

# Self-efficacy and practices of pregnant women with Symptomatic Urinary Tract Infection

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**Abstract:** The risks of urinary tract infection (UTI) are higher among pregnant women which foster the need for approaches to assist with and maintain behavioral change. Hence this study aimed to assess Self-efficacy and practices of pregnant women with Symptomatic Urinary Tract Infection. Design: descriptive cross sectional design was adopted. Sample: purposive sampling was used to recruit 100 pregnant women attending at primary health care (PHC) centers in Ismailia city. Tools: a structured interviewing questionnaire, UTI Symptoms Assessment questionnaire (UTISA) Results: Frequency of urination has the highest mean of symptoms severity ( $1.68\pm 1.08$ ), followed by burning urination ( $1.48\pm 1.16$ ) then lower abdomen pressure ( $1.45\pm 1.04$ ). Similarly, the most bothersome symptoms were frequency urination followed by burning urination then lower abdomen pressure ( $1.62\pm 1.13$ ,  $1.37\pm 1.18$ , and  $1.35\pm 1.18$  respectively). (70%) had unsatisfactory practices pertaining UTI. Areas of unsatisfactory practices included dietary habits and urinary habits (81% and 70%, respectively) in addition to personal hygiene, clothing, sexual hygiene and habits with regard to urinary tract infection. (56%) of the studied pregnant women had low self-efficacy related to performing practices to combat UTI. Conclusion, voiding pattern abnormality followed by irritative symptoms were the most severe and bothersome UTI symptoms reported. Pregnant women with symptomatic UTI had unsatisfactory practices especially regarding dietary habits and urinary habits. And they had low self-efficacy regarding performing practices to prevent and manage urinary tract infection. Recommendations provide health education programs about UTIs focusing on self-care practices and employing self-efficacy. Periodic bacteriuria investigation in pregnant women is critical for treatment and prevention of urinary tract infections.

**Keywords:** practices, pregnancy, prevention, Self-efficacy, Urinary tract infections.

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## I. INTRODUCTION

Urinary tract infection (UTI) is the existence and multiplication of microorganisms in one or more parts of the urinary tract with organisms invading the adjacent tissues. It is extremely prevalent in pregnancy and considered the most common medical complication of pregnancy that ranges from asymptomatic bacteruria to pyelonephritis. (Creasy et al., 2014; Peate et al., 2014; Baker et al., 2015) .

Pregnant women are at greater risk for UTIs development, mainly due to the physiologic and alterations anatomic that take place in normal pregnancy. These physiological alterations of pregnancy predispose to the development of asymptomatic bacteruria to pyelonephritis with subsequent maternal morbidity and suboptimal fetal outcomes (Taylor et al., 2003; Deshpande, 2011; Rowińska et al., 2015).

Urinary tract infection (UTI) arises in three forms during pregnancy: asymptomatic bacteruria, cystitis, and pyelonephritis. Asymptomatic bacteriuria is identified as the existence of  $10^5$  colony forming units (CFU) of a single pathogen per milliliter of urine in a correctly collected specimen without any associated symptoms (Creasy et al., 2014).

The most common type of UTI is acute cystitis often defined as a bladder infection. Its signs and symptoms comprise hematuria, dysuria, suprapubic discomfort, frequency, urgency, and nocturia. These symptoms are often challenging to differentiate from those resulting from pregnancy itself. Whereas, the most critical type of UTI is pyelonephritis that refers to the infection of renal papillae which can spread to the renal cortex if uncured. Symptoms comprise those of acute cystitis with systemic disorders as pyrexia, tachycardia, rigors, nausea, vomiting and severe renal angle tenderness, and fetal tachycardia (Johnson, 2019).

The prevalence of urinary tract infection among pregnant women was 29% in Ismailia city and 30.29% in Suez governorate, Egypt. Also the incidence of UTIs during pregnancy was 31.3% in Zagazig, Egypt. In Libya the prevalence of bacteruria among the pregnant women was 30%. Whereas in Sudan the prevalence of UTIs among pregnant women was found to be 14%. As well as the prevalence of UTIs among pregnant women in Nairobi, Kenya which was (14.2%) regardless of the women's age, parity and gestational age. While 12.7% were affected with UTI in Abha, Saudi Arabia (Almushait et.al, 2013; Mohammad, 2013; Tamalli et.al, 2013; Wamalwa et al., 2013; Mohamed, 2017).

Urinary tract infection can result in adverse pregnancy consequences, both maternal and perinatal. It complicates up to 20% of pregnancies and are a common cause of admissions in antepartum period. During pregnancy, lower urinary tract infections have a chance of 25-40% to develop into pyelonephritis. Nearly 1 in 5 women with pyelonephritis will experience multiple system derangement resulting from endotoxemia and sepsis syndrome comprising acute respiratory insufficiency. UTIs in pregnancy also cause pregnancy definite complications as premature contractions and labor as well as pre-eclampsia. While fetal and neonatal complications comprise, low birth weight, chorioamnionitis, increased perinatal mortality and developmental problems (Mishra and Sinha, 2014).

Self-efficacy is identified as beliefs or judgments of an individual about his/her abilities. The more are the beliefs and judgments, the more capable is the person in carrying out tasks and activities. Beliefs and judgments can stimulate person's cognitive and social skills, activate the emotional skills, and drive the human behavior to the achievement of the desired objectives. It is believed that there are four techniques to rise self-efficacy: practical skill, indirect modeling, verbal persuasion, and arousal (Wild and McGrath, 2019).

## SIGNIFICANCE OF THE STUDY

Urinary tract infection during pregnancy is complicated owing to the probable risks to the infant and of severe diseases in the mother even if infection was asymptomatic. As refining quality of life and functional capacity through enhanced disease self-management become critical and are key objectives. Health education specialists continue to face increasing pressure to demonstrate the effectiveness of intervention programs (Marks and Allegrante, 2005)

Teaching self-care measures and prevention strategies are essential nursing activities of UTI prevention and management during pregnancy. Assisting people to be as independent as possible in managing their health is an important role of nurses. Achieving such independence requires behavioral remodeling that is affected by many factors one of the most important of them is self-efficacy (Al-Ateeq and Al-Rusaies, 2015; Green, 2016). Thus this study aims to assess Self-efficacy and practices of pregnant women with Symptomatic Urinary Tract Infection.

## II. MATERIAL AND METHODS

### Research design:

Descriptive cross-sectional design was applied to achieve the stated objectives.

### Study Settings:

The study was carried out at antenatal clinics of governmental primary health care centers in Ismailia city that cover urban districts. Health centers include Hay Elsalam, Elshik zaid, Elsabaa Banat and Elshohada health centers. The chosen health care centers are distributed all over Ismailia city that represents the high flow rate centers.

**Target population:**

The target population of this study was pregnant women that have symptomatic urinary tract infection.

**Sampling**

- **Sample size:**

The sample size was calculated using the following formula:

$$n = 2 \left[ \frac{(Z_{\alpha/2} + Z_{\beta}) * \sigma}{\mu_1 - \mu_2} \right]^2$$

(Dawson and Trapp, 2004)

Where:

n = sample size

$Z_{\alpha/2} = 1.96$  (The critical value that divides the central 95% of the Z distribution from the 5% in the tail)

$Z_{\beta} = 0.84$  (The critical value that separates the lower 20% of the Z distribution from the upper 80%)

$\sigma$  = the estimate of the standard deviation = 2.41 ( NejadSadeghi and Taghdisi, 2014)

$\mu_1$  = mean in the study group = 8.63 ( NejadSadeghi and Taghdisi, 2014)

$\mu_2$  = mean in the control group = 10.85 ( NejadSadeghi and Taghdisi, 2014)

So, by calculation, the sample size will be equal to 45 cases per group, giving a total of 90 cases. Adding a drop-out rate of 10% of cases raises the sample size to a total of 100 cases.

- **Sampling technique:**

Purposive sampling was used to collect the study subjects according to the inclusion and exclusion criteria till reach the determined sample size.

**Inclusion criteria:**

- 1- Pregnant women.
- 2- Pregnant women diagnosed with urinary tract infection by physician based on urine culture of (at least  $10^5$  CFU/mL).
- 3- Pregnant women with symptomatic bacteriuria.

**Exclusion criteria:**

- 1- Patient need to be hospitalized.
- 2- Women have known underlying renal pathology.
- 3- Women diagnosed with diabetes mellitus.
- 4- Women under immunosuppressant therapy

**Data collection tools**

Two main tools were employed to collect data:

**Tool (1): structured interviewing questionnaire:** this tool was developed by the investigator based on the review of related literatures to assess self-efficacy and practices of pregnant women with Symptomatic Urinary Tract Infection. It consisted of four parts:-

**Part 1:** socio- demographic data, it consisted of 7 items as (patient's age, education level, residence, occupation, and economic status, etc.).

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**Part 2:** obstetrical and gynecologic history, it consisted of 9 items as parity, gravidity, abortion, living children number, and child spacing.

**Part 3:** included questions about health practices regarding UTI it consisted of 5 main items as (clothing, nutritional habits, urinary habits, hygiene habits, and habits related to sexual behavior) covered by 30 questions.

**Scoring system:**

**For the practices items,** a correct response was scored 2 and the incorrect 1. The scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score, and means and standard deviations were computed. Behavior was considered satisfactory if the percent score was 60% or more and unsatisfactory if less than 60%.

**Part 4:** includes questions related to perceived self-efficacy. It included 7 items with a 3point Likert scale anchored at 1= disagree, 2= not sure and 3=agree.

**Scoring system:**

For self-efficacy items: the total score ranged : <50% suggest low self – efficacy, 50%-75% suggests moderate self – efficacy, and >75% suggests high self-efficacy

**Tool (2): The UTI Symptoms Assessment questionnaire UTISA**

The UTISA is a self-administered tool constructed by **Clayson et al., 2005**. It encompasses 14-items inquiring about the severity and bothersomeness of seven basic UTI symptoms. The Likert scales relating to each item were 4-point scales. The clinical assessments occur at the first visit ,at any early stage (day 1–3) ,and at the visit of cure test.

For all of the seven most extensively reported symptoms and signs of UTI (frequency, urgency ,pain/burning on urination, incomplete voiding, pain in pelvic area, low back pain ,blood in urine), degrees of ‘severity’ and bothersomeness’. every item has a Likert scale of responses, the ‘severity’ item responses options include ‘did not have’, ‘mild’, ‘moderate,’severe’, scored 0–3; also the bothersomeness item responses options include ‘not at all’, ‘a little’, ‘moderately’, ‘a lot’, scored 0–3 (**Clayson et al., 2005**).

**Content validity:**

Data collection tools were reviewed by five expertise in the maternity, obstetric, gynecologic nursing, and urology specialists to ensure applicability, comprehensiveness, understanding, and ease of implementation of the tools.

**2-Operational Design:**

This design includes the preparatory phase, content validity, pilot study, and field work.

**Preparatory phase:**

Reviewing of all available local and international related literatures about the various aspects of the research problem was done by the investigator. Tools of data collection were prepared based on related literatures and tested for content validity.

**Pilot study:**

A pilot study was carried out on 10% of sample. It was conducted to test the applicability of the tools and feasibility of the study. According to the results of the pilot study, items were corrected, modified, omitted or added. It also helped in determining the time needed for interviewing and evaluating the suitability of settings to perform the interview pregnant women recruited in the pilot study were not enrolled in the study.

**Field work:**

After assessing and analyzing the collected pilot data, health education program based on health belief model was designed. A total of 100 pregnant women were recruited from the study settings. Data were collected using the pre constructed tools through face to face interview from the enrolled pregnant women. Data were collected from the selected governmental centers on along the days of the week especially on Saturdays, Sundays, Mondays, and Wednesdays from November 2018 to June 2018.

**Interviewing phase:**

In the selected study settings the investigator introduced herself to pregnant women, and based on pre-mentioned inclusion and exclusion criteria suitable subjects were excused to participate in the study. Oral consent was taken after explaining the purpose and procedures of the study. The investigator interviewed each woman individually on-site in a private room. The approximate time spent with each woman during the interview was 15-20 minutes.

**3- Administrative Design:**

An official approval letters directed from the dean of the faculty of nursing at to the medical and nursing directors of health centers to obtain their permission and cooperation.

**Ethical consideration**

Oral consents were obtained from the women after a brief explanation of the study with her right to withdraw at any time. Confidentiality of the subjects was maintained. The group was not exposed to any increased risk as a result of the study.

**4- Statistical design:**

Collected data were arranged, and analyzed by using Statistical Package for the Social Sciences (SPSS) program. Descriptive statistics was expressed using frequency, mean, and standard deviation.

**III. RESULTS**

**Table (1): Socio-demographic data comparison between control group and study group pregnant women diagnosed with UTI (n = 100).**

Variables		No.	%
Age	15 – 25 years	50	50.0
	> 25 – 35 years	44	44.0
	> 35 years	6	6.0
	Mean ± SD	26.1 ± 4.9	
Education	Read and write	5	5.0
	Primary education	5	5.0
	Preparatory education	8	8.0
	Secondary education	57	57.0
	High education	25	25.0
Occupation	Housewife	79	79.0
	Worker	21	21.0
Monthly income	Not sufficient	39	39.0
	Sufficient	52	52.0
	Sufficient and saved	9	9.0

Table (1) shows that half of the studied pregnant women were between 15-25 years old with a mean age of 26.1 ± 4.9. Regarding education, more than half (57%) of the study pregnant women had secondary education. Majority (79%) of the pregnant women were housewives. Furthermore, nearly half of the studied pregnant women had sufficient monthly income.

**Table (2): Distribution of pregnant women according to their obstetrical history (n = 100).**

Obstetric history		No.	%
Gravidity	Primigravida	35	35.0
	Multigravida	65	65.0
	Mean ±SD	2.1±1.06	
parity	primipara	36	36.0
	Multipara	29	29.0
	Mean ±SD	0.99±0.89	

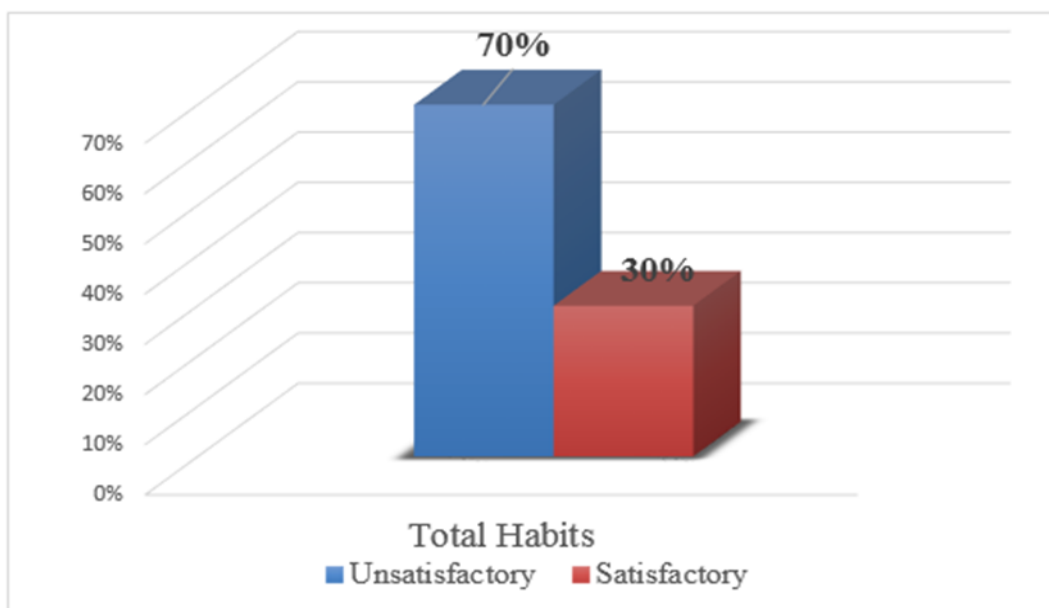
<b>Abortions</b>	<b>No</b>	86	86.0
	<b>Once</b>	11	11.0
	<b>&gt; 1</b>	3	3.0
	<b>Mean ±SD</b>	0.17±0.45	
<b>Number of living children</b>	<b>1 – 2 children</b>	58	58.0
	<b>3 children</b>	5	5.0
	<b>Mean ±SD</b>	0.97±0.90	
<b>Child spacing</b>	<b>&lt; 2 years</b>	49	75.4
	<b>2 – 4 years</b>	13	20.0
	<b>&gt; 4 years</b>	3	4.6
	<b>Mean ± SD</b>	1.13 ± 1.40	

With regard to obstetric history (table 2), nearly two thirds of the studied pregnant women were multigravidas and had one to two children. Moreover, Majority (75.4%) of the studied multigravidas had child spacing duration of less than two years between pregnancies.

**Table (3): Severity and bothersomeness of Urinary Tract Infection Symptoms in the studied pregnant women (N=100).**

<b>Symptoms</b>	<i>Range</i>	<i>Severity</i>	<i>Bothersomeness</i>
		Mean ± SD	Mean ± SD
<b>Frequency of Urination</b>	( 0 - 3 )	1.68±1.08	1.62±1.13
<b>Urgency of Urination</b>	( 0 - 3 )	1.29±1.16	1.13±1.13
<b>Pain or Burning When Passing Urine</b>	( 0 - 3 )	1.48±1.16	1.37±1.18
<b>Not Being Able to Empty Your Bladder Completely</b>	( 0 - 3 )	1.15±1.20	1.10±1.16
<b>Uncomfortable Pressure in The Lower Abdomen</b>	( 0 - 3 )	1.45±1.04	1.35±1.18
<b>Low Back Pain</b>	( 0 - 3 )	1.09±1.16	1.07±1.20
<b>Blood in Urine</b>	( 0 - 3 )	0.62±1.07	0.49±0.96

Table (3) shows the mean severity and bothersomeness of UTI symptoms experienced by the studied pregnant women. Frequency of urination has the highest mean of symptoms severity (1.68±1.08), followed by burning urination (1.48±1.16) then lower abdomen pressure (1.45±1.04). Similarly, the most bothersome symptoms were frequency urination followed by burning urination then lower abdomen pressure (1.62±1.13, 1.37±1.18, and 1.35±1.18 respectively).



**Figure (1): Distribution of pregnant women regarding their practices for urinary tract infection (n=100).**

Figure (1) clarifies that more than two thirds of the examined pregnant women (70%) had unsatisfactory practices pertaining UTI compared to only less than one third of the pregnant women (30%) had satisfactory practices.

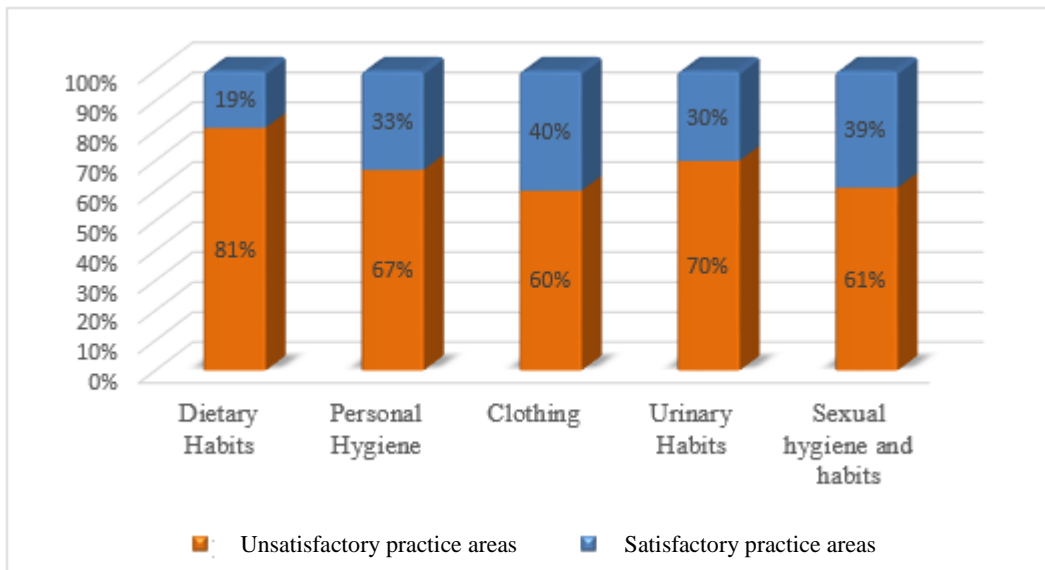


Figure (2): Distribution of pregnant women according to their practices concerning urinary tract infection (n=100).

Figure (2) illustrates that, majority of examined pregnant women had unsatisfactory practices regarding their dietary habits and urinary habits (81% and 70%, respectively). In addition to nearly two thirds of the pregnant women had unsatisfactory practices concerning their personal hygiene, clothing, sexual hygiene and habits with regard to urinary tract infection.

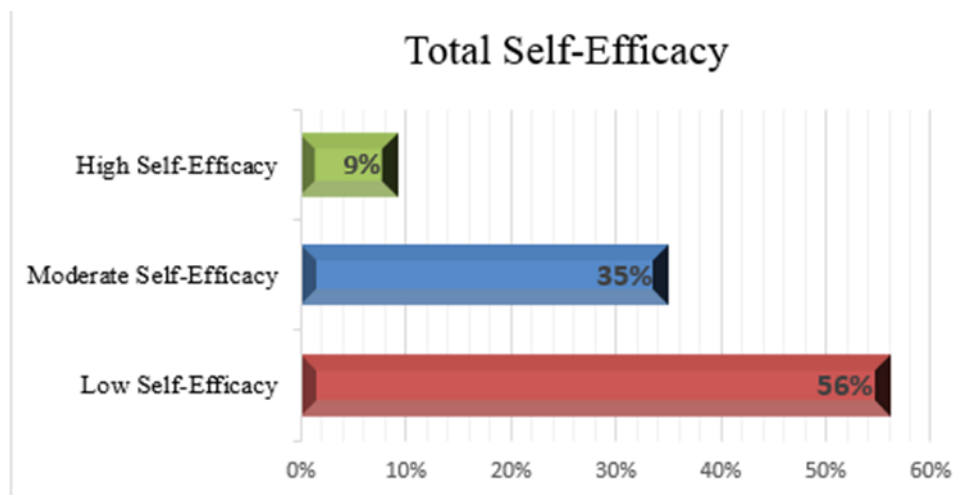


Figure (3): Distribution of pregnant women according to their perceived self-efficacy to combat urinary tract infection (n=100).

Figure (3) reveals that more than half (56%) of the studied pregnant women had low self-efficacy related to performing practices to prevent and manage urinary tract infection compared with only (9%) of them had high self-efficacy.

#### IV. DISCUSSION

UTI is one of the most commonly recorded infection in both the hospital setting and in the social community **Khong & Malcomson, 2015**. It is categorized according to anatomical site into lower and upper urinary tract infection. Lower UTI, a term which encompasses cystitis and urethritis, is a condition that causes the typical symptoms of dysuria, suprapubic



pain, frequency of micturition, urgency, hesitancy, and incomplete voiding. Systemic manifestations are uncommon and long-term sequel are rare. Upper UTI or pyelonephritis is an invasive infection of the renal parenchyma, classically presenting with the triad of fever, renal angle tenderness, and nausea and vomiting. Lower urinary tract symptoms may or may not be present (**Rané and Dasgupta, 2013**).

Because of physiologic changes that ensue in the renal system during pregnancy, urinary tract infections are prevalent. These infections pose risks to the mother and fetus; therefore the prevention or early treatment of these infections is crucial. Persons who display higher self-efficacy scores for controlling disease-associated symptoms such as pain are also anticipated to have significantly higher pain thresholds than lower scoring individuals. They are also anticipated to have fewer severe symptoms and a better quality of life and probably fewer problems with mobility and suffering (**Marks and Allegrante, 2005; Lowdermilk et al., 2020**).

Moreover, because of their amplified personal perceptions regarding the controllability of the illness and their capability to fulfill particular tasks, such individuals are also more likely to adopt and maintain desirable health behaviors. They may also be able to devote more time and energy in making informed decisions if they have improved feelings of control (**Marks and Allegrante, 2005**). Thus the present study aimed to assess Self-efficacy and practices of pregnant women with Symptomatic Urinary Tract Infection.

In the present study, half of the studied pregnant women were between (15-25) years old with a mean age of  $26.1 \pm 4.9$ . Similarly, **Alghalibi et al., 2007** reported a higher prevalence of UTI in pregnant women aged 21 – 25 years in their study of pregnant women in Sana'a City-Yemen. This could be attributed to normality of married and fertile age.

Conversely, **Obiobolu et al., 2009**, study in Nigeria, found that the less than two thirds of UTI cases were among pregnant women aged 26-30 years old. In addition, **Boye et al., 2012** study in Ghana, reported that the highest percentage of UTI was present among pregnant women aged 27-32 years old. This was explained by the fact that women in this aged group are more sexually active and anatomical relationship of female urethra to the vagina makes it liable to trauma during sexual intercourse which could result in increased tendency of bacteria to ascend up from urethra into the bladder (**Bothamley and Boyle, 2012**).

Regarding the educational level of pregnant women, the highest percentage of pregnant women with UTI was present among those who had primary, preparatory, and secondary level of education. The same result was reported by **Gune et al., 2005**, study in turkey, who found that UTI was significantly high among women who had less than secondary level education ( $p < 0.05$ ) and, **Diemetry et al, 2007**, study reported that the nearly two thirds of UTI cases among pregnant women were found among those who were illiterate and with low education level. However, this result is contradicted with **Sheikh et al, 2000** study in Pakistan, as they found no significant effect of education on incidence of UTI.

Considering number of gravidity, nearly two third of the studied pregnant women were multigravida This result agreed with **Okonko et al., 2010** study in Nigeria who reported that more than half of the women who had UTI were in their 3<sup>rd</sup> pregnancy and above or had more than 3 children and with **Dimetry et al 2007** study in Zagazig University who found that the highest percentage of UTI in pregnant women was found among multigravidas (4 or more). This showed that parity or gravidity is one of the possible factors affecting the prevalence rate of UTI among pregnant women. These results contradicted **Mohammad et al., 2013** who reported that the majority of pregnant women with UTI were primigravida.

Regarding the symptoms of urinary Tract Infection UTI as reported by the pregnant women, Frequency urination has the highest mean of symptoms severity and bothersomeness, followed by burning urination then lower abdomen pressure. This result is in agreement with (**Kazemier et al. 2012**) reported that the common symptoms of urinary tract infection include burning feeling during urination, frequent or intense urges to urinate, even when one have little urine to pass, pain in the back or lower abdomen, cloudy, dark, bloody, or unusual smelling urine, fever or chills. (**Haider,et al., (2010)** also reported that the common urinary symptoms are abnormal voiding pattern more than one fifth followed by irritative symptoms and voiding difficulties.



In contrary, (Hassan, 2015) most of the study sample reported burning sensation and pain during urination, dysparonia, urgency and pain in lower abdominal (supra pubic area), incontinence, change of color and odor of urine. Those women had these symptoms recurrent or continuous from the beginning of pregnancy. The pregnant women stated that these symptoms bothered them with feeling of burning sensation, disturb their sleep, and affect quality of life.

Health practices and behaviors have a leading role in the urinary infection. Therefore, being aware of the potential factors of urinary infection, and modifying these habits can decrease the urinary infection in pregnant women to a considerable extent (Amiri et al., 2009).

the current study clarifies that more than two thirds of the examined pregnant women had unsatisfactory practices pertaining UTI compared to only less than one third of the pregnant women had satisfactory practices. Moreover, majority of examined pregnant women had unsatisfactory practices regarding their dietary habits and urinary habits.

These results go in line with Jalali, et al, 2014 on his study of factors affecting presence of UTI in pregnant who revealed that, women urinary habits and feeding habits of the people with the highest score to lowest score was for the prevention of urinary tract infection. The increase of knowledge and behavior such as proper health behaviors, sexual habits and prevention of urinary tract infections play very important role in prevention of urinary tract infection. Nutrition Habit was confirmed to have great influence on urinary tract infection.

The current study result revealed that more than half of the studied pregnant women had low self-efficacy related to performing practices to prevent and manage urinary tract infection. This result is in agreement with (Rahimi et al., 2016) Predictors of Preventive Behaviors of Urinary Tract Infections Based on Health Belief Model among Pregnant Women in Zahedan The mean scores of self-efficacy and practice were lower than the average that provides the need for an educational intervention in the target group and there was a meaningful significance in all cases ( $P < 0.0001$ ). Furthermore, reported that the effect of each variable indicates that efficacy had the greatest impact on behavior, so that for everyone unit increase inefficacy variable of 0.547 unit increase in the variable will be created.

On the other hand (Saatloo et al., 2013) who studied The effect of education based on empowerment model on knowledge, self-efficacy and practice of mothers with young girls for preventing of urinary tract infection and reported that more than two thirds of the studied samples had fair self-efficacy. This difference in results may be attributed to difference in study methodology as; samples, setting, demographic characteristics.

In conclusion, symptomatic urinary tract infection affects quality of life of diseased women. Its prevalence is due to lack of knowledge and suboptimal self-care practices regarding urinary tract infection. Appropriate management of lower UTI during pregnancy will prevent most upper UTI and their serious consequences. Self-efficacy expectancies are assumed to have a direct impact upon behaviors. Therefore, health education of UTI prevention and management that focus on self – care practices and that is constructed utilizing self-efficacy approach should be available, especially to pregnant women with UTI .

## V. CONCLUSION

Based on the findings of the study, this study concluded that: Frequency of urination followed by burning urination then lower abdomen pressure were the most severe and bothersome complaints. Symptomatic urinary tract infection pregnant women had unsatisfactory practices pertaining UTI. Areas of unsatisfactory practices included personal hygiene, clothing, sexual hygiene and habits particularly dietary habits and urinary habits with regard to urinary tract infection. The studied pregnant women had low self-efficacy related to performing practices to combat UTI.

## VI. RECOMMENDATIONS

*Based upon these study findings, the following could be recommended:*

1. Frequent organized education activities to be included during antenatal care about UTIs during pregnancy, that focus on proper self-care practices as (personal hygiene, genital hygiene, particularly urination habits, and nutritional habits) that prevent UTI in pregnancy.
2. Periodical screening of pregnant women with urine culture through the three trimesters for early detection and proper treatment.
3. Interventions to promote self-efficacy for disease self-management should be ongoing.

## 4. Further researches conducted:

- Researches to identify specific demographic, medical, and psychosocial factors that may be important for tailoring self-efficacy interventions, and what the most effective self-efficacy enhancing factors are for reaching optimal outcomes.
- Incorporating the enhancement of self-efficacy and self-care practices into health behavior change programs.
- Large scale studies to assess self-care practices regarding UTI and its recurrence in obstetric population.

**REFERENCES**

- [1] Al-Ateeq, M. A.; and Al-Rusaies A. A. (2015): Health education during antenatal care: the need for more. *International Journal of Women's Health*; 7: 239–242.
- [2] Alghalibi S.M., Al-Jaufy A. and Al-moayad E. (2007): Bacterial urinary tract infection among pregnant women in Sana'a City-Yemen. *Arab gulf journal of scientific research* 25, 23-31
- [3] Almushaita, M. A.; Mohammed, H. A.; Al- Harthy, D. A.; & Abdullaht, A. M. (2013): Prevalence and Predisposing Factors of Urinary Tract Infections among Pregnant Women in Abha General Hospital. *International Journal of Sciences: Basic and Applied Research (IJSBAR)*; 11(1): 18-29.
- [4] Amiri, F. N.; Rooshan, M. H.; Ahmady, M. H. ; & Soliamani, M. J. (2009): Hygiene practices and sexual activity associated with urinary tract infection in pregnant women. *Eastern Mediterranean Health Journal*; 15(1): 104-110.
- [5] Baker, P. N.; McEwan A. S.; Arulkumaran, S.; Data, S. T.; Mahmood, T. A.; Reid, F.; Shafi, M. I.; & Aiken, C. (2015): *Obstetrics: Prepare for the MRCOG: Key Articles from the Obstetrics, Gynecology & Reproductive Medicine Journal. Urogynaecological Complications in Pregnancy: An Overview. Philadelphia: Elsevier Health Sciences*; 123: 125, 321:324.
- [6] Bothamley, J. & Boyle, M. (2012): *The Renal System, Hypertension and Pre-Eclampsia. Medical Conditions Affecting Pregnancy and Childbirth. Oxford: Radcliffe publishing*; 118: 119.
- [7] Boye, A.; Siakwa, P. M.; Boampong, J. N.; Koffuor, G. A.; Ephraim, R. K. D; Amoateng, P.; Obodai, G.; Penu, D.(2012): Asymptomatic urinary tract infections in pregnant women attending antenatal clinic in Cape Coast, Ghana. *Journal of Medical Research*; 1(6): 074-083.
- [8] Clayson, D., Wild, D., Doll, H., Keating, K., & Gondek, K. (2005). Validation of a patient-administered questionnaire to measure the severity and bothersomeness of lower urinary tract symptoms in uncomplicated urinary tract infection (UTI): the UTI Symptom Assessment questionnaire. *BJU international*, 96(3), 350-359.
- [9] Creasy, R. K.; Resnik, R.; Iams, J. D.; Lockwood, C. J.; Moore, T. R.; & Greene, M. F. (2014): *Creasy & Resnik's Maternal- Fetal Medicine Principles and Practice. Renal Disorders. 7<sup>th</sup> ed., Philadelphia: Saunders*; 816:820, 949: 951.
- [10] Dawson, B. & Trapp, R. G. (2004): *Basic & Clinical Biostatistics. 4th ed., USA: Mc Graw-Hill.*
- [11] Dimetry, S. R.; El-Tokhy, H. M.; Abdo, N. M.; Ebrahim, M. A. & Eissa, M. (2007): Urinary Tract Infection and Adverse Outcome of Pregnancy. *J Egypt Public Health Assoc*; 82 (3): 203-218.
- [12] Deshpande, H. (2011): *Textbook of High Risk Pregnancy. Renal Disease in Pregnancy. New Delhi: Jaypee Brothers Publishers*; 97:99.
- [13] Green, c. j. (2016): *Maternal newborn nursing care plans. 3<sup>rd</sup> ed., Massachusetts: Jones & Bartlett Learning*; 34:36.
- [14] Gunes G, Gunes A, Tekiner S, Karaoglu L, Kaya M and Pehlivan E. (2005): Bacteriuria and socioeconomic associations among pregnant women in Malatya, Turkey. *Public Health*.119: 1039-1041.
- [15] Haider, G.; Zehra, N.; Munir, A. A.; & Haider, A. (2010): Risk factors of urinary tract infection in pregnancy. *J Pak Med Assoc*; 60 (3): 213-216.

- [16] Hassan, M. H. (2015): Effect of intervention guidelines on self-care practices of pregnant women with urinary tract infection. *Life Science Journal*, 12(1), 113-24.
- [17] Jalali, M., Shamsi, M., Roozbahani, N., & Kabir, K. (2014). The effect of education based on the theory of planned behavior in promoting preventive behaviors of urinary tract infections in pregnant women. *Journal of Jahrom University of Medical Sciences*, 12(3).
- [18] Johnson E. K. & Kim, E. D. (2019): Urinary tract infections in pregnancy. Available at <http://emedicine.medscape.com>. Accessed 30-6-2019 at 5.00 pm.
- [19] Kazemier, B. M., Schneeberger, C., De Miranda, E., Van Wassenae, A., Bossuyt, P. M., Vogelvang, T. E., & Van Der Ven, J. A. (2012): Costs and effects of screening and treating low risk women with a singleton pregnancy for asymptomatic bacteriuria, the ASB study. *BMC pregnancy and childbirth*, 12(1), 52.
- [20] Lowdermilk, D. L.; Perry, S. E.; Cashion, M. C.; Alden, K. R.; & Olshansky, E. (2020): *Maternity and women's health care*. Pregnancy. 12<sup>th</sup> ed., St. Lois: Elsevier; 257-258.
- [21] Marks, R., & Allegrante, J. P. (2005). A review and synthesis of research evidence for self-efficacy-enhancing interventions for reducing chronic disability: implications for health education practice (part II). *Health promotion practice*, 6(2), 148-156.
- [22] Mishra, M. G. & Sinha, H. H. (2014): *Recurrent Urinary Tract Infections in Pregnancy. Treatment and Prognosis in Obstetrics & Gynecology*. New Delhi: Jaypee Brothers Medical Ltd; 137: 142.
- [23] Mohammad, N. A. (2013): A study of frequency and some risk Factors of Urinary Tract Infection among Pregnant Women Attending El Sadat Family Health Unit in Suez Governorate. Unpublished thesis, zagazig Un. Fac. Medicine, M.Sc., 74, 80, 82, 93-94, 96.
- [24] Mohamed, N. R., Omar, H. H. H., & Abd-Allah, I. M. (2017). Prevalence and risk factors of urinary tract infection among pregnant women in Ismailia City, Egypt. *IOSR Journal of Nursing and Health Science*, 6(03), 62-72.
- [25] NejadSadeghi, E.; and Taghdisi, M. h. (2014): evaluation of modification of behavior of the pregnant women in the field of urinary infections based on the health belief mode. *Hormozgan Medical Journal*; 18(3):317-327.
- [26] Obiogbolu, C. H.; Okonko, I.O.; Anyamere, C.O.; Adedeji, A. O.; Akanbi, A. A.; Ogun, J. E.; & Faleye, T. O. (2009): Incidence of urinary tract infections (UTIs) among pregnant women in Akwametroplis, Southeastern Nigeria. *Scientific Research and Essay*, 4 (8): 820- 824.
- [27] Okonko, I. O.; Ijandipe, L.; & Ilusanya, O. (2010): Incidence of urinary tract infection (UTI) among pregnant women in Ibadan, South-Western Nigeria. *Afr J Biotechnol*; 8: 6649-6657.
- [28] Peate, I.; Wild, K.; & Nair, M. (2014): *The Person with a Urinary Disorder*. Nursing practice knowledge and care. Oxford: John Wiley & Sons; 656: 661.
- [29] Rané, A. & Dasgupta, R. (2013): *urinary tract infection: clinical perspectives on urinary tract infection*. London: springer; 1-10.
- [30] Rowińska, J. M.; Malyszko, J.; and Wieliczko, M. (2015): Urinary tract infections in pregnancy: old and new unresolved diagnostic and therapeutic problems. *Arch Med Sci.*; 11(1): 67-77.
- [31] Saatloo, B., Taghdisi, M., Shojaizade, D., Baghaei, R., & Hosseini, F. (2014). The effect of education based on empowerment model on knowledge, self-efficacy and practice of mothers with young girls for preventing of urinary tract infection. *Journal of Research and Health*, 4(1), 584-591.
- [32] Sheikh, M. A., Khan, M. S., Khatoon A. , Arain G. M. (2000): Incidence of urinary tract infection during pregnancy. *East Mediterr Health Journal*; 6: 265-71.

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- [33] Tamalli. M.; Sangar, B.; & Alghazal, M. A. (2013): Urinary tract infection during pregnancy at Al-khoms, Libya. *International Journal of Medicine and Medical Sciences* ISSN; 3 (5), 455-459.
- [34] Taylor, R. B.; Daid, A. K.; Fields, S. A.; Philips, D. M.; & Scherger, J. E. (2003): Family medicine: principles and practice, *Medical Problems during Pregnancy*. 6<sup>th</sup> ed., New York: Springer Science & Business Media; 93:94, 104: 105.
- [35] Wamalwa, P.; Omolo, J.; & Makokha, A. (2013): Prevalence and risk factors for urinary tract infections among pregnant women. *Prime Journal of Social Science (PJSS)*; 2(12), 524-531.
- [36] Wild, K.; & McGrath, M. (2019): *Public Health and Health Promotion for Nurses at a Glance*. Oxford: John Wiley & Sons; 73: 76.