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## Community Based Study on Knowledge Attitude and Practice towards Urinary Tract Infection among College Girls in Chitradurga



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### ABSTRACT

**Introduction:** Urinary tract infection is bacterial infection that affects the urinary tract. It is mainly caused by micro-organisms such as E. coli, staphylococcus aureus, klebsiella pneumonia, etc. which infect urethra, bladder, ureters, and kidneys of the urinary system. The symptoms of UTI include blood in urine, cloudy urine, foul urine, pain or burning micturition. Urinary tract infections are common in females more than 3 times rate of men. **Objectives:** The study was aimed to assess the knowledge, attitude and practices on urinary tract infection among college girls. **Materials and methods:** A cross sectional study was carried out on selected pharmacy and nursing college girls between the age group of 18-25 years in Chitradurga, for a period of six months. A pre designed online google form questionnaire were used, which contain questions related to knowledge, attitude and practice towards UTI. SPSS software was used to calculate the statistical significant. **Results:** A total of 262 subject in the age group of 18-25 years were enrolled. The study results shows that pharmacy students with a mean score of 11.53 had more knowledge when compared with nursing students with knowledge of mean score of 10.15. The age group of 24-25 years had better knowledge when compared to the age group of 18-19, 20-21, and 22-23 years. **Conclusion:** Urinary tract infection prevalence is more in Adolescent girls, where better knowledge, attitude and practice about disease contribute to improve health status. Studies on UTI should be conducted to create awareness in society.



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## INTRODUCTION

Urinary tract infection (UTI) is a wide term which represent the infection of the urinary system that occurs when microorganisms load increases in urinary tract. It shall affects lower and upper urinary tracts. It is the most frequent of all diseases that afflict people throughout their lives. This disease can observed in all the age groups in the society i.e. new born to the elderly, females of all ages are particularly affected.<sup>1</sup>

Clinical characteristics of pyelonephritis UTI include frequency, dysuria urgency, and suprapubic discomfort back/flank or loin aches. Urethritis refers to the inflammation of the ureter include frequent urination, urine that is bloody or cloudy, pain in your abdomen, swollen legs. Cystitis is inflammation of the bladder that includes haematuria, passing frequent, small amount of urine, burning sensation when urinating, and pelvic discomfort. Urethritis is inflammation of urethra that includes dysuria, burning micturition. Urinary frequency, dysuria, and suprapubic discomfort are the most common symptoms of lower urinary tract infections. Other symptoms include mild incontinence, haematuria, and, if the upper urinary tract is implicated, fever, nausea, vomiting, and back pain. For the evaluation of individuals with these infections, a personal history, clinical examination, urinalysis, and routine blood laboratory testing are required. Sexual activity, spermicide usage, and a family history of urinary tract infections (UTIs) in the mother and child Residual urine, urinary incontinence, and increased BMI, and structural abnormalities of the urinary system are all risk factors for UTIs. . It was mentioned that recent sexual intercourse and a history of recurrent UTIs are two important risk factors for UTI in young women.<sup>2</sup>

Urinary tract infections (UTIs) are significant medical conditions that impact millions of individuals each year. They are the second most prevalent form of infection in the body, resulting in around 8.3 million hospital visits each year. UTIs are caused by bacteria in the urine, although fungi and viruses can also play a role. Within a year, the majority of women will have a recurring infection. 75-90 percent of uncomplicated UTIs are caused by *E. coli*, whereas *Staphylococcus saprophyticus* is responsible for 5-15 percent of UTIs in younger women. In certain situations, *Enterococcus* and other gram-negative rods other than *E. coli* have been implicated.<sup>3</sup>

The persistent isolation of > 10<sup>5</sup> colony forming units (cfu) of bacteria per ml of clean voided mid-stream urine specimens plated within 6 hours of the collection is considered as significant bacteria. Slow-growing microaerophiles including *Lactobacillus*,

Corynebacterium, and Streptococcus miler may play a role in the aetiology of urinary tract infections in females. The onset of symptoms is frequently triggered by sexual activity.<sup>3</sup>

Gram-negative bacilli in the family Enterobacteriaceae, which mainly belong to the genera Escherichia, Proteus, Klebsiella, Enterobacter, and Pseudomonas, are the most common cause of urinary tract infection. The goal of this study is to identify the pathogenic bacteria that are usually associated with urinary tract infection among students living in the University of Agriculture, Abeokuta's hostels, and to describe them.<sup>4</sup>

There are only a few studies considering women's knowledge, attitude, and practice (KAP) regarding counselling about personal hygiene in UTI patients. It serves as an educational diagnosis of the community. The main purpose of this KAP study is to explore changes in KAP of the community, paramedical personnel, and medical practitioners. UTIs are over-diagnosed and treated in older people and narrow-spectrum antibiotics are generally preferable to broad-spectrum agents. Pharmacists can be considered the most important resource in the health system and may have a great impact on public health.<sup>5</sup>

Lower urinary tract infection is more common in adolescent girls. Because 80 percent of UTIs in adolescence are avoidable, it is important that adolescent girls get proper education on UTI prevention and care.

The present study is aimed to assess the knowledge attitude and practices and to compare the knowledge on urinary tract infection among SJM College of pharmacy students and SJM institute of nursing college girls.

## **MATERIALS AND METHODS**

**Study design:** A cross-sectional study.

- **Study site:** The study was conducted in randomly selected girls studying in SJM College of Pharmacy and SJM Institute of Nursing Science at Chitradurga.

**Study period:** The study was conducted for a period of six months.

**Study subjects:** The girl's students (18-25 years) from SJM College of Pharmacy and SJM Institute of Nursing Science who met the following criteria were enrolled.

**Inclusion Criteria:**

- Girls' students of age group 18-25 years.
- Students from SJM College of Pharmacy and SJM Institute of Nursing Science, Chitradurga.

**Exclusion Criteria:**

- Students who are not interested in participating in the survey.
- Participants who provide incomplete information.
- Students less than 18 years of age and more than 25 years of age.

**Ethical approval:**

The study was approved by the Institutional Ethical Committee (Ref No. SJMCP/689/2021-2022) of SJM College of Pharmacy Chitradurga.

**Sources of data:**

- Demographics of the students.
- A valid online google form questionnaire was given to the College students.

**Study procedure:**

- The study was initiated after obtaining the consent from Institutional Ethical Committee (IEC). After obtaining the informed consent form, the questionnaire was distributed to the college students in Chitradurga.

- A self-administered online google form questionnaires on knowledge, attitude and practice towards Urinary Tract Infection among College Girls in Chitradurga. It consists of three parts:

Part 1: Socio-demographic data.

Part 2: Knowledge-based questions (17 questions with options).

Part 3: Attitude and practice-based questions (13 questions with options).

- Data was collected by the investigators and confidentiality maintained during the data

collection process.

❖ **KNOWLEDGE REGARDING UTI:**

- 1) What is the full form of UTI?
  - A) Ureter tract infection
  - B) Upper tract infection
  - C) Urinary tract infection
  - D) Urethral tract infection
- 2) Among these which are the symptoms of urinary tract infection (UTI)?
  - A) Fever and rashes
  - B) Burning micturition and back pain
  - C) Diarrhea and fever
  - D) Abdominal pain and muscle pain
- 3) What are the causes of UTI?
  - A) Improper perineal washing
  - B) Inadequate water intake
  - C) Menstrual unhygienicity
  - D) Unclean sexual intercourse
  - E) All the above
- 4) What are the risk factors for UTI?
  - A) Inadequate water intake
  - B) Holding your pee
  - C) Menopause
  - D) All the above
- 5) Which organism causes UTI?
  - A) Bacteria
  - B) Virus
  - C) Protozoa
  - D) Don't know
- 6) Urinary tract infection is mostly seen in?
  - A) Males
  - B) Females
  - C) Elders



- D) Both A&C
- 7) Which part of the system in our body is affected in UTI?
- A) Respiratory system
  - B) Urinary system
  - C) Digestive system
  - D) Reproductive system
- 8) Urinary system consists of?
- A) Kidneys, ureters, urinary bladder, urethra
  - B) Kidneys, gall bladder, ureters, urethra
  - C) Kidneys, vagina, urethra, urinary bladder
  - D) Kidney, anus, vagina, urinary bladder
- 9) How do you diagnose UTI ?
- A) Urine Analysis
  - B) Blood test
  - C) ELISA
  - D) Montoux test
- 10) Which type of bacteria is E. coli?
- A) Gram +Ve
  - B) Gram -Ve
  - C) Gram neutral
  - D) Don't know
- 11) What do you mean by cystitis?
- A) Uterus infection
  - B) Lower urinary tract infection
  - C) Upper urinary tract infection
  - D) Vaginal infection
- 12) Reason why female are affected by UTI?
- A) Shorter length of urethra
  - B) Urethra is in close proximity with vagina and anus
  - C) Both A and B
  - D) I don't know
- 13) What is Pyelonephritis?
- A) Upper urinary tract infection



B) Lower urinary tract infection

C) Vaginal infection

D) Bladder infection

14) What is hematuria?

A) Blood in urine

B) Blood in feces

C) Glucose in urine

D) Don't know

15) Bladder infection is called .....

A) Meningitis

B) Nephritis

C) Cystitis

D) Pyelonephritis

16) Which is the drug that is preferred for UTI with G6PD (glucose-6-phosphate dehydrogenase) deficient patient?

A) Cefuroxime

B) Tetracycline

C) Doxycycline

D) Gentamicin



17) Drinking water may provide some relief from UTI pain?

A) False

B) True

C) I don't know

D) May be

❖ **ATTITUDE AND PRACTICE REGARDING UTI**

1) Have you experienced Urinary Tract Infection any time?

A) Yes

B) No

C) May be

D) Don't know

2) With whom you discussed when you got UTI?

A) With your parents

B) With your friends

- C) Doctor  
D) Nobody
- 3) Is there any treatment for UTI?  
A) Yes  
B) No  
C) May be  
D) Don't know
- 4) Do you know treatment for UTI?  
A) Yes  
B) No  
C) Not sure  
D) May be
- 5) a) Do you hold urine when you felt urgency in urinating?  
A) Always  
B) Sometimes  
C) Never  
D) Often
- b) If you do so when?  
A) During exam  
B) During journey  
C) Always  
D) Never
- 6) How often you use Public/common toilets?  
A) In Collage Hours  
B) During journey  
C) Always  
D) Never
- 7) How do you dry your under garments?  
A) Direct under sunlight  
B) In shade  
C) Under fan  
D) Using electrical device
- 8) How long you keep a napkin during menstruation?





- A) Less than 4 hours
  - B) 4 to 6 hours
  - B) 6 to 8 hours
  - C) More than 8 hours
- 9) Do you take bath during menstruation?
- A) Usually
  - B) Never
  - C) Sometimes
  - D) Always
- 10) Which method you follow for perineal washing?
- A) From anus to urethra
  - B) Urethra to anus
  - C) Both A and B
  - D) Other method
- 11) Is UTI preventable?
- A) Yes
  - B) No
  - C) Don't know
  - D) May be
- 12) How can you prevent UTI?
- A) Drink more water
  - B) Urinate when you feel you need to
  - C) Avoid tight fitting clothes
  - D) Use cotton cloth
  - E) All the above
- 13) How many liters of water do you drink per day?
- A) Less than 2 liter
  - B) 2 liter
  - C) 3 liter
  - D) 4 liter
  - E) More than 4 liter



## Statistical Analysis

All the relevant data was entered in Microsoft excel and analysed by SPSS software. Categorical data was analysed by frequency distribution method and quantitative data was analysed by central tendency distribution and by measures of dispersion.

## RESULTS

### 1. Distribution of the students according to age.

262 students were included in this study. The majority of 97(37%) students belonged to the age group of 20-21.88(33.6%), 40(15.3%) and 37(14.1%) were under the age group of 22-23, 24-25 and 18-19 respectively. These results are graphically represented in figure; No.01.

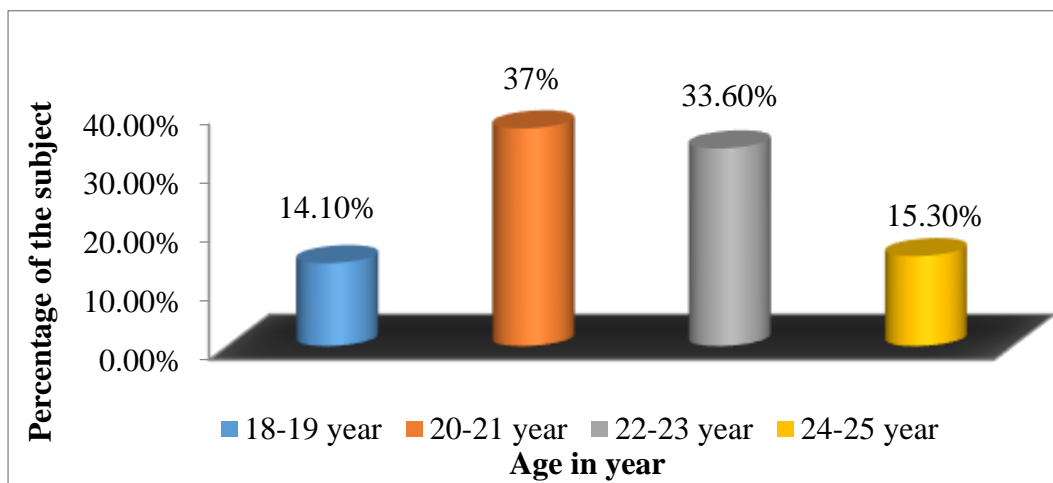


Figure 01: Distribution of the students according to age.

### 2. Distribution of the students according to college

In this study 262 participants have completed the online questionnaire. 144(55%), 118 (45%) students belong to SJMINS and SJMCP girls college respectively. The results are graphically represented in figure No.02.

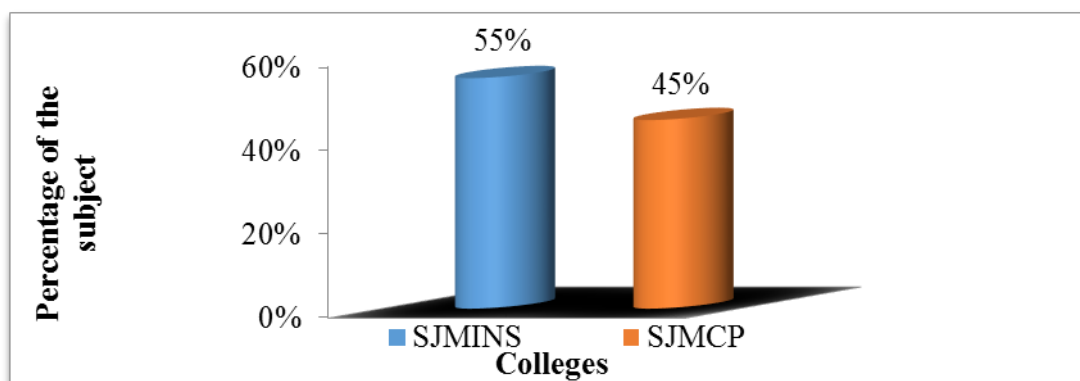


Figure No. 02: Distribution of the students according to college.

### 3. KNOWLEDGE-BASED QUESTIONS

262 students were involved in this study, 88.9% students had given the correct full form of UTI. Most of the 59.9% (students) responded correct answered for symptoms of UTI (Burning micturition and back pain). Most of the students (64.1%) responded correct answered for causes of UTI. Most of the students (54.2%) were known about the risk factors for urinary tract infection, most of the students (74%) were known about the UTI caused by bacteria, 73.7% students were known information about that Urinary tract infection is mostly seen in females, 74% students were known about which part of the system in our body is affected urinary system in UTI, 60.3% students were known about that Urinary system consists of Kidneys, ureters, urinary bladder, urethra. 71% students were known about the diagnosis of UTI. 59.2% students were known about the type of E.coli, 44.7% students were known the lower urinary tract infection is the cystitis, 50.4% students were known about the reason for females being affected with UTI, 70.6% students were known the Inflammation of kidney is pyelonephritis, 69.5% students were known about hematuria (Blood in urine), 60.7% students were known the bladder affecting infection is called cystitis, only 32.1% students known about the drug that is preferred for UTI with glucose-6-phosphate dehydrogenase deficient patient and 72.9% students know the drinking water may provide relief from UTI pain. These results are shown in Table.No.01

Table.No.01: knowledge Assessment of UTI

S.NO	QUESTIONS	RESPONSE	FREQUENCY	PERCENTAGE
1	<b>What is the full form of UTI?</b>	Urinary tract infection	233	88.9%
		Upper tract infection	21	8.0%
		Ureter tract infection	4	1.5%
		Urethral tract infection	4	1.5%
Q2	<b>Among these which are the symptoms of UTI?</b>	Abdominal pain and muscle pain	29	11.1%
		Burning micturition and back pain	157	59.9%
		Diarrhea and fever	34	13.0%
		Fever and rashes	42	16.0%
Q3	<b>What are the causes of UTI?</b>	Improper perineal washing	6	2.3%
		Inadequate water intake	34	9.2%
		Menstrual unhygienicity	44	16.8%
		Unclean sexual intercourses	20	7.6%
		All the above	168	64.1%
Q4	<b>What are the risk factors for urinary tract infection?</b>	Holding your pee	42	16.0%
		Inadequate water intake	41	15.6%
		Menopause	37	14.1%
		All the above	142	54.2%
Q5	<b>Which organism caused UTI?</b>	Virus	16	6.1%
		bacteria	194	74.0%
		Protozoa	23	11.1%
		Don't know	23	8.8%
Q6	<b>Urinary tract infection is mostly seen in?</b>	Male	10	3.8%
		Female	193	73.7%
		Elder	26	9.9%
		Both A and B	33	12.6%
Q7	<b>Which part of the system in our body is affected by UTI?</b>	Digestive system	33	12.6%
		Reproductive system	26	9.9%
		Respiratory system	9	3.4%
		Urinary system	194	74.0%

Q8	<b>Urinary system consists of ?</b>	Kidney,anus,vagina,urinary bladder	15	5.7%
		Kidneys,gall bladder,ureters,urethra	40	15.3%
		Kidneys,ureters,urinary bladder,urethra	158	60.3%
		Kidneys,vagina,urethra,urinary bladder	49	18.7%
Q9	<b>How do you diagnosis of UTI?</b>	Blood test	34	13.0%
		ELISA	30	11.5%
		Mantoux test	12	4.6%
		Urine analysis	186	71.0%
Q10	<b>Which type of bacteria is E.coli?</b>	Gram -ve	155	59.2%
		Gram +ve	66	25.2%
		Gram neutral	22	8.4%
		Don't know	19	7.3%
Q11	<b>What do you mean by cystitis?</b>	Lower Urinary tract infection	117	44.7%
		Upper Urinary tract infection	62	23.7%
		Uterus infection	59	22.5%
		Vaginal infection	24	9.2%
Q12	<b>Reason for why females are affected by UTI?</b>	Shorter length of urethra	54	20.6%
		Urethra is in close proximity with vagina and anus	54	20.6%
		Both A and B	132	50.4%
		I don't know	22	8.4%
Q13	<b>What is pyelonephritis?</b>	Inflammation of gall bladder	22	8.4%
		Inflammation of kidney	185	70.6%
		Inflammation of liver	26	9.9%
		Inflammation of lung	29	11.1%
Q14	<b>What is hematuria ?</b>	Blood in feces	38	14.5%
		Blood in urine	182	69.5%
		Glucose in urine	32	12.2%
		Don't know	10	3.8%
Q15	<b>Bladder affecting infection is called.....</b>	Cistitis	159	60.7%
		Meningitis	30	11.5%
		Nephritis	48	18.3%

		Pyelonephritis	25	9.5%
Q16	<b>Which is the drug that is preferred for UTI with G6PD (glucose-6-phosphate dehydrogenase) deficient patient?</b>	Cefuroxime	84	32.1%
		Doxycycline	54	20.6%
		Gentamicin	24	9.2%
		Tetracycline	100	38.2%
Q17	<b>Drinking water may provide relief from UTI pain?</b>	True	191	72.9%
		False	20	7.6%
		May be	21	8.0%
		I don't know	30	11.5%

#### 4. ATTITUDE AND PRACTICE ASSESMENT

Table 2 about majority of the students (46.6%) have not experienced UTI, 28.6% students have discussed with doctor about UTI, 64.1% students know about the availability of the treatment for UTI, 47.3% students know about knowledge of the treatment for UTI, 68.3% student sometimes holding urine even if they feel like urinating. The majority of the students (49.6%) have reported holding urine even feel like urinating during journey, 26% students holding urine even feel like urinating during exam, 13.7% students never hold urine even if they feel like urinating and 10.7% students always hold urine even if they feel like urinating, most of students (42%) are using common toilet in college hours, 37.4% students are using common toilet during journey, 11.1% students are always using common toilet and 9.5% students are not using common toilets, 63.7% students are drying under garments in direct under sunlight 14.9% students are drying under garments in shade, 14.9% students are drying under garments in under fan and 6.5% students are drying under garments in using electrical device. , The majority of 41.6% students are keeping a napkin during menstruation for 4 to 6 hours, 40.1% students are keeping a napkin during menstruation for less than 4 hours, 11.8% students are keeping a napkin during menstruation for 6 to 8 hours. 6.5% students are keeping a napkin during menstruation for more than 8 hours, The majority of the students (38.5%) are usually taking bath during menstruation, 93(35.5%) students are always taking bath during menstruation, 15.3% students are not taking bath during menstruation and 10.7% students are sometimes taking bath during menstruation, The majority of the students (34.4%) were following anus to urethra and urethra to anus, 30.5% students were following

urethra to anus, 19.5% students were following anus to urethra and 15.6% students were following other method. The majority of the students (61.5%) are saying that UTI is preventable, 16% students don't know whether UTI is preventable, 15.6% students are saying that UTI is not preventable and 6.9% students are saying that UTI may be preventable. The majority of students (61.5%) are known about how to prevent UTI, 17.9% students agree that drinking more water will prevent UTI infection, 12.2% student saying that frequent urination will help in prevention of UTI, 11.5% students are saying that avoiding tight fitting cloth will help in preventing UTI and 3.4% student saying that using cotton cloth will help in preventing UTI. The majority of the students (30.9%) are drinking 2 liter per day, 26.7% students are drinking 3 liter per day, 15.6% students are drinking less than 2 liter per day, 14.9% students are drinking more than 4 liter per day and 11.8% students are drinking 4 liter per day. These results are shown in Table.No.02.

**Table.No.02: Assessment to attitude and practice towards UTI**

S.NO	QUESTIONS	RESPONSE	FREQUENCY	PERCENTAGE
Q1	<b>Have you experienced UTI at any time?</b>	Yes	82	31.3%
		No	122	46.6%
		Maybe	38	14.5%
		Don't know	20	7.6%
Q2	<b>With whom you discussed when you got UTI?</b>	With your friends	57	21.8%
		With your parents	63	24.0%
		Doctor	75	28.6%
		Nobody	67	25.6%
Q3	<b>Is there any treatment for UTI?</b>	Yes	168	64.1%
		No	37	14.1%
		Maybe	41	15.6%
		Don't know	16	6.1%
Q4	<b>Do you know treatment for UTI?</b>	Yes	124	47.3%
		No	55	21.0%
		May be	15	5.7%
		Not sure	68	26.0%
Q5	<b>a) At any time you</b>	Always	22	8.4%

	<b>hold urine even if you feel like urinating?</b>	Often	13	5.0%
		Sometimes	179	68.3%
		Never	48	18.3%
Q5	<b>b) If you do so, when?</b>	Always	28	10.7%
		Never	36	13.7%
		During exam	68	26.0%
		During journey	130	49.6%
Q6	<b>How often you use public/common toilets?</b>	Always	29	11.1%
		Never	25	9.5%
		During journey	98	37.4%
		In college hours	110	42.0%
Q7	<b>How do you dry your under garments?</b>	Direct under sunlight	167	63.7%
		In shade	39	14.9%
		Under fan	39	14.9%
		Using electrical device	17	6.5%
Q8	<b>How long you keep a napkin during menstruation?</b>	Less than 4 hours	105	40.1%
		4 to 6 hours	109	41.6%
		6 to 8 hours	31	11.8%
		More than 8 hours	17	6.5%
Q9	<b>Do you take bath during menstruation?</b>	Always	93	35.5%
		Usually	101	38.5%
		Sometimes	28	10.7%
		Never	40	15.3%
Q10	<b>Which method do you follow for perineal washing?</b>	From anus to urethra	51	19.5%
		Urethra to anus	80	30.5%
		Both A and B	90	34.4%
		Other method	41	15.6%
Q11	<b>Is UTI preventable?</b>	Yes	161	61.5%
		No	41	15.6%
		Don't know	42	16.0%
		May be	18	6.9%



Q12	<b>How can you prevent urinary tract infections?</b>	Drink more water	47	17.9%
		Urinate when you feel you need to	32	12.2%
		avoid tight-fitting clothes	30	11.5%
		Use cotton cloth	9	3.4%
		All the above	144	55.0%
Q13	<b>How many liters of water do you drink per day?</b>	Less than 2 liter	41	15.6%
		2 liter	81	30.9%
		3 liter	70	26.7%
		4 liter	31	11.8%
		More than 4 liter	39	14.9%

### College wise distribution scores

Out of the study population of 262 participants, 144(55%) belong to SJMINS and 118 (45%) belongs to SJMCP college girls respectively. The score means were 10.15 and 11.53, The Std. deviation were 4.489 and 3.646 respectively. This shows that SJMCP students have more knowledge than SJMINS. The details are graphically showed in figure no.3.

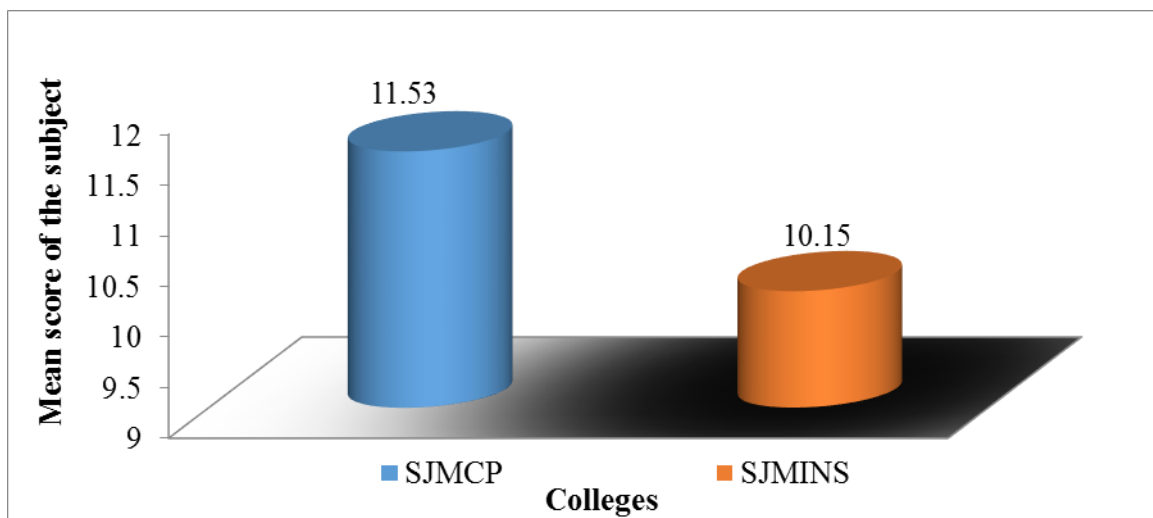


Figure No: 3: College wise distribution score

## 5. Age wise distribution score

Among the college students of various age group 18-19, 20-21, 22-23, 24-25 year, the score of mean are 10.92, 9.58, 11.51 and 11.91 respectively. That is 24-25 years students have more knowledge than compare to other age group. The results are graphically represented by graph No.18.

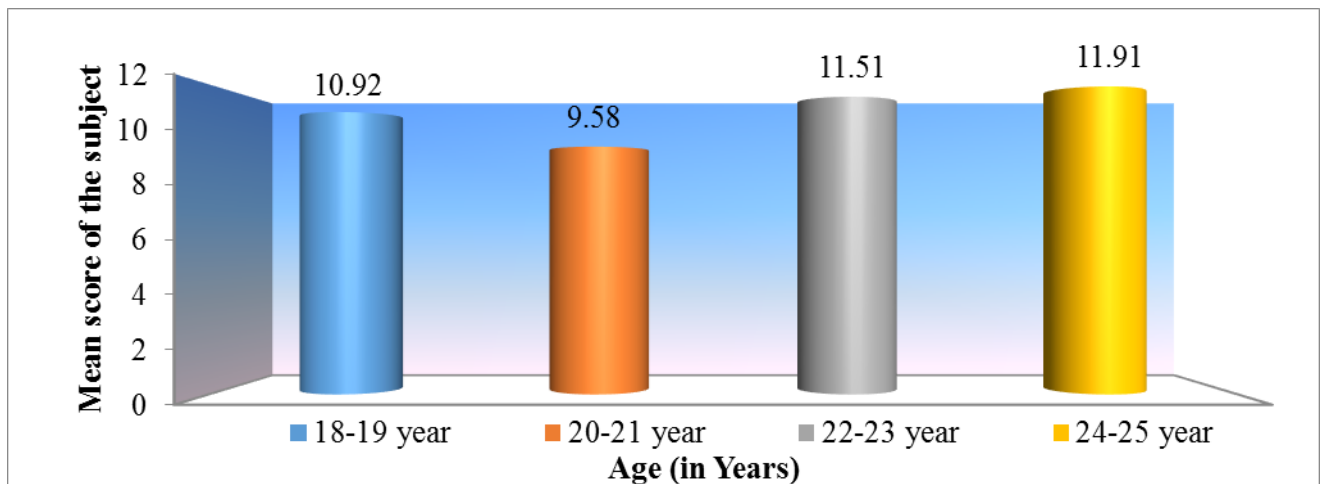


Figure No.4: Age wise distribution score

## DISCUSSION

A urinary tract infection (UTI) is an infection in the urinary tract, that is kidneys, ureters, bladder and urethra . It is caused by microbes including fungi, viruses, and bacteria. Bacteria are the most common cause of UTIs. UTIs occur more commonly in women than men. UTIs are the second most common type of infection in the body, about 8 million visits to health-care providers each year. Approximately 1 in 3 females will have had a UTI by age 24 years. The most common cause of uncomplicated UTIs is Escherichia coli, which accounts for 85% of community- acquired infections. Additional causative organisms in uncomplicated infections include Staphylococcus saprophyticus, Klebsiella pneumoniae, Proteus spp., Pseudomonas aeruginosa, and Enterococcus spp.

The study was aimed to assess knowledge, attitude and practice among college girls (18-25 years). It was carried out among the college of SJM Institute of Nursing Science and SJM College of Pharmacy in Chitradurga. The study observed a satisfactory level of knowledge, attitude and practices on UTI among the enrolled individuals.

A cross-sectional study was carried out in S.J.M college of Pharmacy, Chitradurga and S.J.M Institute of Nursing Science, Chitradurga for a period of six months. During the study period a total of 262 students was selected from girls who fits the study criteria and was enrolled in the study. The knowledge mean score of S.J.M college of pharmacy students (11.53 ) was more compared with nursing students (10.15). The S.J.M college of pharmacy have better knowledge than S.J.M college of nursing science. The knowledge of the student participants of age group 24-25 years was high when compared to that students of age group 18-19,20-21,22-23 years.

Similarly, study result from Y Goutham *et al.*, which also a cross-sectional study based on assessment of knowledge, attitude, and practice of pharmacist in providing patient counselling on urinary tract infection and its treatment shows that community pharmacist scored low knowledge when compared to the pharmacy internship students.<sup>6</sup>

Similarly, result were found to be Amitha Raj *et al.*, conducted a knowledge and self-reported practices regarding prevention of urinary tract infection among adolescent girls in selected college of Mangalore. This study indicates that majority of subjects (44%) have a good knowledge and less number of subjects have a poor knowledge regarding prevention of urinary tract infection. The majority of the subjects (58%) have a favourable practice and no one has unfavourable practice regarding prevention of UTI.<sup>7</sup>

In our study out of 262 students of college girls of age group (18-25 year of age) participated in the study. The majority of the students (46.6%) didn't have experienced UTI. The students who have experienced UTI is 31.3%, the students who have responded as may be is 14.5% and who have responded no are 7.6%. Hence through the results of survey, it is quite clear that students have developed a positive attitude<sup>2</sup> towards the UTI.

Similarly, result were found to be **Neni Widiasmoro Selamat *et al.***, (2020) carried out a study regarding Awareness, Knowledge & Attitude on Urinary Tract Infection among Government Secondary School Students in Shah Alam, Malaysia. Their study reported that a positive attitude towards UTI developed in student.<sup>8</sup>

In our study we found that most of the students (63.7%) dry their inner wears direct under sunlight whereas only (14.9%) use shade and electric fan to dry their garments. This practice shows that they were well aware of the benefits of drying under direct sunlight which include the prevention of UTI by killing the bacteria that causes it. Also majority of students (41.6%)

keep napkin for time period in between 4 to 6 hours followed by 40.1% using for less than 4 hours which indicates a good sign of hygiene and positive impact of intervention so as to develop healthy and cleanly practice among the adolescent girl students participated in this study. This study also revealed strong association between UTI and improper perineal washing technique, use of unsanitary pads during menstruation, long hours of keeping a napkins similar results were revealed by other south Indian studies by Singh M M *et al.*,<sup>56</sup> and Narayan BK. A *et al.*,<sup>9</sup>

While going through the response using questionnaire from Students it has been found that the majority of the students does perineal washing in both ways (34.4%) ie, from anus to urethra as well as from urethra to anus, followed by 30.5% who follows perineal washing from urethra to anus , 19.5% follows anus to urethra and least participants follows other methods (15.6%) of perineal washing.

**Ahmed SM *et al.***, (2009) Conducted study regarding girls practicing improper perineal washing technique .The result revealed a comparison that girls practicing improper perineal washing technique suffered more (8.3) from urinary infection.<sup>10</sup>

Also the study revealed that majority of the students (61.5%) were aware of the treatment of UTI and given response as UTI is preventable whereas 15.6% have given the response as doesn't know and 18% of the participants have given the response as may be. This shows the complete unawareness and the lack of proper knowledge about the UTI among the latter students.

**Walter E *et al.***, (1984) conducted a study regarding the prevention of UTI the study revealed that UTI is preventable where compared and preventive method have been daily expending to improve the quality of goals by comparison the result there is an improvement in knowledge attitude and practice regarding UTI.<sup>11</sup>

Thus in the current study it has been found that lack of menstrual hygiene, improper perineal washing, improper method of drying undergarments, dysfunctional voiding pattern, use of public toilets (in College hours),using the same napkins, holding urine are the main contributing factors for UTI in adolescent girls.

## CONCLUSION

The study concludes the need of knowledge, attitude and practice to overcome urinary tract infections disease is essential, in order to build healthy environment. Such studies could bring positive impact on health status among teenagers.

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