

Knowledge, Attitude and Practice of Urinary Tract Infection among Female in Aseer Region

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ABSTRACT

Design: A descriptive cross-sectional study.

Aim: The current study aims to assess the knowledge, attitude and practice of urinary tract infection among female in Aseer region.

Methods: A descriptive cross-sectional study was conducted targeting all women in Aseer region aging 18 years or more. All accessible women in general population were invited to fill the uploaded questionnaire consecutively during the period from April-2021 to October 2021 The questionnaire included women personal data, women knowledge of UTI, attitude and perception and practice regarding UTI. Questionnaire was uploaded online using social media platforms by the researchers and their relatives and friends.

Results: A total of 855 females fulfilling the inclusion criteria completed the study questionnaire. Female ages ranged from 18 to more than 40 years with mean age of 31.6 ± 9.7 years old. Exact of 615 71.9% females were married and 205 24% were single. Exact of 80.5% of the study participants know what is UTI. A total of 14.6% defined UTI as inflammation of the bladder, 9.9% defined it as inflammation of the urethra, and 74.3% defined as inflammation of bladder, kidney and urethra. As for causes of UTI, only 108 12.6% correctly reported for personal hygiene while 73.3% told about bacteria. A total of 569 66.5% participants reported experiencing UTI which was for only once per year among 58.3% of them, and for 2 times per year among 18.6%. Ad for symptoms experienced, 76.1% had pain in urination, 71.2% complained of abdominal pain, 56.6% had urge, 50.4% experienced frequent urination, while 41.5% had fever.

Conclusion: The study revealed that nearly two out of each three women were knowledgeable regarding UTIs and about one out of each two showed good perception and attitude. Women practice regarding UTIs was also satisfactory especially for seeking for medical consultation and fluid intake.

Keywords: Urinary tract infections, Women, Knowledge, Awareness, Attitude, Perception, Practice

INTRODUCTION

Urinary tract infections UTIs initiated by the existence of bacteria in the genitourinary tract, though fungi and viruses may have a role^{1,2}. The urinary tract includes the bladder, Kidneys, Ureters, and Urethra. UTIs are a common disorder affecting millions of people annually and they are the second most common type of infection in humans^{3,4}. UTIs are reported at all age groups, but women chiefly pregnant group showed higher risk than men, due to short urethra, pregnancy related genitourinary tract changes, easy contamination of urinary tract with faecal flora and various other factors^{5,6}.

Most of women experience recurrent infection within short duration^{6,7}. The most reported a causative bacterium is E. coli which responsible for 75 - 90% of uncomplicated UTIs⁸, and Staphylococcus saprophyticus

causes UTI among 5 - 15% of younger women⁹. Other pathogens such as enterococcus and other gram-negative rods were also identified in some cases¹⁰.

UTIs mostly diagnosed by clinical presentation and laboratory findings of urine. Clinically, manifestation of UTIs differs and clinical symptoms includes lower abdominal pain, fever of unknown origin and foul-smelling urine¹¹. UTI must be adequately treated to avoid many complications such as hypertension, renal failure, and intrauterine Fetal death, preterm labour, low birth weight, preeclampsia among pregnant females¹².

A new concept to women's health comprises health promotion and health protection throughout their life. Recently, women's care

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includes total assessment, planning, treatment, education, counselling and support for proper health. Medical care endorses and ensures adequate health practices, provides patient teaching and provides the women with knowledge in order to recognize the signs and symptoms of urinary tract infection to facilitate early detection and treatment of future infection¹³. The current study aims to assess the knowledge, attitude and practice of urinary tract infection among female in Aseer region and also to detect determinants of women knowledge and attitude levels.

METHODOLOGY

A descriptive cross-sectional study was conducted targeting all women in Aseer region aging 18 years or more. Females less than 18 years and recently transferred to Aseer region less than 6 months, and those who did not fill the study questionnaire were excluded. After having ethical approval and due to the current environment due to covid-19 pandemic, online questionnaire was used for data collection. All accessible women in general population were invited to fill the uploaded questionnaire consecutively during the period from April-2021 to October 2021. The questionnaire was developed by researchers after comprehensive literature reviews and expert's consultation. Study questionnaire validity was assessed by a panel of 3 experts in urology with applying all suggested modifications by consensus. Also, reliability and clarity were assessed using pilot of 30 women who were excluded from the main study with α -Cronbach's of 0.71. The questionnaire included women personal data, women knowledge of UTI, attitude and perception and practice regarding UTI. Questionnaire was uploaded online using social media platforms by the researchers and their relatives and friends.

Data Analysis: After data were extracted, it was revised, coded, and fed to statistical software IBM SPSS version 22SPSS, Inc. Chicago, IL. All statistical analysis was done using two tailed tests. P value less than 0.05 was statistically significant. For knowledge and perception items, each correct answer was scored one point and total summation of the discrete scores of the different items was calculated. A woman with score less than 60% of the total score was considered to have poor knowledge / perception while good knowledge / perception was considered if she had score of 60% or more of the total score. Descriptive analysis based on frequency and percent distribution was done for all variables including women demographic data, knowledge regarding UTI, attitude and perception, and their practice and behaviour with UTI. Cross tabulation was used to assess distribution of women knowledge and perception levels regarding UTI according to their personal data and history of experiencing UTI. Relations were tested using Pearson chi-square test and exact probability test for small frequency distributions.

RESULTS

A total of 855 females fulfilling the inclusion criteria completed the study questionnaire. Female ages ranged from 18 to more than 40 years with mean age of 31.6 ± 9.7 years old. Exact of 615 71.9% females were married and 205 24% were single. As for educational level, 610 71.3% were university graduated, 135 15.8% had high school level of education and 95 11.1% had postgraduate degree. Exact of 725 84.8% females 'residents at city. Also, 115 13.5% were health care workers and 740 86.5% were non-health care workers. Considering monthly income, 260 30.4% had monthly income less than 5000 SR while 155 18.1% had income exceeding 15000 SR (Table 1).

Table 1: Socio-demographic data of study females, Aseer region, Saudi Arabia

Socio-demographic data	No	%
Age in years		
18-30	285	33.3%
31-40	195	22.8%
> 40	375	43.9%
Marital status		
Single	205	24.0%
Married	615	71.9%
Divorced	15	1.8%
Widow	20	2.3%
Educational level		
Primary school	10	1.2%
Intermediate school	5	.6%
High school	135	15.8%
College	610	71.3%
Post graduate	95	11.1%
Residence		
City	725	84.8%
Village	130	15.2%
Career		
Health care worker	115	13.5%
Non-health care worker	740	86.5%
Monthly income		
< 5000 SR	260	30.4%
5000-15000 SR	440	51.5%
>15000 SR	155	18.1%

(Table 2) Study women knowledge regarding urinary tract infection, Aseer region, Saudi Arabia. Exact of 80.5% of the study participants know what is UTI. A total of 14.6% defined UTI as inflammation of the bladder, 9.9% defined it as inflammation of the urethra, and 74.3% defined as inflammation of bladder, kidney and urethra. As for causes of UTI, only 108 12.6% correctly reported for personal hygiene while 73.3% told about bacteria. As for associated symptoms of UTI, 84.6% know about pain in urination, 45.8% know about fever, and 36.8% reported for frequent urination. Considering factor that increase chances to have urinary tract infection, 92.3% know about Drink little amount of water, 86.4% correctly reported for delay to urinate, and 27% know for not carrying to clean the perineum from front and back.

Table 2: Study women knowledge regarding urinary tract infection, Aseer region, Saudi Arabia

Knowledge items	No	%
Do you know what urinary tract infection UTI is?		
Yes	688	80.5%
No	167	19.5%
The urinary tract infection UTI is		
Inflammation of urethra	85	9.9%
Inflammation of bladder	125	14.6%
Can be in all of the above	635	74.3%
Not from the above	10	1.2%
What is the most common cause of urinary tract infection UTI?		
Bacteria	627	73.3%
Protozoa	15	1.8%
Fungi	105	12.3%

Hygiene	108	12.6%
Which symptom occurs with urinary tract infection UTI?		
Pain in urination	723	84.6%
Red urine	663	77.5%
Abdominal pain	430	50.3%
Fever	392	45.8%
Back pain	345	40.4%
Frequent urination	315	36.8%
Urgence	409	47.8%
Constipation	65	7.6%
Which factor that increase chances to have urinary tract infection UTI?		
Don't care to clean the perineum from front and back	231	27.0%
Urination after eating	20	2.3%
Drink large amount of water	40	4.7%
Drink little amount of water	789	92.3%
Delay to urinate	739	86.4%

(Table 3) Study women perception and attitude regarding urinary tract infection, Aseer region, Saudi Arabia. Exact of 89.9% of the study participants reported that they will go to hospital for UTI, while only 4.7% reported that they will Drink more water. Exact of 79.8% of the study females think that urinary tract infection UTI is common. Also, 61.8% think that UTI is more common among females. Additionally, 74.5% feel that urinary tract infection UTI is serious. As for complications expected with UTI, 75.9% know about recurrent UTI infections, and 40.5% know it would affect concurrent pregnancy.

Table 3: Study women perception and attitude regarding urinary tract infection, Aseer region, Saudi Arabia

Perception & attitude	No	%
What do you think about how to deal with urinary tract infection UTI?		
Go to the hospital	769	89.9%
Take rest at home	86	10.1%
Take antibiotics directly	267	31.2%
Take analgesic	100	11.7%
Drink more water	40	4.7%
Take more shower	25	2.9%
Dont know	105	12.3%
Do you feel urinary tract infection UTI is common		
Yes	682	79.8%
No	45	5.3%
I don't know	128	15.0%
Do you feel the urinary tract infection UTI		
Affect female more than male	528	61.8%
Affect male more than female	50	5.8%
Affect them both equally	125	14.6%
I don't know	152	17.8%
Do you feel urinary tract infection UTI is serious?		
Yes	637	74.5%
No	95	11.1%
I don't know	123	14.4%
What are the complications you expected from urinary tract infection UTI?		
Recurrent urinary tract infection UTI	649	75.9%

Affects concurrent pregnancy	346	40.5%
Affect the quality of life	443	51.8%
Death	65	7.6%
Decrease the weight	55	6.4%
Generalized oedema	437	51.1%

(Table 4) Study women practice and behaviour for urinary tract infection, Aseer region, Saudi Arabia. A total of 569 66.5% participants reported experiencing UTI which was for only once per year among 58.3% of them, and for 2 times per year among 18.6%. Ad for symptoms experienced, 76.1% had pain in urination, 71.2% complained of abdominal pain, 56.6% had urge, 50.4% experienced frequent urination, while 41.5% had fever. As for daily amount of water intake 330 ml, 38.9% received 3-4 bottles per day, 32.9% received 1-2 bottles daily, and 14.6% had more than 6 bottles daily. Exact of 709 82.9%0 participants reported drinking of fluids that irritate the bladder. As for action taken with UTI, 78.8% reported going to hospital for medical consultation, 33.7% had antibiotics directly, and 19.3% received analgesics.

Table 4: Study women practice and behaviour for urinary tract infection, Aseer region, Saudi Arabia

Practice items	No	%
Have you ever experienced urinary tract infection UTI?		
Yes	569	66.5%
No	286	33.5%
If yes, how many times you have it?		
1 time per year	332	58.3%
2 times per year	106	18.6%
3 times per year	40	7.0%
More than 3 times per year	91	16.0%
What symptoms did you notice?		
Pain in urination	433	76.1%
Abdominal pain	405	71.2%
Fever	236	41.5%
Frequent ruination	287	50.4%
Urge	322	56.6%
How many times you drink a water per day?		
1-2 bottles	281	32.9%
3-4 bottles	333	38.9%
5-6 bottles	116	13.6%
> 6 bottles	125	14.6%
Drink of fluids that irritate the bladder coffee & tea?		
Yes	709	82.9%
No	146	17.1%
If you feel symptoms of urinary tract infection UTI		
Go to the hospital	674	78.8%
Take antibiotics directly	288	33.7%
Take analgesic	165	19.3%
Drink more water	55	6.4%
Take more shower	35	4.1%
Nothing	75	8.8%

(Figure 1) Overall knowledge of urinary tract infection among female in Aseer region. Exact of 560 65.5% women had good knowledge regarding UTI and 295 34.5% had knowledge level. As for women perception and attitude towards UTI (Figure 2), 427 49.9% women had

good perception and attitude while 428 50.1% showed poor perception and attitude.

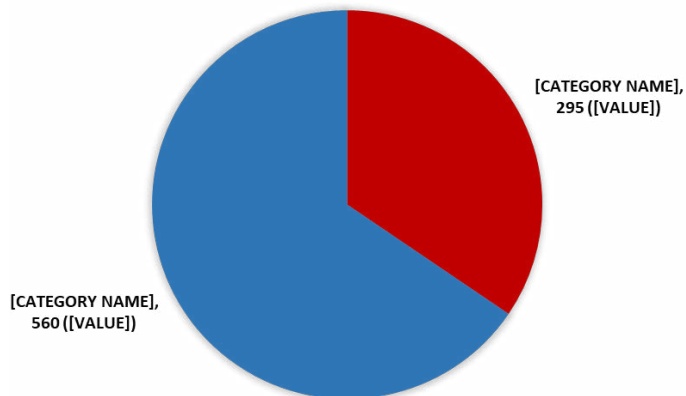


Figure 1: Overall knowledge of urinary tract infection among female in Aseer region

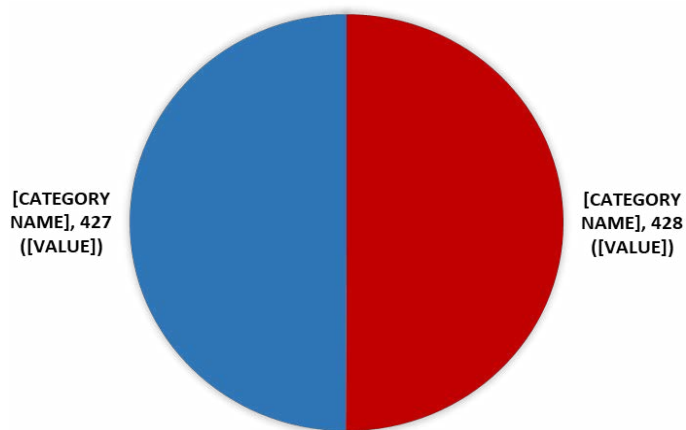


Figure 2: Overall Perception and attitude towards urinary tract infection among female in Aseer region

(Table 5) Distribution of women knowledge regarding UTI by their personal data, Aseer region, Saudi Arabia. A total of 78% of single women had good knowledge regarding UTI compared to 57.1% of divorced/widow women with recorded statistical significance P=.001. Also, 78.9% of women with post graduate education level had good knowledge versus 33.3% of others with low level of education P=.002. Good knowledge regarding UTI was detected among 87% of women at health care field in comparison to 62.2% of others P=.001. Additionally, 70.5% of women with monthly income 5000-15000 SR had good knowledge compared to 59.6% of others with income less than 5000 SR.

Table 5: Distribution of women knowledge regarding UTI by their personal data, Aseer region, Saudi Arabia

Personal data	Overall knowledge level				p-value
	Poor		Good		
	No	%	No	%	
Age in years					
18-30	85	29.8%	200	70.2%	.119
31-40	70	35.9%	125	64.1%	
> 40	140	37.3%	235	62.7%	

Marital status					.001*
Single	45	22.0%	160	78.0%	
Married	235	38.2%	380	61.8%	
Divorced / widow	15	42.9%	20	57.1%	
Educational level					.002*
Below high school	10	66.7%	5	33.3%	
High school	45	33.3%	90	66.7%	
College	220	36.1%	390	63.9%	
Post graduate	20	21.1%	75	78.9%	
Residence					.303
City	245	33.8%	480	66.2%	
Village	50	38.5%	80	61.5%	
Career					.001*
Health care worker	15	13.0%	100	87.0%	
Non-health care worker	280	37.8%	460	62.2%	
Monthly income					.007*
< 5000 SR	105	40.4%	155	59.6%	
5000-15000 SR	130	29.5%	310	70.5%	
>15000 SR	60	38.7%	95	61.3%	
Have you ever experienced urinary tract infection UTI?					.264
Yes	189	33.2%	380	66.8%	
No	106	37.1%	180	62.9%	

P: Pearson X² test
* P < 0.05 significant

(Table 6) Distribution of women perception and attitude towards UTI by their personal data, Aseer region, Saudi Arabia. Good perception was detected among 62.1% of women aged 18-30 years compared to 41.3% of others aged above 40 years P=.001. Also, 57.1% of single women had good perception level compared to 14.3% of divorced/widow women P=.001. Exact of 73.7% of women with postgraduate level of education had good perception and attitude towards UTI versus 27.4% of others with high school level of education P=.001. Women resident at city showed significantly better perception and attitude towards UTI than others at village 51.7% vs. 40%, respectively; P=.014. Also, good perception and attitude was detected among 73.9% of women at health care field in comparison to 46.2% of others P=.001.

Table 6: Distribution of women perception and attitude towards UTI by their personal data, Aseer region, Saudi Arabia

Personal data	Overall perception level				p-value
	Poor		Good		
	No	%	No	%	
Age in years					
18-30	108	37.9%	177	62.1%	.001*
31-40	100	51.3%	95	48.7%	
> 40	220	58.7%	155	41.3%	
Marital status					
Single	88	42.9%	117	57.1%	.001*
Married	310	50.4%	305	49.6%	
Divorced / widow	30	85.7%	5	14.3%	
Educational level					
Below high school	5	33.3%	10	66.7%	.001*
High school	98	72.6%	37	27.4%	
College	300	49.2%	310	50.8%	
Post graduate	25	26.3%	70	73.7%	

Residence					
City	350	48.3%	375	51.7%	.014*
Village	78	60.0%	52	40.0%	
Career					
Health care worker	30	26.1%	85	73.9%	.001*
Non-health care worker	398	53.8%	342	46.2%	
Monthly income					
< 5000 SR	143	55.0%	117	45.0%	.056
5000-15000 SR	220	50.0%	220	50.0%	
>15000 SR	65	41.9%	90	58.1%	
Have you ever experienced urinary tract infection UTI?					
Yes	278	48.9%	291	51.1%	.322
No	150	52.4%	136	47.6%	

P: Pearson X² test

* P < 0.05 significant

DISCUSSION

Routinely, it is recommended to be consulted for symptoms indicative of urinary tract infection during gynaecological assessment¹⁴. The incidence of UTI is higher in women than in men where nearly 81% of UTI diagnosed in women, with a highest rate between 16 and 35 years. About 27% of women with a first experience of UTI had recurrence within 6 months, and 48% within the first year¹⁵. The current study aimed to assess knowledge, attitude and practice of urinary tract infection among female in Aseer region.

The study results showed that more than two thirds of the participating women had good knowledge level about UTI. In more details, vast majority of the study women correctly know UTI is inflammation of bladder, kidney and urethra. As for causes of UTI, few percent correctly reported for personal hygiene but about three quarters know about bacteria. Regarding symptoms of UTI, more than three quarters 84.6% reported for about pain in urination, while less than half 45.8% know about fever, and one third of them 36.8% reported for frequent urination. Considering factor that increase chances to have urinary tract infection, most of the respondents 92.3% told for drinking little amount of water, and delay to urinate was also known for more than 80% of the study participants. Only one quarter 27% know for lack of carrying to clean the perineum from front and back. Unmarried, high level of education, working at health care field, and high monthly income were the significant factors associated with high knowledge level. A lower level of knowledge regarding UTI was assessed by Bokolia R et al¹⁶. Among adolescent school age girls who reported that 34.2% were knowledgeable regarding UTI. Also, Sequera SK et al¹⁷. found that 40.2% of college females had average knowledge and 28% had good knowledge on UTI and its prevention. Ekta M et al¹⁸. found that 71.5% of adolescent girls were having poor knowledge regarding UTI and 87% has poor practice standard. In Bangladesh, a study showed that about 77% of respondents correctly recognised 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 UTIs¹⁹. On the other hand, Mafuyai MJ et al²⁰. reported that 82.2% of the female students have knowledge about urinary tract infection which is higher than the estimated prevalence among the current study participants.

As for women perception and attitude towards UTI, the study results showed that about half of the women had good perception and attitude

towards UTIs. Most of women 89.9% reported that they will go to hospital for UTI, but very few percent know about the importance of drinking more water. Also, more than three quarters 79.8% of the study women know that urinary tract infection UTI is common and two thirds of them 61.8% think that UTI is more common among females; while 74.5% feel that urinary tract infection UTI is serious. As for complications expected with UTI, 75.9% know about recurrent UTI infections, and 40.5% know it would affect concurrent pregnancy. Fatemeh R et al²¹. Conducted a study among pregnant women regarding their attitude and practice towards UTI and found that women perceived susceptibility of 40.4%, perceived severity of 49.7%, perceived barriers of 56.1%, perceived benefits of 61%, and safe behaviour of 38%. Another study estimated that 69.7% of pregnant women showed Positive Attitude and 30.3% had Neutral Attitude towards Urinary tract infection during pregnancy²².

Considering practice, the current study revealed that more than two thirds 66.5% reported experiencing UTI which was for only once per year among nearly 58% of them. Pain in urination and abdominal pain were experienced by about three quarters of the study women. More than half 56.6% had urge and experienced frequent urination, while 41.5% had fever. More than one third of the women 38.9% received 3-4 bottles of water 330 ml per day, 32.9% received 1-2 bottles daily, and 14.6% had more than 6 bottles daily. More than three quarters of the study women reported that they go to hospital for medical consultation, while one third 33.7% had antibiotics directly.

CONCLUSION AND RECOMMENDATIONS

In conclusion, the study revealed that nearly two out of each three women were knowledgeable regarding UTIs and about one out of each two showed good perception and attitude. Higher level of knowledge and better perception were among young aged females, highly educated, and those who worked at medical care field. Women practice regarding UTIs was also satisfactory especially for seeking for medical consultation and fluid intake. Continuous medical education through online, health education sessions and health care staff in health care centres may play a crucial role in improving women awareness and attitude for UTIs to avoid preventable consequences.

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Competing Interest: None

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