Section: Urology

Original Research Article

ANALYSIS OF SOCIODEMOGRAPHIC PROFILE OF URINARY TRACT INFECTIONS AMONG FEMALES AT A TERTIARY CARE HOSPITAL

Shakul Prakash Kaushik[1], Sushama Kaushik[2]

[1]Assistant Professor, Department of Urology, Subharti Medical College, Meerut, Uttar Pradesh, India.
[2]Assistant Professor, Department of Radiology, Subharti Medical College, Meerut, Uttar Pradesh, India.

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Corresponding Author:
Dr. Shakul Prakash Kaushik,
Assistant Professor, Department of Urology, Subharti Medical College, Meerut, Uttar Pradesh, India.
Email: drshakul@gmail.com.

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ABSTRACT

Background: Urinary tract infections (UTIs) are common these days. If left untreated, these infections can ascend to the upper urinary tract, involving the ureters and kidneys, potentially leading to significant renal damage. Hence; the present study was conducted for analysis of sociodemographic profile of urinary tract infections among females at a tertiary care hospital.

Materials & Methods: An evaluation was conducted involving 200 female participants. The inclusion criteria for this study required that subjects present to the urology department with a primary complaint of urinary tract infection (UTI). Comprehensive demographic information and medical histories were collected from all participants. Additionally, the past medical histories of these individuals were documented separately. Urine samples were collected from each patient and subsequently sent to a central laboratory for culture analysis. Participants were categorized into upper, middle, and lower socioeconomic classes based on the Modified Kuppuswamy scale.

Results: A total of 200 patients were evaluated. 34.5 percent of the subjects were of less than 30 years of age. 85.5 percent of the subjects were of rural residence. 49.5 percent of the subjects were of lower class while 44.5 percent and 6 percent of the subjects were of middle class and upper class respectively. 37.5 percent, 28.5 percent and 25 percent of the subjects had education upto postgraduation level, upto graduation level and upto secondary education respectively. 37.5 percent of the subjects were illiterate. 74.5 percent of the subjects were married.

Conclusion: Urinary tract infection (UTI) refers to the invasion of microbial pathogens within the urinary system. This condition manifests through a diverse array of symptoms, which can vary from mild dysuria to severe complications such as bacteremia or sepsis. In numerous developing nations, disparities in healthcare access contribute to socioeconomic health inequalities. Individuals with lower socioeconomic status are more likely to experience a higher incidence of UTIs.

Key words: Urinary Tract Infection, Sociodemographic.

INTRODUCTION

Urinary tract infections (UTIs) are common in the developing nations, resulting in 10.5 million ambulatory visits and 15% of outpatient-prescribed antibiotics annually. Escherichia coli causes the majority of UTIs, and the prevalence of infections caused by drug-resistant E. coli has grown worldwide. Antibiotic use drives drug resistance by selecting for strains with gene mutations or acquired mobile genetic elements. A broad literature on the social determinants of health has found low individual- and community-level socioeconomic status (SES), as well as being foreign born in a high-income country, to be associated with increased risk of general infection and antibiotic-resistant infection.[1,2]

If left untreated, these infections can ascend to the upper urinary tract, involving the ureters and kidneys, potentially leading to significant renal

damage. Additional complications associated with UTIs include cystitis (bladder infection), urethritis (urethral infection), pyelonephritis (kidney infection), and ureteritis (infection of the ureter).[3,4] Pregnant women experiencing UTIs face an increased risk of developing hypertensive disorders during pregnancy, anemia, chronic renal failure, premature delivery, and low birth weight infants. The term UTI encompasses both asymptomatic bacteriuria and symptomatic infections characterized by microbial invasion and inflammation of the urinary tract. Although approximately 90% of individuals with UTIs report urinary symptoms—such as increased frequency of urination, dysuria, and a burning sensation during urination—over one-third of these patients may not exhibit bacteriuria. Asymptomatic bacteriuria refers to the presence of a specific quantitative count of bacteria in a properly collected urine sample from an individual who does not display any symptoms or signs indicative of a urinary infection.[5-7] Hence; the present study was conducted for analysis of sociodemographic profile of urinary tract infections among females at a tertiary care hospital.

MATERIALS AND METHODS

An evaluation was conducted involving 200 female participants. The inclusion criteria for this study required that subjects present to the urology department with a primary complaint of urinary tract infection (UTI). Comprehensive demographic information and medical histories were collected from all participants. Additionally, the past medical histories of these individuals were documented separately. Urine samples were collected from each patient and subsequently sent to a central laboratory for culture analysis. Participants were categorized into upper, middle, and lower socioeconomic classes based on the Modified Kuppuswamy scale, as previously described in the literature. All data were recorded in a Microsoft Excel spreadsheet and analyzed using SPSS software. The Chi-square test was employed to evaluate the level of significance.

RESULTS

A total of 200 patients were evaluated. 34.5 percent of the subjects were of less than 30 years of age. 85.5 percent of the subjects were of rural residence. 49.5 percent of the subjects were of lower class while 44.5 percent and 6 percent of the subjects were of middle class and upper class respectively. 37.5 percent, 28.5 percent and 25 percent of the subjects had education upto postgraduation level, upto graduation level and upto secondary education respectively. 37.5 percent of the subjects were illiterate. 74.5 percent of the subjects were married.

Table 1: Demographic data

Variable		Number	Percentage
Age group	Less than 30	69	34.5
	30 to 50	82	41
	More than 50	49	24.5
Residence	Rural	171	85.5
	Urban	29	14.5
Socio-economic status	Upper class	12	6
	Middle class	89	44.5
	Lower class	99	49.5

Table 2: Education qualification of subjects

Variable	Number	Percentage
Illiterate	75	37.5
Upto secondary	57	28.5
Upto graduation	50	25
Postgraduation	18	9
Total	200	100

Table 3: Marital status

Marital status	Number	Percentage
Married	149	74.5
Unmarried	51	25.5
Total	200	100

DISCUSSIONS

A urinary tract infection (UTI) is defined by the detection of over 100,000 microscopic organisms per milliliter of urine, often accompanied by clinical manifestations such as cystitis, pyelonephritis, and asymptomatic bacteriuria. UTIs can affect individuals of various ages and both genders; however, their prevalence is notably higher in females. This increased incidence can be attributed to anatomical factors, such as the shorter female urethra and its proximity to the anus, as well as hormonal influences. UTIs represent a significant health concern for women, particularly during pregnancy, with estimates suggesting that approximately 10-20% of women experience these infections. The majority of UTIs are attributed to bacterial pathogens, predominantly those originating

from the gastrointestinal tract, which can invade the urethra by contaminating the perianal region and subsequently ascend to the bladder. The likelihood of developing UTIs is further heightened during pregnancy due to physiological alterations in the urinary system.[8-10] Hence; the present study was conducted for analysis of sociodemographic profile of urinary tract infections among females at a tertiary care hospital.

A total of 200 patients were evaluated. 34.5 percent of the subjects were of less than 30 years of age. 85.5 percent of the subjects were of rural residence. 49.5 percent of the subjects were of lower class while 44.5 percent and 6 percent of the subjects were of middle class and upper class respectively. 37.5 percent, 28.5 percent and 25 percent of the subjects had education upto postgraduation level, upto graduation level and upto secondary education respectively. 37.5 percent of the subjects were illiterate. 74.5 percent of the subjects were married. Muthulakshmi M et al estimated the prevalence rate of UTI among females of reproductive age group and to determine the association between socio demographic factors and prevalence of UTI. Prevalence of UTI among females of reproductive age group was found to be 20.4%. There was a strong statistically significant association between levels of education of the study subjects, the socio-economic status and UTI. UTI is a serious public health problem if untreated. Early diagnosis and prompt treatment will prevent the chances of developing further complication of UTI and will help to reduce the sufferings of the patient, hospital stay and economic loss.[10] Almukhta SH et al identified the prevalence of urinary tract infection among women in reproductive age. The study found that 58.4% of participants belonged to 21-30-year age group followed by 26% who belonged to 31-40-year age group. 48.4% of the study participants were illiterate, 27.3% had Secondary school graduates and 24.3% had Diploma or Bachelor degree. The majority of the women 70.2% were housewives. The total prevalence rate of UTI was 27.3%. The higher percentage of UTIs 43% was found among pregnant women. The majority of women with UTIs were housewives 65.9% from rural areas 72.4%, and illiterate 62.6%. The study concluded that the prevalence of UTIs in pregnant women was higher than that of non-pregnant and unmarried women and that Staphylococcus.[11]

Urinary tract infection among the population of Kanyakumari District, South India was studied in another previous study conducted by Christy VR et al. A clinical examination of the suspected cases showed culture positive in the samples taken from males (37.23%) and females (37.99%). The age wise study of the culture positive cases indicates that the UTI infection occurs from infants (1 month) to elderly people (90-100 years). In the study area the percentage of UTI is common in women in the reproductive age and post-menopausal stage. Diabetic mellitus prevalent in post-menopausal women has a link with UTI incidence. In the elderly aged male's diabetes and prostrate problem enhances UTI. The pregnant women and newly married women in the age group 21-30 are more prone to UTI. The present study also reports pediatric UTI in both genders. Lifestyle changes, poor personal hygiene, nutritive problem, catheter use, unclean baby napkins and immune deficiency were identified to be the factors favoring UTI in the study area.[12] Another set of authors reported that 71.5% of adolescent girls were having poor knowledge regarding UTI and 87% has poor practice standard. Another study showed that about 77% of respondents correctly recognized bacteria as the principal pathogens behind UTIs and 80% recommended antibacterial drugs for the treatment of UTIs. About 60% had poor knowledge on the complications of untreated UTIs.[13,14]

CONCLUSION

Urinary tract infection (UTI) refers to the invasion of microbial pathogens within the urinary system. This condition manifests through a diverse array of symptoms, which can vary from mild dysuria to severe complications such as bacteremia or sepsis. In numerous developing nations, disparities in healthcare access contribute to socioeconomic health inequalities. Individuals with lower socioeconomic status are more likely to experience a higher incidence of UTIs.

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