

Impact Of Instructional Program About Prevention Of UTI Recurrence On The Level Of Knowledge And Self-Care Behaviors Among Women With UTI In Saudi Arabia.

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Abstract

Background: Urinary Tract Infection is one of the commonest infections, which affect humans. Half of all women have a UTI in their lifetime and one fourth have recurrent infections. Health behaviors can help patients to prevent Urinary Tract Infection recurrence and changing beliefs is necessary for health behavior change. The aim of this study is to investigate the impact of instructional program about prevention of UTI recurrence on the level of knowledge and self-care behaviors among women with UTIs

Methods: This is a quasi-experimental study with pre-test and post-test design, conducted on 42 married women with Urinary Tract Infection, referred to selected Umulj hospital outpatient clinic. The data collection tool was a "face to face" questionnaire, which was answered by samples of group, prior to the intervention and 12 weeks thereafter. The intervention (education based on instructional program) was performed on this group.

Results: Women showed mean scores of pre-intervention deficient, incorrect knowledge, and unsatisfactory self-care practices regarding their urinary tract infection symptoms. Statistically significant improvements in the total scores were found at the post-test and 3 months later compared with pre-intervention scores ($p < 0.001$). Furthermore there were obvious improvement and relieving of UTI symptoms as reported by women after the implementation of instructional program.

Conclusion Recommendations: The findings showed that education based on instructional program was effective in promoting the health knowledge and health behaviors of women with Urinary Tract Infection. Therefore, it can be suggested that the mentioned instructional program can be used as one of the strategies for prevention of Urinary Tract Infection in women.

Keywords: Education, instructional program, Women, Urinary Tract Infection, Self-care behaviors

I. Introduction

Urinary tract infection (UTI) is one of the most important causes of morbidity in the general population and is the second most common cause of hospital visits. (1) Significantly, this health problem is contributing to the overall morbidity of females in all ages of their life.(2) They occur most frequently between the ages of 16 and 35 years, with 10% of women getting an infection yearly and 60% having an infection at some point in their lives. It was found that UTI is a common health problem among women even in younger age group. (3)

The woman usually reports burning and pain on urination. She reports urgency and frequency and voids only small amounts at a time. The woman usually has a low -grade fever and possibly supra-pubic pain. In addition to burning, pain, urgency and frequency, the woman with pyelonephritis presents with a high spiking fever that rises and falls abruptly. Often she has shaking chills and reports nausea and vomiting. Flank pain and tenderness are common. Signs of urinary tract infections also include foul-smelling urine that appears cloudy.(4)

UTI is limited to the lower urinary tract system in most women, which is known as Uncomplicated Urinary Tract Infections that are most common in patients with no structural or functional disorder of the urinary tract and kidneys, and occurs in patients who have a normal, unobstructed genitourinary tract, with no history of recent instrumentation and healthy premenopausal, non-pregnant women. (5)

It is said that Escherichia coli accounted for the great majority of infections.9 UTI is mainly caused by focal bacteria, 85% of which are E. coli. Escherichia coli are the most common cause of uncomplicated UTIs and accounts for approximately 75 to 95 percent of all infections. (6)

On the other hand, Escherichia coli are not only the first cause of UTIs in women, but they also increase the likelihood of recurrent UTI. Even after resolution of a UTI, small numbers of the original strain of uropathogens may persist in the host, allowing re-colonization and re-infection to occur. Therefore early diagnosis and immediate treatment of urinary tract infection is essential to prevent infection recurrence and its

complications, including renal failure, sepsis, adhesions and obstruction and the purpose of the treatment is to prevent progression of infection and permanent damage and kidney failure.(7)

Since, sexual behaviours and health habits play an important role in causing UTI, and predominant risk factors for recurrent UTIs in premenopausal women are behavioural risk factors. We can conclude that by educating UTI risk factors and changing health behaviours, we can take an important step in preventing UTI. (8) On the other hand, people need assistance and training for changing their health behaviours, and the aim of health education according to Simonds (1976) is bringing about changes in behavioural patterns from detrimental to optimal, to behaviours that are conducive to present and future health; for health education to be effective, it should be designed with understanding of the recipient's health and social characteristics, beliefs, attitudes, values, skills, and past behaviours.(9) .

II. Significance Of The Study

Self-care is the practice of activities that individuals personally initiate and perform on their own behalf in maintaining life health and well-being. Alternatively, self-care has referred to an adult's personal contribution to own health and well-being. Women should learn how to manage this problem and cope with its changes. Studies report that 80 to 95 percent of all health problems are managed at home through self-care and that most people who consult a physician have tried treating themselves before seeking medical advice. The seriousness of the health problem and the extent and type of disability, including its effect on daily activities, are the best determinants of whether an individual uses self-care practices or seeks help from a professional. If the woman does not apply self-care measures correctly, it may lead to negative effects on urinary tract infection, such as ascending infection and inflammation.(10)

The nurse is to meet the self-care needs, requests, facilitate, and increase the self-care abilities of the patient to perform self-care activities. A new approach to women's health includes health promotion and health protection throughout life span. Women's care now receives total assessment, planning, treatment, education, counseling and support from nurse. Nurse promotes comfort, ensures adequate hydration, 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 infection.

Aim of the Study:

- To determine the level of knowledge and self-care behaviors among women with UTI
- To determine the impact of instructional program about prevention of UTI recurrence on the level of knowledge and self-care behaviors among women with UTI

Subjects and Method:

Study Design:

A quasi-experimental design was utilized in this study.

Setting:

The study was conducted in the Umulj hospital, Tabuk.

Sample:

A convenience sample of 42 adult female patients attending the outpatient clinic, in Umulj hospital, Tabuk at Kingdom Saudi Arabia, and their age from 18 to 50 years was included in this study.

Data Collection:

Data was collected through use of the following tools:

Tool 1: Women knowledge structured interview schedule:

The interview schedule was developed to collect the data concerning urinary tract infection and self-care; it was in the form of open and closed-ended questions, which consists of the following parts:

Part (a): Socio-demographic characteristics of the sample which includes: age, level of education, residence, occupation, and perceived income.

Part (b): - Reproductive History: Parity, abortions, number of living children, presence of prolapsed uterus, previous use of contraceptive method, and previous history of UTI.

Part (c): It was developed by the researcher to collect data related to self-care practices, it includes main section:

1-Self –Care Assessment Structured Interviewing Schedule (SCASIS): It was developed by the researcher to collect data related to women's reported self-care practices including their personal daily habits as measures taken by women to relieve their urinary tract infection symptoms.: It contains questions related to:

A-Experience of the self-care practice: In the form of absence and presence of self-care practice, types of practices, frequency of performing them, and sources of information about these practices.

b-Specific Cognition of the self-care practice of which the women perceived benefits (whether her self care practice beneficial or not), and barriers of performing such practices.

Part (d): This part covers women Knowledge regarding urinary tract infection (Definition, causes, symptoms, risk factors, problems arises with UTI, effect of UTI on mother and baby and what self-care practices used to prevent, manage and /or relieve UTI).

Scoring system:

Scoring system for knowledge was determined through: (2) score for correct answers, (1) score for incorrect answers and don't know. The total score level were graded as (Weak < 50%, Average 50 < 70 %, Good 70-100%).

Part (e): Effect of women self-care practices on relieve of their UTI symptoms and women health three months later in the form of (completely relieved, moderately relieved, and not relieved). This part was evaluated by using designed Interviewing schedule.

Tool II: Self Care Practices ' Specific Affect:

Modified version of self-efficacy scale adapted from Ralf Schwarzer's (1991) to measure the women perceived self – efficacy in performing their self care practices. It contains 5 items: 2 negative, 1 indifferent, and 2 positive. For each item the woman has to choose between 3 alternatives: 3 certain, 2 not sure, 1 uncertain. The scores are reversed for the negative items. The total score ranged from 5-15 where: < 8 suggest low self – efficacy, 8- < 13 suggests average self – efficacy, and > 13 suggests high self-efficacy

Data Collection

After an extensive review of recent relevant literature using books, articles and scientific magazines was done by researcher to be acquainted with the problem and guided in the process of tools designing. The tools were tested for content validity by a jury of 3 experts in the field. Its reliability was tested by test retest technique.

Pilot study:

Pilot study was carried out before starting the data collection. The pilot study was carried out 3 day/week among four women with UTI symptoms attending in the clinic at of the previously mentioned settings. This was done to evaluate the applicability and clarity of tools. Then the necessary modifications were done.

The data obtained during assessment phase constituted the baseline data to assess women current UTI symptoms, their followed self-care practices and also their knowledge regarding UTI used (tools 1, 11) in order to determine the gaps and needs of women through an interview ranged from 20 - 25 minutes.

- Based on the results obtained from assessment phase, teaching sessions were developed according to the needs of women, constructed to satisfy women's deficit knowledge and to evaluate their self-care practices.

Procedure:

Implementation of teaching sessions (intervention guidelines) were implemented for six groups each group constituted seven women for a period of four weeks period. Five sessions, each session ranged from one to two hours. The content of the sessions covered the definition or meaning of UTI, causes, signs and symptoms, risk factors of UTI, problems associated with UTI (effect on quality of life), complications of UTI, and preventive and managing self-care measures or practices (healthcare behavior) regarding UTI symptoms as well as their point of view regarding the general concept of self care practices.

Different methods of teaching were used such as lecture, group discussion, demonstration and demonstration. Instructional media also was included.

-The effect of the intervention was assessed immediately (two weeks) after the implementation of the teaching sessions to constitute the post-test, and three months later as a follow-up assessment using the same tools (tool 1 parts (c,d)) to evaluate the effect of implemented instructional guidelines on women self-care practices on the relieve of their UTI symptoms and women health three months later.

Ethical consideration:

The necessary official permission and approvals for data collection were obtained by submission of the official letters containing the title and aim of the study to the directors of the previously mentioned settings. All women rights were maintained (informed consent) and informed by the purpose of the study, also privacy and confidentiality were ensured.

Statistical Analysis:

Data collected were organized, categorized, analyzed and results were presented in tables; the following statistical measures were used. Descriptive measures include (number percentage - Means, standard deviation – f test & p value - Correlation coefficient (r) test.)

Limitation of the Study:

1. Limited period of the research study.
2. Literature review and nursing researches in this area were inadequate.
3. There is no standard of care provided pre,
4. Number of patients was inadequate.

III. Result

Table (1): Frequency distribution of sociodemographic characteristics of the studied group (n= 42)

Variables	Frequency	
	No.	%
Age:		
• □20 years	4	9.52
• 20 < 30 years	21	50.0
• 30 < 40 years	12	28.57
• 40 < 50 years	5	11.90
Mean ± S.D	29.8± 89	
Occupation:		
• working	13	30.95
• Non-working	29	69.05
Level of education:		
• Illiterate & read & writing	11	26.19
• Secondary school	24	57.14
• University	7	16.67
Residence :		
• Rural	30	71.45
• Urban	12	28.57
Perceived income:		
• Enough	16	38.10
• Not enough	26	61.90

Table (1) reveals that half (50%) of the sample were from 20->30 years old with mean age 29.8±9.89, and about (69.05%) are housewives. The table also shows that about (57.14%) of women were at secondary school, about (71.43%) of women were from rural areas, and (61.9%) their monthly income is not enough.

Table 2: Percent Distribution of women according to their reproductive history: n=42

Women Reproductive History	NO	%
Parity:		
• primipara	10	23.81
• 2-3	21	50.00
• 4+	5	11.90
• <4	6	14.28
Mean ± S.D	2.68±0.98	
Abortion:		
None	32	76.19
1	6	14.29
2-3	3	7.14
4	1	2.38
>4	0	0
Living children:		
1-4	25	59.52
>4	17	40.48
Type of previous delivery:		
CS	10	28.81
Normal	23	54.76
Assisted delivery	9	21.45
Use of contraceptive		
Yes	14	33.33
No	28	66.67
If yes		
Hormonal	4	28.57
IUD	8	57.14
other	2	14.28
Previous history of UTI		
Yes	36	85.71
No	6	14.29

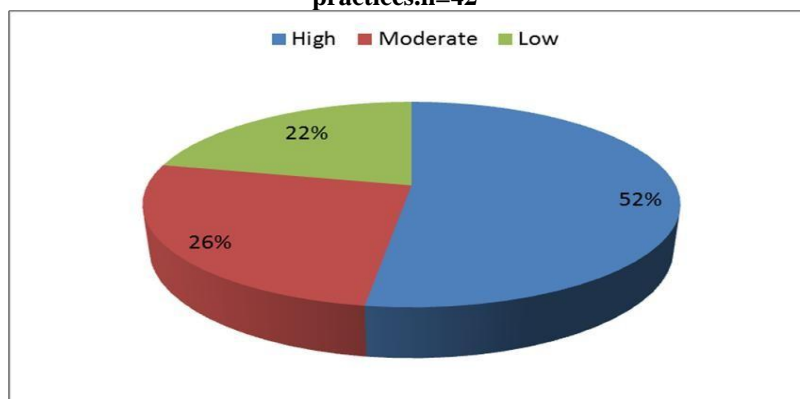
Table (2) shows that half (50%) of the sample had 2-3 deliveries, while (23.81%) were primipara. However their mean age of parity 2.68 ± 0.98 , also about (54.76%) had previous normal delivery and (23.81%) of them had CS. Moreover, about three quarters (76.19) of women did not have abortion before, also (59.52%) had from 1-4 living children.

Table (3): Percent distribution of women's according to the effect of self-care on relieving their UTI symptoms 3 months after intervention as reported. (n=42)

Item	women's UTI symptoms 3 months postintervention						test	p
	Relieved		Moderately relieved		Not relieved			
	n	%	n	%	n	%		
Fever n= 15	9	60.0	4	26.7	2	13.3	12.2	0.001*
Lower abdominal pain (Pain super pubic) n=34	16	47.1	11	32.4	7	20.6	5.65	0.021*
pain in urination (dysuria) n=39	21	53.8	13	33.3	5	12.8	13.6	0.001*
burning sensation of urination n=40	18	42.9	14	33.3	8	19.0	10.2	0.001*
Urgency n=37	23	62.2	8	21.6	6	16.2	18.65	0.001*
Incontinence n= 28	14	50.0	8	28.6	6	21.4	8.98	
Dysparunia n=30	19	63.3	9	30.0	2	6.7	17.5	0.001*
Itching sensation n= 18	11	61.1	3	16.7	4	22.2	6.98	0.001*
Fatigue n=23	12	52.2	9	39.1	2	8.7	13.65	0.001*
Urine color change n=17	8	47.1	6	35.3	3	17.6	14.52	0.001*
Vaginal discharge n= 25	11	44.0	7	28.0	7	28.0	10.2	0.001*
Right or left side pain n=14	6	42.9	4	28.6	4	28.6	6.35	0.002*

Table 3 shows that more than half of the women (63.3%), (62.2%), (61.1%), (60.0%), Their UTI symptoms had been relieved completely 3 months after intervention such as dysparunia, urgency, itching sensation, and fever respectively. On the other hand, about (39.1%), (35.3%), and (33.3 %) of the women their UTI symptoms had been moderately relieved 3 months after intervention such as fatigue, urine color change, pain in urination (dysuria), burning sensation of urination and Lower abdominal pain (super pubic Pain) respectively. Meanwhile, the table also shows that about (28.6%), (28%) and (22.2 %) of the women their UTI symptoms were not relieved such as right or left side pain, vaginal discharge, and also itching sensation respectively.

Figure 1: Percent distribution women according to their perceived self-efficacy in performing self-care practices. n=42



High efficacy = 52.3 % Moderate efficacy = 26.1% Low efficacy = 21.6 %

Table 4: Mean scores of women knowledge before & immediately after the implementation of the interventions and 3 months later as regards items related to urinary tract infection (n=42)

Knowledge Items	Women Knowledge score (mean \pm SD)			F	P
	Before interventions	After interventions	3 months later		
Definition or meaning of UTI	0.36 \pm 0.68	1.62 \pm 0.12	1.60 \pm 0.14	4.65	0.031*
Causes of UTI	1.25 \pm 1.07	4.52 \pm 0.42	3.22 \pm 1.05	4.98	0.029*
Signs and symptoms of UTI	5.61 \pm 2.07	11.02 \pm 0.74	9.58 \pm 2.07	6.58	0.001*
Risk factors of UTI	2.69 \pm 1.85	6.01 \pm 0.75	5.41 \pm 1.16	7.26	0.001*
Complications of UTI	2.11 \pm 1.98	5.98 \pm 1.01	4.1 \pm 1.68	6.58	0.001*
Preventive and managing self care measures (health care behavior) regarding UTI symptoms	6.52 \pm 2.32	11.8 \pm 1.07	10.1 \pm 2.65	6.85	0.001*

Table (4) clears up that there is significant improvement of the women's knowledge regarding most of the studied items in relation to urinary tract infection before & immediately after the implementation of the interventions and 3 months later $p < 0.001$.

Figure 2: Total score level of knowledge of women regarding urinary tract infection before & immediately after the implementation of the interventions and 3 months later.

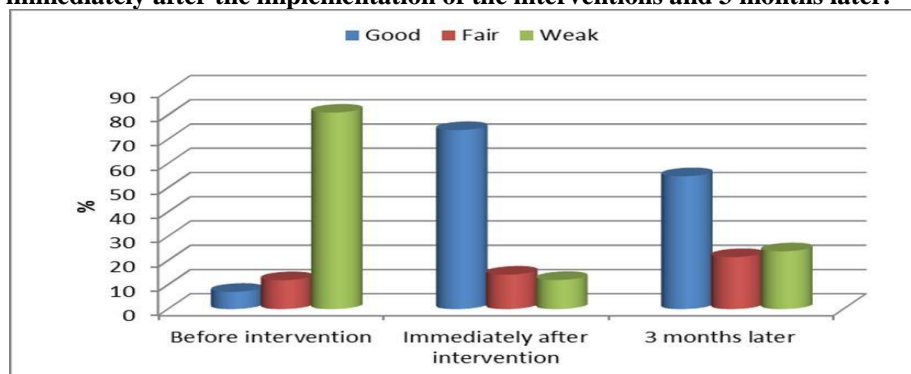


Figure (2) shows a positive correlation between level of knowledge of women regarding urinary tract infection before & immediately after the implementation of the interventions and 3 months later.

Table (5): Percent Distribution of women according to their self-care practices of UTI symptoms (voiding changes) as reported by women before the intervention. N=42

Women reported Self-care practices to relieve their UTI symptoms before the intervention.	n	%
- Do Nothing	7	16.67
-Use gel for pain in intercourse	21	50.00
-Massage in a abdomen	19	45.24
-Use anti septic solution in water For perineal care	25	59.52
-Change clothes (underwear)	29	69.05
-Cold compression on bladder	31	73.81
-Vulval and vaginal washing with watermelon	32	76.19
Personal daily habits		
- Frequent drink coffee & tea	33	78.57
-Drink home remedies	21	50.00
-Drink warm fluid	18	42.86
-Eating spicy or heavy food	27	64.29
Practicing exercises		
-Yes	14	33.33
-no	28	66.67
-Intake of self prescribed medications	25	59.52
-Sitz bath in salt water	32	76.19
-Application of lemon juice to urethra and perneal area	26	61.90
-Vulval and vaginal douching by warm water with aspirin	21	50.00
-Sitz bath in water with chamomile	30	71.43
-Sitz bath in tea	11	26.19
-Sitz bath in cornflower in dissolved water	13	30.95
-Application of spermicidal creams & suppositories	9	21.43
-Increase periods of rest	12	28.57
All items of practices are not mutually exclusive		
Frequency of performance:		
-Every 2-3 days	31	73.81
-One time a day	9	21.43
- 2-3 times per day	2	4.76
Source of knowledge **:		
-Not definite	21	50.00
-Family member	25	59.52
-Friends/ neighbor	14	33.33
-Female pharmacist	13	30.95
Perceived benefits of the practice:		
- Very effective	20	47.62
- Relatively effective	13	30.95
- Not effective	9	21.43
Perceived barriers of performing the practice:		
- None	17	40.48
- Lack of time	13	30.95
Wrong and /or traditional believes	12	28.57

Table 4 illustrates that the majority of women reported that they performed self-care measures to relieve their UTI symptoms before the intervention such as change clothes underwear by (69.05 %), cold compression on bladder by (73.81%), vulval and vaginal washing with watermelon by (76.19%) and frequent drink coffee & tea by (78.57%) of them respectively. It is also reported sitz bath in water with chamomile by (71.43) sitz bath in salt water by (76.19%), application of lemon juice to urethra and perineal area by (61.90 %), and about (59.52 %) of women have taken self-prescribed medications. The table also reveals that about (73.8) of women performed these self-care practices every 2-3 days, slightly less than half of them (47.62%) perceived these practices as beneficial.

IV. Discussion

One of the very common health conditions that afflict many women in their reproductive years is Urinary Tract Infection or UTI. Urinary Tract Infection as such is not serious; it can be so in women. There is an increased risk of kidney infection, pyelonephritis in women with UTI, this is a far serious condition, and if neglected or untreated, can even lead to kidney failure. Therefore, a regular urine analysis is recommended to eliminate the risk of urinary infection (11)

Self-care is the development and use of personal health practices and coping skills for promoting their own health, preventing or limiting disease, and maintaining wellbeing. These activities are usually undertaken without professional assistance. However, in spite of its great importance of self-care practices for health maintenance it may be harmful if it is based on wrong knowledge or harmful attitudes. (12)

In this context, the aim of this study is to investigate the impact of instructional program about prevention of UTI recurrence on the level of knowledge and self-care behaviors among women with UTIs

The present study revealed that the mean age of the study sample was 29.8 ± 9.89 , where about half of women their age ranged between 20-30 years. This result is consistent with a study conducted by (Millar LK, et al 1997) who reported that the higher percentage of women with urinary tract infection (54, 5%) were found within the group age 20-29 years. This result is also supported by (Kodikara H, et al 2009) who reported that women diagnosed with urinary tract infection, (60%) belonged to age group of 20-30 years. On the contrary, (Gilstrap LC, 2001) reported that the women diagnosed with urinary tract infection (40%) were between 31-40 years.

Moreover, (Widmer M, et al. (2011) reported that urinary tract infections are more common in older women and lower socioeconomic status, while (Mathai E et al., 2004) reported that the higher percentage of women (77.8%) with urinary tract infection were found within the age group of 36-40 years.. The findings of the present study also revealed that the majority of women were housewives with secondary school education lived at rural areas.

This result agrees with (Wing DA et al., (1995) reported that the incidence of urinary tract infection increases among the illiterate and low socioeconomic. Moreover (Dimetry et al., (2007) reported that low educational level and illiterates were significantly associated with urinary tract infection. (Vazquez JC et al. (2011); & (Widmer M et al. (2011) suggested that high incidence of UTI may also be attributed to such factors as poor housing, poor drainage systems, lack of proper personal and environmental hygiene, genuine population susceptibility and such factors of lower socioeconomic status.

The study revealed that a vast majority of women were multipara of 2-3 deliveries, This finding is in line with (Duarte G, et al., (2008) who reported that the past reproductive history of UTI and multiparity were found to be risk factors for UTI in these women, and (Thurman AR et al., (2006) also reported significant relation between UTIs and ≥ 4 gravida. Furthermore, (Rouse DJ, et al., 1995) reported that the urinary tract infections are more common in women of higher parity due to sexual activity. Multiparity are at high risk of urinary tract infection due to trauma to the pelvic floor during labor or weakening of the supportive structures. This is in accordance with (Gilstrap LC, 2001) who reported that women in their 2nd and 3rd trimester had a greater number of urinary tract infection (41.4%) and (55.1%) respectively.

Meanwhile, according to the present study findings, significant improvements were shown in women total scores of knowledge from poor or weak score levels to good levels regarding most of the studied items. The items that demonstrated significant improvements after implementation of the intervention were related to, causes, signs and symptoms, risk factors of urinary tract infection, problems associated with UTI, and also the preventive and management self-care measures to relieve urinary tract infection symptoms.

This improvement refers to the effect of the instructional guidelines and teaching sessions given to the women to change their behavior, enhance and upgrade their self-care practices to relieve their urinary tract infection symptoms. As urinary tract infection, can be reduced by doing the following healthy measures such as: Develop a habit of urinating as soon as the need is felt and empty bladder completely when you urinate.

Urinate before and after intercourse, avoid intercourse while you are being treated for an UTI, after urinating blot dry (do not rub), and keep your genital area clean. Make sure that you wipe from the front toward the back, avoid using strong soaps, douches, antiseptic creams, feminine hygiene sprays, and powders.

Change underwear and pantyhose every day; avoid wearing tight-fitting pants. Wear all cotton or cotton-crotch underwear and pantyhose; don't soak in the bathtub longer than 30 minutes or more than twice a day, drink 6-8 glasses of water each day and unsweetened cranberry juice regularly, and eliminate refined foods, fruit juices, caffeine, alcohol, and sugar.

The findings of the present study are in line with (Hill JB et al. (2005) noted that the measures that reduce the risk of urinary tract infection are: use of condoms, voiding after sexual contact, and the type of underwear used, personal hygiene methods used after voiding or defecating, and whether one takes a bath or shower. In addition, ((Smaill F et al.(2007)& - (McKenzie H, et al. (1999), reported Screening of all women for bacteriuria is recommended follow-up urinalysis and advised the importance of proper personal hygiene and good environmental sanitation habits.

As regards the self-care practices as reported and performed by women to relieve their signs and symptoms of urinary tract infection such as for example dysurea and dysparonia and the other reported symptoms mentioned before. In the present study although a vast majority of women before the implementation of the intervention, performed self-care measures to deal with their UTI symptoms, and perceived them effective and so beneficial. These self-care measures were sitz bath in salt water, sitz bath in water with chamomile, perform vulval and vaginal washing with watermelon, cold compression on bladder, use gel for pain in intercourse, intake of self-prescribed medications, use anti septic solution in water for perineal care, apply spermicidal creams, and vaginal douches, as well as the reported unhealthy daily habits (life style).

Meanwhile, after the implementation of the intervention and the instructed guidelines for women regarding performance of healthy self-care practices, a significant positive effect on their relief of urinary tract infection symptoms are evident by the study findings. Where it is revealed that most of women's UTI symptoms have been significantly relieved or somewhat improved by a way or another after healthy self-care measures have been instructed, followed and used. These findings are supported by (Salvatore, S, et al., (2011) who reported that perineal care must be using plastic bottle filled with warm water with an antiseptic solution to cleanse the perineal area after the mother voids or defecates in direction from front to back. (Duarte G, Marcolin AC et al. (2008) also reported that the warm showers can be therapeutic because they relax tense, tired muscles, help counter insomnia, and make the women feel fresh.

Also (Sheiner E, Mazor-Drey E et al., (2009) recommended the follow-up urine analysis and advised the importance of proper personal hygiene and good environmental sanitation habits. So, this study highlighted that there was lack of women's knowledge regarding the concept of self-care practice as well as the basic health practices. However, the need to raise awareness regarding UTIs and to expand services for prevention and treatment for women as well as health education to learn about self-care practices during UTI is crucial.

V. Conclusion and Recommendations

Based on the findings of the present study, it can be concluded that the majority of women were lacked the essential knowledge regarding urinary tract infection and its effect on themselves. The study findings also reported inadequacies regarding their self-care practices, which represent their lacking of the concept of healthy self-care practice. Meanwhile, after conduction of the interventions regarding performance of effective and healthy self-care measures immediately and three months follow up, significant improvement was obvious among women relief of most of their reported urinary tract infection symptoms.

Therefore, the recommendations pertaining to this study could be:

1. Improve the quality of health care provided at the community level. Since urinary tract infection may be symptomatic and asymptomatic in most cases, it is therefore suggested that routine screening of women with unexplained sources of fever and signs of infection.
2. Health education about self-care practices to be geared for reinforcement, modification and/or abolishment according to their benefits versus harm.
3. Self-care concept should be empowered as an essential part of all levels and strategies of women health care.
4. Further researches are needed regarding factors and barriers associated with the utilization of self-care practices through reproductive years for women as well as for management of various gynecological problems.
5. Investigation of the most common seeking self-care herbs as regard their effect, benefits and side effects on women's quality of life.

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