EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME REGARDING PREVENTION AND MANAGEMENT OF URINARY TRACT INFECTION DURING PREGNANCY AMONG WOMEN IN SELECTED HOSPITAL OF DEHRADUN, UTTARAKHAND

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Abstract

This study has been undertaken to investigate the effectiveness of structured teaching programme on knowledge and practice regarding prevention and management of urinary tract infection during pregnancy among women in selected hospital of dehradun.**Objectives of the study:1.**to assess knowledge and practice regarding prevention and management of urinary tract infection during pregnancy among women.**2.** To assess the effectiveness of structured teaching programme regarding prevention and management of urinary tract infection during pregnancy among women.**3.**To find association between knowledge score and practice with their selected demographic variables**.** A quasi experimental research one group pretest and posttest design was used.Total 60 pregnant women were selected by using convenient sampling technique, Data was collected by using socio-demographic characteristics of pregnant women, structured knowledge questionnaire and self-reported practice checklist. The mean post test knowledge score (20.98± 1.18) were apparently higher than that of mean pretest knowledge score (11.90 ±2.26) and the significant difference between the mean of pre test and post test knowledge (9.08). There was significant association between the level of knowledge score with their selected demographic variable previous knowledge about UTI.In practice the mean post test practice score (9.93 ± .7561) were apparently higher than that of mean pretest practice score (9.40 ±1.26) and the significant difference between the mean of pre test and post test practice (0.53). There was no significant association between the practice and the selected demographic variables in study. The teaching programme regarding prevention and management of urinary tract infection during pregnancy was found an effective method in increasing the knowledge and improving practice of pregnant women

Keywords: Effectiveness, Structured Teaching Programme, Prevention, Management, Knowledge, Practice, Pregnancy, women.

Introduction

"Pregnancy is a process that invites you to surrender to the unseen force behind all life."

Judy Ford

Human life is begin with the union of two cells, one from the female, called the ovum and one from the male called the sperm. This union of these male and female cells known as fertilization or conception, or the condition is known as pregnancy.

During pregnancy there is progressive anatomical and physiological changes in all the system of the women's body. Changes during pregnancy are necessary to mother be able to provide oxygen and nutrients for her own body, and also nurture the fetal growth and development. This is principally a phenomenon of maternal adaptation to the increasing demand of the growing fetus.

During pregnancy the hormonal effect increases the risk for UTI due to lack of estrogen. Estrogen loss thinning of the walls of the urinary tract and reduces its ability to resist bacteria. It also reduces certain immune factors in the vagina that help to block E. coli from adhering to vaginal cells. Pregnancy UTI is classified into two categories of symptomatic and asymptomatic. Asymptomatic bacteriuria (ASB) is more serious problem compared to symptomatic bacteriuria because diagnosis of asymptomatic bacteriuria is difficult and it is a condition which is common during pregnancy.

Untreated asymptomatic bacteriuria is a risk factor for acute cystitis (40%) and pyelonephritis (25-30%) in pregnancy. UTIs are associated with premature delivery, low-birth-weight infants, cesarean delivery, morphological abnormalities and infant mortality.

Need of study

Women are 30 times more prone to have UTI than men. Up to 15% of women who will develop UTI once in their life time. However, during pregnancy, the tendency of UTI increases partly due to the hormonal and immunological changes during normal pregnancy.

During pregnancy approximately 90 % women may develop urethral dilation that may cause urinary stasis and ureterovesical reflex. Additionally the physiological plasma increase in volume concentration up to 70 % woman may develop glycosuria which is consider to encourage bacterial growth in urine.

The increase risk factor of UTI in women may be due to short urethra. (Approximately 3- 4 cm in females) and difficulty to maintain hygiene due to a gravid uterus, increase the frequency of micturation of urine in pregnant women may lead to easy ascent of the micro-organisms into the bladder.

UTIs are associated with premature delivery, low-birth-weight infants, cesarean delivery, morphological abnormalities and infant mortality. UTI in pregnant women begins in the 6th week of pregnancy and reaches its peak in weeks 22 - 24 and about 90% of these women develop urethral dilations.

The woman usually reports pain and burning micturation urgency, frequency and voids only small amounts at a time and 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.

Urinary tract infection and its associated complications are the cause of nearly 150 million deaths per year worldwide. The disease can be developed in 40% - 50% of women. After anemia UTIs are the second common complications in pregnant women if it is not controlled well, can adversely affect the health of newborn or the pregnant mother.

Methodology

Research Approach: Quantitative research approach was adopted in the study .

Research design: Quasi –experimental, one group pre-test post-test design was adopted as research design in the study.

Research setting: Antenatal OPD, HIHT hospital Rishikesh, Dehradun, Uttarakhand. It provides specialist care in Obstetrics and Gynaecology.

Sample : 60 pregnant women. Selection of sample was done by convenient sampling technique in the present study.

Criteria for sample selection:

Inclusion criteria: Pregnant women who

- were willing to participate.
- were present at the time of data collection.
- were attending antenatal OPD.
- who were residing with in the 8 kilometers of study setting.

Exclusion criteria : Pregnant women who :

- were in labor pain.
- were health professionals.
- suffered from other associated medical conditions.

The data collection tool in the present study consisted of:

Tool –I Socio-Demographic variables: Socio- demographic variables included in the study were age, education, occupation, income/ month in rupees, types of family, area of living, no of gravida.

Other variables: History of UTI with previous pregnancy, use of contraceptive method before conception, previous knowledge about prevention of Urinary tract infection during pregnancy.

Tool –II Structured knowledge questionnaire to assess the knowledge of the pregnant women regarding prevention and management of Urinary tract infection during pregnancy.

Tool – III A **self reported practice checklist** to assess the practice of pregnant women regarding prevention of UTI during pregnancy. There were total 20 statements included in the practice checklist. The scoring was done as the right answer will got one mark (1) and wrong answer got zero (0) marks.

Tool- IV Structured Teaching Programme

Data collection Procedure

The Formal administrative permission was obtained. Data was collected in December 2016. The selected subjects were explained about the purpose of the study and assured for the confidentiality of their responses. A written informed consent was obtained. The data was collected in two phases. Structured Interview method was used to collect the data with the help of socio-demographic variable, structured knowledge questionnaire and self reported practice checklist tools. On the same day structured teaching programme on prevention of UTI during pregnancy was administered. After seven days posttest was conducted.

Data analysis

The plan of data analysis includes both descriptive and inferential statistics. A master data sheet was prepared with the responses given by the pregnant women. All the hypothesis were tested at the $P < 0.05$ level of significance.

Following descriptive and inferential statistics were planned to use;

- Frequency and percentage distribution of demographic variables of the pregnant women of one group pre test- post test.
- Paired t-test between the pretest and posttest scores of knowledge and practice of the women.

- Chi –square, Fisher's exect test and Yates correction used to find the association between the socio-demographic variables and pretest knowledge score and practice score of the women.

Analysis

Section No 1. Frequency and percentage distribution of socio-demographic characteristics of the pregnant women.

Most 30 (50%) were in the age group 26-30 years.only Four (7%) of the study participants were found in the age group of 31-35years.

Majority 56 (93%) of the study participants were not working and only four (7%) were working in private job.

Most 36 (60%) of the study participants belongs to urban area and 24(40%) belongs to rural area.

Most 33(55%) of the study participants were primigravida and 27(45%) were multigravida.

Majority 56(93%) of study participants were not having the history of UTI in previous pregnancy and only four (7%) were having the previous history of UTI in previous pregnancy.

Majority 56(93%) of the study participants were not using contraceptive method before conception and only Four (7%) were using contraceptive method before conception.

Majority 47(78%) of study participants were not having previous knowledge about UTI and only 13(22%) were having previous knowledge about UTI and out of 13 participants seven (53%) were got the knowledge from health professional and six (46%) were got knowledge from family members.

Table no 1: Effectiveness of structured teaching programme among pre and post test level of knowledge score regarding prevention and management of UTI during pregnancy among women.
n-60

S.No	Level of Knowledge score	Mean ± SD	Mean difference	Mean (%) percentage	t value	P value
1.	Pretest score	11.90 ±2.26	9.08	19.83	29.19	0.0001*
2.	Post test score	20.98 ± 1.18		34.96		

df $_{59}$ = 2.00 at p< 0.05   *** Significant**

Table No.1 shows that the effectiveness of structured teaching programme among pretest and post test knowledge score of pregnant women regarding prevention and management of UTI during pregnancy.

The finding reveals that the mean post test knowledge score (20.98± 1.18) were apparently higher than that of mean pretest knowledge score (11.90 ±2.26) and the significant difference between the mean of pre test and post test knowledge (9.08). Whereas t= 29.19 which was greater than the table value So the null hypothesis rejected and research hypothesis was accepted.

Table no 2: Effectiveness of structured teaching programme among pre test and post test practice regarding prevention and management of UTI during pregnancy among women.

n-60

S.No	Practice of women	Mean ± SD	Mean difference	Mean (%) percentage	t value	P value
1.	Pre test score	9.40 ±1.26	0.53	15.6%	3.128	0.001*
2.	Post test score	9.93 ± .756		16.6%		

df $_{59}$ = 2.00 at p< 0.05   * Significant

Table No.2 shows that the effectiveness of structured teaching programme among pretest and post test practice score of women regarding prevention and management of UTI during pregnancy. The finding reveals that the mean post test practice score (9.93 ± .7561) were apparently higher than that of mean pretest practice score (9.40 ±1.26) and the significant difference between the mean of pre test and post test practice (0.53).whereas t= 3.128 which was greater than the table value. So the null hypothesis rejected and research hypothesis was accepted.

Table no 3: Association between level of knowledge score with their socio- demographic variables.

n- 60

S.No	Variables	Below median (12)	At & above median (12)	χ^2
1.	**Age in years** (a) 20 – 27 years (b) 28 – 35years	16 13	20 11	0.54
2.	**Education** (a) Secondary education (b) Graduation	21 8	17 14	0.35
3.	**Occupation** (a) Working (b) Non working	01 27	03 29	0.80 [#]
4.	**Income / month in Rs** (a) Below 15000 (b) Above 15001	09 19	07 25	0.80
5.	**Type of family** (a) Nuclear (b) Joint	12 16	12 20	0.17
6.	**Area of living** (a) Rural (b) Urban	11 17	12 20	0.01
7.	**No of Gravida** (a) Primigravida (b) Multigravida	14 14	18 14	1.04
8.	**History of UTI in previous pregnancy.** (a) Yes (b) No	0 28	04 28	0.11 [s]
9.	**Use of contraceptive method before conception** (a) Yes (b) No	01 27	03 29	0.80 [#]
10.	**Previous Knowledge about UTI** (a) Yes (b) No	02 26	11 21	**6.52** [#*]

df (1) = 3.84 at p< 0.05   [#] Yates correction , [s] Fisher exect, * significant

Table no.3 shows that there was no significant association between the level of knowledge score with their selected demographic variables such as age, education, occupation, income/month in rupees., type of family, area of living, no of gravida, history of UTI in previous pregnancy, use of contraceptive method before conception except the previous knowledge about UTI . Therefore it could be

interpreted that demographic variable such as previous knowledge about UTI can influence the knowledge of women regarding prevention and management of UTI during pregnancy. Hence the null hypothesis was rejected and research hypothesis was partially accepted for the variable of 'Previous knowledge about UTI'.

Table No 4: Association between practice score with their socio-demographic variables.

n-60

S.No	Variables	Below median (10)	At & above median (10)	χ^2
1.	**Age in years** (a) 20 – 27 years (b) 28 – 35years	 22 09	 15 14	 2.33
2.	**Education** (a) Secondary education (b) Graduation	 17 12	 21 10	 0.52
3.	**Occupation** (a) Working (b) Non working	 01 29	 03 27	 1.07[#]
4.	**Income / month in Rs** (a) Below 15000 (b) Above 15001	 07 25	 09 19	 0.79
5.	**Type of family** (a) Nuclear (b) Joint	 10 18	 14 18	 0.39
6.	**Area of living** (a) Rural (b) Urban	 12 17	 11 20	 0.96
7.	**No of Gravida** (a) Primigravida (b) Multigravida	 17 13	 15 15	 0.26
8.	**History of UTI in previous pregnancy** (a) Yes (b) No	 03 26	 01 30	 0.01[#]
9.	**Use of contraceptive method before conception** (a) Yes (b) No	 03 26	 01 30	 0.01[#]
10.	**Previous Knowledge about UTI** (a) Yes (b) No	 06 24	 07 23	 0.08

df $_1$ = 3.84 at p< 0.05   # Yates correction

Table No.4 shows that there was no significant association between the practice score and selected demographic variables such as age, education, occupation, income/month in rupees, type of family, area of living, no of gravida, history of UTI in previous pregnancy, use of contraceptive method before conception, previous knowledge about UTI . Hence the research hypothesis was rejected and the null hypothesis accepted.

Table No.5 Component wise comparison of mean, SD & mean percentage of pretest and post practice regarding prevention and management of UTI during pregnancy among women.   **n-60**

S.N	Component wise practice related to prevention &management of UTI	Maximum Score	Mean ± SD (Pretest)	Mean Percentage	Mean ± SD (Post test)	Mean Percentage
1.	Sign & Symptoms	8	5.01 ±1.157	62.62	5.95 ± .981	73.75
2.	Personal Hygiene	4	3.61 ± .523	90.25	3.96 ±.181	99
3.	Diet & Fluid	4	2.85 ±.898	4.75	3.58 ±.645	5.96
4.	Medication	4	2.25±.508	3.75	2.66 ±.509	4.43

Table No 5: shows that the component wise comparison of practice score in which mean post test practice score was higher than the mean pretest practice score and The highest mean percentage was (99%) in post test in personal hygiene and least was (4.43%) in medications area. Whereas in the area of sign and symptoms got (73.75%) and in Diet and fluid area (5.96%) in posttest practice

Table no.6 Item wise comparison of pre test and post-test practice score of sign and symptom of UTI among women regarding prevention and management of UTI during pregnancy.   **n-60**

S.NO	Items	Pre test		Posttest	
		Yes (%)	No (%)	Yes (%)	No (%)
1.	Do you feel burning micturation.	15	85	02	**98**
2.	Do you feel itching sensation in vaginal area.	35	65	02	**98**
3.	Do you feel pain in the area of the lower abdomen.	75	25	52	**48**
4.	Do you feel tenderness in the lower abdomen.	58	42	44	**56**
5.	Do you have vaginal discharge.	88	12	91	08

Table No.6 shows that the item wise comparison of pre test and post-test practice score of sign and symptom of UTI among women regarding prevention of UTI during pregnancy in which "Do you feel burning micturation (98%)", " Do you feel itching sensation in vaginal area (98%)'' "Do you feel pain in the area of the lower abdomen (48%)"," Do you feel tenderness in the lower abdomen(56%)" which shows increase practice in post test towards the prevention and management of UTI. The lowest frequency was obtained for the items "Do you have vaginal discharge (8%) "which might be due to the vaginal discharge is normal during pregnancy.

Discussion

   The findings of the present study have been discussed with the reference of the objectives and statistical analysis and findings of the other researchers done on same field **Socio-demographic characteristics of the pregnant women** Regarding education, most 37 (63%) were secondary education and   Regarding occupation Majority 56 (93%) of the study participants were not working.

The result were supported by the finding of the quasi experimental study conducted by **Manal Hassan Ahmed,** Effect of intervention Guidelines on self care practices of pregnant women with urinary tract infection, antenatal clinic at Tanta University Hospital and El Menshawy Hospital (2015). Most (69.05%) of the study participants are housewives, Most (57.14%) of study participants were at secondary school.

Effectiveness of structured teaching programme regarding knowledge: The mean post test knowledge score (20.98±1.18) were apparently higher than that of mean pretest knowledge score (11.90±2.26) hence the score predicted that the significance difference between the mean of pre test and post test knowledge at p<0.05 level.

The result were supported by the study conducted by **Marzieh Jalali, Mohsen Shamsi, Nasrin Roozbehani and Koroosh Kabir** study on Investigation of Health Education Based on Theory of Planned Behavior on Behavioral (TPB) Promotion of Urinary Infection Prevention among Pregnant Women shows mean knowledge about urinary tract infection in experimental and control group was 42.41±8.57 and 41.51±8.36 respectively. After intervention mean knowledge about urinary tract infection in experimental and control group was 75.24±8.72 and 41.72±7.65 respectively (p=0.013) improvement in knowledge.

Effectiveness of structured teaching programme regarding practice: The mean post test practice score (9.93 ± .7561) were apparently higher than that of mean pretest practice score (9.40 ±1.26). Hence the score predicted that the significance difference between the mean of pre test and post test practice at p<0.05 level.

The result were supported by the study conducted by Manal Hassan Ahmed, assess the effect of intervention Guidelines on self care practices among pregnant women with urinary tract infection, antenatal clinic. The finding of the study shows significant improvements in the practice were found at the post-test and months later compared with pre-intervention scores of practice of mothers (p<0.001).

Association between the pre-test level of knowledge score with their selected demographic variables.

The study shows that only previous knowledge about UTI was having statistical significant association with the pretest knowledge score at the level p<0.05. Other demographic variables like age, education, type of family, occupation, monthly income, gravida, area of living, previous history of UTI with previous pregnancy, use of contraceptives method before conception were not having any association with pre-test level of knowledge score at the level p<0.05.

The supportive study conducted by **Adhikari Sirjana, Dhakal Rojana** on the knowledge on Urinary Tract Infection among Primigravida mother in Pokhara University, Nepal show contrary result that there is significant association of level of knowledge with selected demographical variables; Age of women ($\chi2$= 8.53).

Association between the pre-test practice score with their selected demographic variables.

The study shows that the demographic variables like age, education ,type of family, occupation, monthly income, no of gravida, area of living , previous history of UTI with previous .pregnancy, use of contraceptives method before conception and previous knowledge about UTI were not having any association with pre-test level of practice score at the level p<0.05.

The supportive study conducted by **Shatha Ahmed Mohammed Ali, Kareem Ghadhban Sajem and Alaa SalimTawfeq** on Urinary Tract Infection as a Health Problem among Pregnant Women shows contrary result that maternal age, educational status, and occupation had been significantly associated with development of the UTI in women.

Conclusion

Based on the finding of the present study it is concluded that the most of the pregnant women had less knowledge and unsatisfactory practice regarding prevention and management of UTI during pregnancy

Recommendations

- A similar study can be done on large group of pregnant women and for long period.
- A study can be done to find out the prevelance of UTI during pregnancy.
- A similar study can be done on effect of preventive measure on UTI during pregnancy.

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