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Description Of Risk Factors Associated With The Incident Of Urinary Tract Infections In Pregnant Women

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ABSTRACT
Throughout the world, infectious diseases are a problem that affects both developed and developing countries. After lung infections, urinary tract infections rank as the second most common health problem. Anatomically, women are more likely than men to experience urinary tract infections due to the shorter urethra in women. Pregnant women's bodies undergo structural and physiological changes that increase their chances of developing urinary tract infections. In pregnant women alone, there is a 20% incidence of urinary tract infections (UTI). Literature review with narrative review design.The results obtained were that pregnant women were more at risk of developing UTIs.Oobesity, multiparity, holding back urination, sexual relations and individual hygiene are some of the risk factors that will occurcan increase the risk of a more serious UTI.

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INTRODUCTION

Throughout the world, infectious diseases are a problem that affects both rich and developing countries. After lung infections, urinary tract infections rank as the second most common health problem. Anatomically, women are more likely than men to experience urinary tract infections due to the shorter urethra in women. Pregnant women's bodies undergo structural and physiological changes that increase their chances of developing urinary tract infections. Pregnant women have up to 20% of urinary tract infections.

The pregnancy process takes place from the moment of fertilization until the baby is born. Nine months pass after the sperm and egg unite to form a pregnancy. Pregnant women experience morphological, physiological and psychological changes. The third reason for high MMR (maternal mortality rate) is infection. Processes that occur during pregnancy and childbirth are sources of infection.

Significant anatomical changes occur in the kidneys and ureters. The length and weight of the kidneys have grown by one centimeter. Progesterone exerts its effect by dilating the renal calyces and pelvis. The ureters also lengthen and widen, forming curves of different diameters. Urine stasis and a higher risk of urinary tract infections during pregnancy may result from all of these conditions.

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The term “urinary tract infection” (UTI) describes bacterial colonization in urine that enters the tissues of the genital tract. The most common cause of UTIs is bacteria, followed by fungi and viruses. It is also most common during pregnancy for this infection. A significant health problem for pregnant women is urinary tract infections, which affect 20% of them.

The increased risk of UTI is also influenced by pregnancy; These effects begin in the sixth week of pregnancy and peak between the 22nd and 24th weeks. Past history of urinary tract infection (UTI), in addition to other variables such as poorer socioeconomic position, personal hygiene, higher parity, age of gravida and pregnancy, frequency of sexual activity, holding back urination, and absence of prenatal care (ANC) . Diabetes mellitus and urinary tract dysfunction (such as polycystic kidney disease) have the potential to make pregnant women more susceptible to UTIs.

METHOD

To avoid duplication of research and to discover new, unexplored subjects of study, this study used a narrative review design in conjunction with a literature review approach to find and summarize previously published publications. Finding a topic, searching for literature using a database of related articles, selecting literature, processing data, and drawing conclusions are the first steps in the research flow that produces a thesis for the narrative review model.

RESULTS

No.	Title	Writer	Year	Method	Results
1.	Factors Associated with Urinary Tract Infections (UTI) in Third Trimester Pregnant Women	Seventina Nurul Hidayah	2023	Method The research used in this research is an analytical survey with a Cross approach *Sectionals*.	- Based on the statistical results of the tested data, it can be seen and assessed that p = 0.089 and 95% CI = 0.185-1.431. So it was concluded that there was no significant relationship between obesity and UTI cases. The OR value = 0.5 means that pregnant women who are obese have a fairly large risk compared to mothers who have had a UTI once before. - The results of the research analysis using statistical tests showed that the odds ratio value was 2.343 (CI 95%) = 1.15 – 4.79. The incidence of

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					UTI was based on the habit of holding BAK at the Prof. Regional Hospital. Johannes Kupang. The results of this analysis show that there is a significant relationship between the habit of holding BAK and UTI cases. As many as 66.6% of pregnant women have the habit of holding BAK, the p value in the biavariate test is 0.002 (p<0.05). The process of urination is the process of flushing out microorganisms in the bladder. If urine is often retained, the organisms in the bladder can grow until they multiply and can invade or affect the surrounding tissue. Based on research conducted by Sholihah 2017, it shows that 20 respondents with the habit of holding BAK experienced UTI and 3 informants with the habit of not holding BAK. It can be concluded that the habit of holding BAK is a risk factor for UTI.
2.	Number and Age of Pregnancy as Risk Factors for Urinary Tract Infection in Pregnant Women	Hariyona Fitrin	2024	Study design*cross-sectional*which is observational analytical in nature. Kalideres District Community	The results of this study reported that more multigravidas experienced UTIs than primigravidas, respectively 27 (14%) and 23 (12%) of 192 (100%) pregnant women. However, no significant relationship was found between the number of pregnancies and the incidence of UTI.

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No.	Title	Writer	Year	Method	Results
				Health Center, West Jakarta is the focus location for this research. During 2023.	
3.	Description of the incidence of urinary tract infections (UTI) in pregnant women in Singorojo Village	Siti Nafisah	2023	This study used a descriptive cross-sectional survey as a research design in Singorojo village.	- From research obtained from data from 32 respondents, the most tThe indications for UTI were in the age group <25 years as many as 11 people (55%). - From the research results, data was also obtained that the majority of pregnant women experienced itUTI occurred in the second trimester with 10 respondents (59%).
4.	Knowledge Level of Pregnant Women About Urinary Tract Infections (UTI) in Sibolangit Village	Indah Sherbina Br Tarigan	2023	quantitative research and cross-sectional approaches.	The research results showed that the majority of pregnant women in Sibolangit Village were aged 20-30 years with a sufficient level of knowledge about UTI of 64.6%. The chi-square test showed there was no significant relationship between age and level of knowledge of UTI, while the level of education and employment of pregnant women showed a significant relationship with level of knowledge. This research highlights the risk of UTI at the age of 21-28 years, in contrast to the healthy reproductive age theory. Education and employment factors play an important role,

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					with low levels of education being associated with less UTI knowledge. These findings emphasize the need for special attention to formal education and employment status to increase pregnant women's knowledge about UTI in Sibolangit Village, in order to improve maternal and neonatal health.
5.	*A Review of Urinary Tract Infections In Pregnant Women: Risk Factors.*	Emmanuel Ifeanyi Obeagu	2023	The method used is descriptive.	- Age Urinary tract infections during pregnancy are common and high in the age group between 26-35 years. The high incidence of UTI in the young reproductive age group is caused by early pregnancy, especially in long-distance settings. Many studies consider that increasing age is a risk factor for UTI in pregnancy because there is a decrease in glycogen levels, deposition and decrease in Lactobacillus as part of the progression of aging which increases bacterial adherence and pathogen attack. and make them more vulnerable. The majority of urinary tract infections in pregnant women are found in the age group 26-30 years, followed by 21-25 years, and 31-35 years. The youngest age among those studied was 18 years and the oldest 45

No.	Title	Writer	Year	Method	Results
					years. - Level of education Lower education levels and lower socioeconomic levels have been correlated with higher prevalence of UTI in many countries studied and reported. This is because education improves women's attitudes and beliefs. However, according to the participants' education level, there was no significant relationship with UTI. - Socioeconomic Factors The prevalence of urinary tract infections was found to vary with the socio-economic status of the respondents. The prevalence is higher in women with low socioeconomic status compared to the middle and upper classes. - Obstetric Factors Gravidity: According to urinary tract infections in pregnancy, it occurs more often in women with first pregnancies (53.85%) than multi gravidae (46.15%). This study shows that nulliparous women are more susceptible to UTIs compared to multiparous women. A study in Nigeria also provided similar results. Parity and gestational age greatly influence the prevalence of urinary tract infections. This has been reported previously

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					in many studies. Gestational age: Pregnant women in the third trimester of the current pregnancy and those having more than one child are mostly susceptible to urinary tract infections. Many anatomical and hormonal variations in pregnant women cause urethral dilation and urinary inertia which increases changes in the development of UTI. Studies have shown that with respect to trimester, the majority of pregnant women with UTI are in the third trimester, followed by the second trimester and the first trimester. Bacteriuria is common at five to ten weeks of gestation, followed by ten to fifteen weeks and fifteen to twenty weeks. These findings are in line with the findings of research conducted by.

Discussion

The main focus of this review is on the risk factors associated with pregnancy-associated urinary tract infections. Anywhere in the genitourinary system is susceptible to urinary tract infections. Urinary stone disease and risk variables including age and gender, as well as behaviors such as holding urine, drinking water, and maintaining cleanliness of the genital area, were found to have a strong correlation with the prevalence of UTI.

Diseases that are classified as infectious are diseases that are often found throughout the world. After upper respiratory tract infections, which affect the population on average 9.3% of women over 65 and 2.5-11% of men over 65, urinary tract infections (UTIs) are the second most common infection. Between 40 and 60 percent, urinary tract infections are the most common nosocomial infections. Urinary tract infections (UTIs) are characterized by high levels of bacteriuria and the growth and multiplication of bacteria in the urinary system. Urinary tract infections can be classified into two categories based on anatomy: upper and lower tract infections. Any disease that affects the kidneys is classified as an upper urinary

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tract infection; All infections that affect the urethra, bladder, and prostate are classified as lower urinary tract infections. In other words, there are no bacteria, viruses, or other microbes in the urinary system in a healthy state. Stated differently, the diagnosis of UTI is determined by demonstrating the presence of microorganisms in the urinary tract. If the number of germs in the patient's urine is more than 105/ml, the patient is considered to have a severe urinary tract infection. Apart from being more common in women than men, this infection can affect anyone at any age in women but is rare in men under 50 years.

Trapping of urine in the urinary system is made more likely by the hormonal and mechanical changes that occur during pregnancy. In addition, the increase in the hormone progesterone associated with pregnancy causes the uterus to enlarge and gain weight, as well as loosening the smooth muscles in the urinary tract. The term “urinary tract infection” (UTI) describes bacterial colonization in urine that enters the tissues of the genital tract. The most common cause of UTIs is bacteria, followed by fungi and viruses. It is also most common during pregnancy for this infection.Pregnant women who have urinary tract infections are at risk of health complications; About 20% of these cases result in hospitalization. Between 2 and 13 percent of pregnant women are said to show no symptoms of the condition. Urinary stasis is caused by increased intrauterine pressure and narrowing of the uterine wall at the ureters. Bacterial growth is facilitated by changes in the chemical composition of urine, namely increased levels of amino acids and glucose. The risk of UTI is further increased by the humoral and immunological changes that occur during typical pregnancy.

Pregnant individuals with urinary tract infections (UTIs) are more likely to experience preterm labor, intrauterine growth restriction (IUGR), hypertension, early labor, and preeclampsia. Throughout their lives, 15% of women will suffer at least once from an acute episode of urinary tract infection. This infection can not only harm the fetus, but can also harm the mother. The development of bacteria occurs during pregnancy, especially in the first and third trimesters, as a result of the pregnant woman's behavior of retaining urine and incomplete urination, as well as poor maternal genital hygiene practices. There are many types of bacteria, such as staphylococcus saprophyticus, citrobacter, P-aeruginosa, klebsiella sp., proteus sp., providenciac, Ecoli, and enterococu faecali, but Ecoli is usually responsible for 90% of UTIs.

According to statistical analysis of the tested data, obesity is one of the risk factors for UTI in pregnant women ($p = 0.089$ and 95% CI = 0.185-1.431). Therefore, it was determined that there was no significant correlation between obesity and UTI cases. Compared with mothers who had a single UTI, obese pregnant women were at a much higher risk, as shown by the OR=0.5.

According to research analysis and statistical testing, holding BAK regularly increases the risk of UTI. The odd ratio value obtained was 2.343 (CI 95%) = 1.15 – 4.79. The frequency of urinary tract infections is determined by the BAK practice at RSUP Prof. Johannes Kupang. The findings of the analysis show a noteworthy difference between BAK retention habits in cases of UTI. According to the bivariate test, 66.6% of pregnant women were accustomed to holding BAK, with a p value of 0.002 ($p<0.05$).

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Flushing of germs from the bladder occurs during urination. Organisms in the bladder can multiply and spread if urine is retained frequently, potentially invading or affecting nearby tissues. According to research conducted by Sholihah 2017, it showed that 20 respondents with the habit of holding BAK experienced UTI and 3 informants with the habit of not holding BAK. It can be concluded that the habit of holding BAK is a risk factor for UTI.

Study findings showed that, of 192 pregnant women (100%) with risk factors, more multigravidas (27, or 14%) and primigravidas (23, or 12%) had UTIs. However, there was no clear correlation (p = 0.07) between the frequency of UTI and the number of pregnancies. According to Table 3, the second trimester had the highest incidence of UTI (11%), followed by the third trimester (10%), and the first trimester (5%) had the lowest incidence. Urinary stasis caused by stretching of the uterine wall in the ureters and increased intrauterine pressure could be the cause of the higher incidence during the second trimester. Bacterial growth is facilitated by changes in the chemical composition of urine, namely increased levels of amino acids and glucose.

One of the risk factors for pregnancy-related UTI problems is age (20 years). In this study, pregnant women in the age range 15-25 had a rather high frequency of UTI infections (Tazebew Emiru, Getenet Beyene, Wondewosen Tsegaye, 2013). When compared with women in the 15-25 age range, pregnant women in the 26-35 age range have a lower risk of developing urinary tract infections. Additionally, compared to women in the 15-25 age range, pregnant women in the 36-45 age group have a lower risk of developing a UTI.

Pregnant women who are in the first and second trimesters are more likely to get a UTI. Patients who are in the second trimester of their pregnancy have a higher proportion of candiduria. Additionally, those in the first trimester of pregnancy had greater rates of bacteriuria. According to other previous studies, bacteriuria is more likely to develop between the nineteenth and seventeenth weeks of pregnancy. To control for the age group of study participants, the current study was further analyzed using a binary logistic regression model, which showed first trimester prediction of UTI in pregnant women. Compared with women in the third trimester of pregnancy, those pregnant in the first trimester have a higher risk of developing a UTI infection. Because UTIs are very common during the first trimester of pregnancy, studies have shown that 59% of patients are indicated for UTIs during this time. The main risk factor for UTI infection is hormone production. The first trimester of pregnancy is characterized by rapid changes in hormone production and other aspects of pregnancy, and it is during this time that women experience unpleasant pregnancy symptoms.

The majority of pregnant women in Sibolangit Village are between 20 and 30 years old, and 64.6% of them have sufficient information about UTIs, according to research findings. Age and UTI knowledge level were not significantly correlated, according to the chi-square test, but pregnant women's occupation and educational attainment were significantly correlated with knowledge level. Contrary to the idea of a healthy reproductive age, this study emphasizes the risk of UTI between the ages of 21 and 28. Factors related to education and employment are particularly significant; lack of information about UTI

correlates with lower educational attainment. These results highlight the need to pay special attention to formal education and employment status to increase pregnant women's awareness of UTI in Sibolangit Village and improve maternal and newborn health.

Numerous studies and reports have found a correlation between higher prevalence of UTI and lower socioeconomic status and education level. This is because women's views and beliefs improve due to education. However, there was no clear correlation with UTI based on participants' educational attainment. The socio-economic position of respondents was found to have an impact on the prevalence of urinary tract infections. When compared with women in the middle and upper classes, the prevalence is higher among those with lower socioeconomic status.

CONCLUSION

Pregnancy-related UTIs remain a widespread problem, especially in developing countries. The habit of holding urine, poor genital hygiene, and low socioeconomic level are the main contributors to the prevalence of UTIs during pregnancy. This can occur due to a lack of knowledge about the risk factors for pregnancy-related UTIs and how to prevent them.

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