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## **Assessment of Knowledge and Prevalence of Urinary Tract Infections among Kanyakumari Population**

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### **Abstract**

A community-based survey was conducted to evaluate the knowledge and prevalence rate of Urinary Tract Infections among the residents of Kanyakumari district. The data was obtained from individuals of both genders with age group ranging from 1 to 80 using self-structured questionnaires. The results of this study revealed that the prevalence of UTI among the study group was about 45% and 20.33% of the

study group was unaware of UTI. It was found that there exist people without adequate knowledge on UTI restricting them from taking remedial measures during episodes of UTI. This study came to a conclusion that awareness programs are required to address the gaps on UTI among public especially among youngsters.

**Keywords:** Urinary Tract Infections, Prevalence, Awareness, Survey, Kanyakumari

### **1. Introduction**

Urinary tract infections (UTIs) are extra-intestinal bacterial infections commonly experienced by people from neonate to geriatric age groups<sup>[1]</sup>. Though reported in both genders, women are found highly vulnerable to UTI than men because of some clinical features such as behavioral pattern, anatomical differences and hormonal effects<sup>[2, 3]</sup>. It is reported that every year around 150 million people are encountered with UTI worldwide<sup>[4]</sup>. Though 60% of UTIs are managed in the primary care centers<sup>[5]</sup>, the increasing emergence of antibiotic resistant uropathogens in recent years is of great concern<sup>[6]</sup>. Hence, the treatment should be done based on specific antimicrobial susceptibility pattern<sup>[7]</sup>.

Investigation of epidemiology of UTIs based on its prevalence, risk factors, antibiotic susceptibility of bacterial isolates, etc can direct the clinicians to provide better treatment to the patients<sup>[8]</sup>. Community based survey study on UTI in Kanyakumari district is found very few in literature survey.

With this background, this study was planned to find out the epidemiology of UTI among people of Kanyakumari district with the following objectives:

- To estimate the prevalence rate of UTI among people of Kanyakumari district in association with socio-demographic variables, and health and hygienic practices.
- To assess the insight of knowledge on UTI among the study group.

### **2. Methods**

**Research approach:** Non - experimental, quantitative approach<sup>[9, 10]</sup>.

**Study design, area and period:** Population based cross - sectional descriptive study carried out in rural, semi-urban and urban areas of Kanyakumari district, Tamil Nadu for a period of six months from March 2018 to August 2018.

**Study population and sample size:** 4500 individuals of both genders from age 1 to 80 residing in Kanyakumari district. Size of the sample chosen was 1500.

**Study tool:** A standardized self - structured questionnaire consisting questions on socio-demographic variables, health and hygiene, awareness on UTI and about clinical history.

**Data collection and analysis:** The data was collected by interviewing the willing participants using self-structured questionnaire. The collected data were analyzed and the results were calculated in percentages.

**Ethical clearance:** The participants were briefed about the rationale of the study. Confidentiality was assured to all the

participants. Participation was strictly voluntary and only verbal consent was obtained from willing participants prior to the data collection.

### 3. Result and Discussion

The prevalence of UTI among the study group was found to be 45%. The prevalence of UTI in association with socio-demographic characteristics was presented in Table 1.

**Table 1:** Prevalence of UTI in association with socio-demographic characteristics

Characteristics	Total Participants	UTI Affected	Prevalence Rate
<b>Gender</b>			
Male	580	200	34.48
Female	920	475	51.63
<b>Marital Status</b>			
Married	972	483	49.69
Unmarried	485	173	35.67
Widowhood	43	19	44.18
<b>Caste</b>			
Hindu	800	365	45.62
Christian	500	206	41.20
Muslim	200	104	52.00
<b>Area of Residence</b>			
Rural	590	251	42.54
Semi-Urban	355	134	37.74
Urban	555	290	52.25
<b>Type of Family</b>			
Joint	870	312	35.86
Nuclear	630	363	57.61

This study observed that the incidence of UTI was found high among the females (51.63%) in comparison to males (34.48%). In association with age group, women of age ranging from 11 to 60 were more susceptible to UTI whereas men above age 60 were found more prevalent with UTI. In case of children (age 1 to 10), males were more susceptible to UTI than females. This study also showed that there exists higher prevalence of UTI among married individuals (49.69%) than unmarried (35.67%).

There was a great difference in incidence of UTI in people of urban (52.25%) and rural areas (42.54%). Though there was no significant involvement of income and education with UTI prevalence, occupational status played a significant role. Because, it was observed that working personnel like teachers (54.16%) and nurses (57.5%) are highly susceptible to UTI. Also, the occurrence of UTI was about 53.33% among personnel of police department and fire and rescue services. A vital finding was that the school and college going students especially the female students of age 11 to 24 were frequently suffering from UTI with an incidence rate of 54.54%.

Based on health and hygienic practices, this study showed that the prevalence of UTI was high among non-vegetarians (47.09%) than vegetarians (36.48%). Hence, the prevalence of UTI in association with other diseases like diabetes, cholesterol, heart diseases should be studied, as this study revealed the incidence of UTI was higher among those patients.

UTI is found higher in those who intake water less than one liter (81.25%) than in those who drink water around three liters (30.15%). Prevalence of UTI is higher in those who hold urine (57.21%) than in those who do not hold urine (30.07%). About 55% (825) of the study group hold urine due to several reasons which include lack of hygienic toilets,

during class hours, work load, while travelling, etc. About 672 participants do not wash their genitals after urination, of which 56.69% were affected with UTI.

It was observed that 144 female participants changed their sanitary pads only one time, of them 115 was affected with UTI. Meanwhile, only 72 (33.64%) of 214 participants who change their sanitary pads four times a day were infected with UTI. Most of these participants were encountered with UTI after their menstrual cycles.

Among the participants, 305 (20.33%) of them were unaware of UTI, whereas 1195 know what UTI was by experience and/or from family members, friends and media. The fact behind this finding was that the awareness from family and friends was not limited by sharing their knowledge but also provides the information that some among them were encountered with UTI. 1107 people knew the causes of UTI whereas 393 do not know the causes. They believe on multiple reasons as the causative of UTI which include intake of less water, holding urine, kidney problems, pregnancy, diabetes, unhygienic toilets, bacteria, etc.

Other findings regarding awareness were tabulated (Table 2) as follows:

**Table 2:** Awareness on UTI

A) Complications known to participants	No. of participants	%
Don't know	601	40.06
Recurrent UTI	30	2
Bladder infection	67	4.46
Kidney infection	732	48.8
Sepsis	48	3.2
Prostate gland infection	5	0.33
Uterus infection	17	1.13
B) What you do, if symptoms occur?	No. of participants	%
Don't know	93	6.2
Avoiding	47	3.13
Self-medication	120	8
Consult a physician	1240	82.66
C) Do you know to prevent UTI?	No. of participants	%
Don't know	393	26.2
Drink excess water	587	39.13
Improve personal hygiene	251	16.73
Reduce salt intake	10	0.66
Consult a physician	243	16.2
Herbal products	16	1.06
D) How UTI is to be treated?	No. of participants	%
Don't know	373	24.86
Excess water intake	356	23.73
Antiseptic solution	27	1.8
Antibiotics	599	39.93
Herbal products	53	3.53
Consult a physician	92	6.13

Regarding clinical history of the respondents, 675 (45%) was experienced with UTI. Among them, 88% of UTI positive participants took medicines whereas 12% of them do not take any medicines against UTI. 98 participants rely upon herbal products.

Among the respondents, 92 of them get UTI due to hospitals, among those 17 got infections while staying as inpatient in hospitals, 14 got infections due to catheters, 18 as hospital staff and 43 were infected while staying hospitals

as bystanders. Of the participants, 20.59% (139) of them get infection only once whereas 22.37% (151) get infection twice. 5.18% of them not noticed the frequency of attack while 51.85% (350) of them get infection  $\geq 3$  times in their life time.

80.53% of the participants are willing to depend upon on allopathic medicine while 8% of the participants believe homeopathic medicines as a good remedy for UTI. 4% of the respondents depend on Siddha medicines while 2.06% would like self-medication for treating UTI. 66.6% believe antibiotics as an effective drug against UTI, while 24.06% do not think antibiotics are effective against UTI. 61.33% of the participants knew the ill effects of antibiotics whereas 29.33% doesn't know about ill effects of antibiotics. 3.70%, 18.37%, 14.37% and 9.62% got infection repeated after 2 weeks, 1 month, 6 months and 1 year, respectively, whereas 33.33% doesn't noticed the frequency of infection occurred since they experienced UTI many times.

UTI not only causes physical discomforts and financial crisis, but also affects adversely the mental health of victims. The problems faced by UTI patients include pain, anger, fear, sad, tension, concentration loss, rough behaviors and loss of money. 72.2% (1083) of the participants believe UTI is avoidable if necessary measures such as intake of sufficient amount of fluids, improving personal hygiene, using hygienic toilets at right time, etc are followed, while 18.46% (277) strongly believe UTI is not avoidable.

#### 4. Conclusion

This study was undertaken to estimate the prevalence of UTI among Kanyakumari district population in association with socio-demographic variables, health and hygienic practices, knowledge on UTI and its potential effects by conducting a community-based survey using self-structured questionnaires. 4500 individuals of both genders of age 1 to 80 voluntarily participated in this study. The prevalence of UTI among the study population was found to be 45% with higher incidence in females. Though monthly income and education have no role in UTI prevalence, marital history was found to have significant relation with UTI. Lack of more number of public toilets and the presence of unhygienic toilets made many persons to hold urine. Also professionals in teaching, medical and police departments mostly avoid frequent water intake and urination due to work load and lack of hygienic toilets. More studies should be done to find out the correlation between incidence of UTI with other diseases like diabetes, heart diseases, thyroid, uterine bleeding, etc.

This study also reveals that 79.66% of the study group has an average knowledge on UTI obtained not only by experience, but also from family, friends and through media. Most of the participants prefer antibiotics only because it provides rapid recovery, but most of them are unaware of the ill effects of antibiotics. The symptoms of UTI bring great discomfort physically and mentally to the victims. Hence it is necessary to create adequate knowledge among people, especially the young generation thereby early diagnosis, prevention and/or management of UTI that will help them to lead a healthy life in future.

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