravida, gestational age, trimester, history of previous abortion, ectopic pregnancy,

No	Research Title	Writer	Method	Publisher Year	Results
					GDM, PIH.
19.	<i>Risk Factors for Urinary Tract Infection in Hospitalized Patients</i>	Hadiati Setyorini, Artaria Tjempakasari, Nunuk Mardiana	Observational analytics	2019	Geriatric age and immobilization are risk factors for urinary tract infections, and urinary catheters, urolithiasis, and hyperglycemia are independent risk factors for urinary tract infections.
20.	<i>Urinary tract infections in pregnancy in a rural population of Bangladesh: population-based prevalence, risk factors, etiology, and antibiotic resistance</i>	Anne CC Lee, Luke C. Mullany, Alain K. Koffi, Iftekhar Rafiqullah, Rasheda Khanam, Lian V. Folger Mahmoodur Rahman, Dipak K. Mitra. et all	Cross-sectional	2020	The prevalence of UTI was 8.9% (4.4% symptomatic UTI, 4.5% asymptomatic bacteriuria). Risk factors for UTI in this population include maternal malnutrition (mid upper arm circumference <23 cm: aOR= 1.29, 95% CI: 1.03-1.61), primiparity (aOR= 1.45, 95% CI : 1.15-1.84), and low father's education (no education: aOR= 1.56, 95% CI: 1.09-2.22).

## Discussion

Next, below is an explanation of the research results from the references above, including: In the first journal written by Mirfat Mohamed Labib Al-Kashif entitled Urinary tract infection among pregnant women and its associated risk factors: the results showed that the research showed that the age characteristics of the majority, namely the 35-45 year age group, were susceptible to UTI, with p -value 0.04 means that there is a relationship between age and the incidence of UTI during pregnancy. Characteristics of respondents based on education, the majority of respondents had a university level education of 45 people, 27.8%, this was because the majority of respondents were university educated so this could cause bias. Characteristics based on work found that pregnant women who work are susceptible to UTIs at 57.4% with a p-value of 0.005, which means there is a relationship between work and the incidence of UTIs during pregnancy.

In the second journal written by Dea Angelina Ginting, Endy Julianto and Alex Lumbarjana entitled Analysis of Factors associated with urinary tract infections in pregnancy: in this journal there is a relationship between age, education, employment, gestational age and the habit of urinating BAK which is Factors related to the incidence of UTI in pregnant women. Based on the age of pregnant women in the 20-30 year age group, they are more susceptible to UTI, because at that age mothers tend to have many children (multiparity) which is at risk of being a factor in transmitting bacteriuria during pregnancy. UTI in pregnant women is highest at the high school education level, this is usually caused by a lack of knowledge of pregnant women about UTI. Based on employment status, pregnant women who work are more susceptible to UTI compared to those who do not work. 8

In the third journal written by Simin Haghdoost, Farzaneh Pazandeh, Mehdi Khabzakhoo, and Tahereh Behrooz Lak entitled Association between sexual and genital hygiene habits with the urinary tract infection during pregnancy: based on education level, the highest level of high school education was found in pregnant women with UTI. Based on gestational age, it was found that the highest incidence was in the third trimester, 50.8% of which were UTI.9

In the fourth journal written by Junior Julius Safari entitled Prevalence and Associated Risk Factors of Urinary Tract Infection in Pregnant women Admitted on Maternity Ward in Jinja Regional Referral Hospital: in the journal it was found that the highest age for experiencing UTIs was 20-30 years, based on pregnant women Those who work and experience UTIs are mostly found in pregnant women who work as farmers. Based on the level of education, the highest incidence of UTI was found in pregnant women whose educational level was not in school and the highest incidence was found in the 3rd trimester of gestation.

In the fifth journal written by Muhammad Ali and Muhammad S Abdallah entitled Prevalence of Urinary Tract Infection among Pregnant Women in Kano Northern Nigeria: in this study it was said that the prevalence of UTI in pregnant women showed that it was highest at the mother's age of 26-30 years. In accordance with the theory that UTI can occur in pregnant women at any age. Based on the theory, the healthy reproductive age for

a woman to get pregnant and give birth is 20-35 years, because at this age the reproductive organs are mature enough and ready for the pregnancy process. If the mother is less than 20 years old, there is a high risk because the reproductive organs are not yet ready to accept the results of conception and are not psychologically mature enough. Meanwhile, the age above 35 years is a high risk age because the reproductive organs have experienced a decline in function in the form of elasticity of the pelvic muscles and around other reproductive organs. When a person gets older, the body's defenses against foreign objects will also decrease so that they will be more susceptible to disease.

In the sixth journal written by dr. Ferodusi Begum, Dr Dipi Barua and Dr. Ayesha Nigar Nur entitled The Etiology of Urinary Tract Infection among Pregnant Women Teritary Care Hospital-Aprospective Observational Study. Reported that of 120 pregnant women, it was found that the average age of those experiencing UTI was 25-31 years, namely 39.17% with a secondary education level and a frequency of sexual activity that was > 3 times a week.

Next, in the seventh journal, entitled Parity and Gestational Age in Relation to Urinary Tract Infection (UTI) in Pregnant Women at Sanglah General Hospital and written by Mike Rizki Amalia and Anak Agung Gde Oka. In this research, it is said that the samples analyzed were 80 samples. Based on data from 75 pregnant women whose gestational age was in the third trimester, it was found that 35 pregnant women experienced UTIs and 40 pregnant women who did not experience UTIs. The results of the bivariate analysis carried out by the author showed that between gestational age and UTI in pregnant women, using chi-square calculations, the P-Value value was <0.05, which means there is a relationship between gestational age and the occurrence of UTI in pregnant women at Sanglah General Hospital. Meanwhile, according to existing theory, the urinary bladder will be compressed as the uterus enlarges so that the urinary bladder cannot empty completely. This causes bacteria to grow when urine is retained in the urinary bladder.<sup>5</sup>

In the eighth journal entitled Prevalence Of Urinary Tarct Infection in Pregnant Women in Kathar District, Bihar written by Tarannum Yasmin, M. Yosuf Sarwar et al. In the study, a sample of 252 was obtained, showing a total of 98 cases with the highest incidence of UTI, namely at the age of 26-30 years, pregnant women in the third trimester experienced the most UTI. In the ninth journal written by Manal Younis, Soad Ajroud et al with a journal entitled Prevalence of Urinary Tract Infection Among Pregnant Women and It's Rick Factor in Derna City. This research was conducted from 2017-2018. Carried out for all pregnant women who come to the Al-Najah clinic and Zahrat Al-Hayat clinic in Derna city for antenatal care. The total sample was 140 pregnant women and the highest age prevalence was found to be in the age range of 25-34 years with the majority of pregnant women in this study being university graduates and from a middle class economy. The highest urinary tract infections were found in the 3.14 trimester

In the tenth journal entitled Description of the Occurrence of Urinary Tract Infections in Pregnant Women at the Tabanan General Hospital Agency and written by Anak Agung L, Cokorda Dewi W et al. This research was conducted in 2017 with a population of 160 pregnant women visiting the obstetrics and obstetrics polyclinic at BRSU Tabanan. The

incidence of urinary tract infections in pregnant women based on age group was found to be highest in pregnant women aged 20–35 years.<sup>15</sup>

In the eleventh journal written by Siti Nafisah, Zaky Mubarak entitled Description of the Incident of Urinary Tract Infections (UTI) in Pregnant Women in Singorojo Village, Kendal. The results of data analysis were carried out on 32 pregnant women, the majority (53%) of respondents with UTI indications were in the age group <25 years (59%), and the majority (55%) were in the first trimester.

In the twelfth journal written by Hariyona Fitrin and Asri. C. Adisasmita entitled Number and Age of Pregnancy as Risk Factors for Urinary Tract Infections in Pregnant Women. From this study it was found that multigravida and second trimester factors had a higher incidence of UTI during pregnancy although they were not significantly related. Laboratory screening of pregnant women who are at risk, both symptomatic and asymptomatic, as well as ongoing education are recommended to prevent the incidence of UTI in pregnancy.

In the thirteenth journal written by Sugianto et al, entitled Urinary Tract Infection as a Risk Factor for Preterm Childbirth. In this study, it was discovered that there were no significant differences in the characteristics of maternal age, gestational age and gravidity between the two groups ( $p > 0.05$ ). It is known that pregnancy with UTI (asymptomatic bacteriuria) increases the risk of preterm birth by 13 times compared to pregnancy without UTI (OR = 13.24; 95% CI = 1.53-114.30;  $p = 0.005$ ).

In the fourteenth journal written by Ezekiel K. Vicar et al, entitled Urinary Tract Infection and Associated Factors among Pregnant Women Receiving Antenatal Care at a Primary Health Care Facility in the Northern Region of Ghana. The current findings indicate that a high prevalence of UTI exists among pregnant women in the northern part of Ghana. *Escherichia coli* was the most dominant bacteria isolated. UTI in pregnancy is associated with risk factors such as use of public defecation facilities, open defecation, and lack of good practices in genital hygiene after sex. The varying resistance patterns of isolates to various drugs observed in this study and the consequences of undiagnosed and untreated UTI support the need to perform urine culture and antibiotic susceptibility prior to treatment.

In the fifteenth journal written by Nuring Pangastuti entitled Urinary Tract Infection as a Risk Factor for Preterm Delivery: A Tertiary Hospital-Based Study. Research shows that premature birth is not statistically proven to have a relationship with the incidence of UTI. Other causes need to be considered. Routine urine analysis examinations for pregnant women can be considered as an effort to prevent preterm labor.

In the sixteenth journal written by Mehri Rejali ID, Seyede Soghra Ahmadi entitled Prevalence and Risk Factors of Urinary Tract Infection among Pregnant Women in Shahrekord, Iran. No significant association was observed between UTI and the variables age, BMI, maternal education and employment level, multi-fetal conditions, spotting problems, unwanted pregnancies, abortion, pre-pregnancy care, genitourinary problems, annual interval less than 3 in between two pregnancies, kidney disease, infertility, preeclampsia, and diabetes. In contrast, significant differences were seen in childbirth,

severe vomiting during pregnancy, genitourinary problems, infertility, and blood type between the two groups.

In the seventeenth journal written by Srija Voruganti, Saif Ali Khan entitled Prevalence and Risk Factors of Urinary Tract Infection in Pregnant Women: Systematic Review and Meta-Analysis. Of the 45 studies, 41 studies were included for the prevalence of UTI in pregnant women and 19 studies were included to evaluate risk factors. The prevalence of UTI in pregnant women in Africa is higher when compared with pregnant women in Asia (28.6% vs 20.7%). Risk factors that were statistically significantly associated with UTI were found to be underwear texture (silk), history of catheterization, diabetes mellitus, history of previous UTI and HIV.

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In the nineteenth journal written by Hadiati Setyorini, Artaria Tjempakasari, Nunuk Mardiana entitled Risk Factors for Urinary Tract Infection in Hospitalized Patients. Geriatric age and immobilization are risk factors for urinary tract infections, and urinary catheters, urolithiasis, and hyperglycemia are independent risk factors for urinary tract infections. In the twentieth journal written by Anne CC Lee, Luke C. Mullany et al, entitled Urinary tract infections in pregnancy in a rural population of Bangladesh: population-based prevalence, risk factors, etiology, and antibiotic resistance. The prevalence of UTI was 8.9% (4.4% symptomatic UTI, 4.5% asymptomatic bacteriuria). Risk factors for UTI in this population include maternal malnutrition (mid upper arm circumference <23 cm, primiparity and low paternal education.

## CONCLUSION

Type Based on the results of the research and discussion described in the previous chapter, the conclusion that can be drawn is that there is a relationship between the level of education and knowledge of pregnant women about UTIs, characteristics based on work, there is a relationship between the respondent's job and the level of knowledge of pregnant women about UTIs, the age of pregnant women the 20-30 year age group is more susceptible to UTI, high school education level is more susceptible to UTI. Based on employment status, pregnant women who work are more susceptible to UTI than those who do not work. Based on the gestational age of pregnant women who are susceptible to UTI in the third trimester, there is a relationship between sexual relations and genital hygiene with the incidence of urinary tract infections in pregnant women, urinary tract

infections often occur in pregnant women between the ages of 20-30 years, socio-economic and educational incidence UTI was highest in pregnant women with low socioeconomic and educational levels and parity showed an insignificant relationship to UTI in pregnant women.

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