International Journal of Midwifery and Nursing Practice

E-ISSN: 2663-0435
P-ISSN: 2663-0427
www.nursingpractice.net
IJMNP 2024; 7(2): 95-98
Received: 17-08-2024
Accepted: 21-09-2024

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A study to evaluate the effectiveness of structured teaching programme on prevention of urinary tract infection among antenatal women visit primary health centre, Manicampalayam at Namakkal

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DOI: https://doi.org/10.33545/26630427.2024.v7.i2b.177

Abstract
The purpose of this study was to determine the effectiveness of a structured teaching program regarding the prevention of Urinary Tract Infections (UTIs), which are common in pregnant women and can result in complications like pyelonephritis, low birth weight infants, premature delivery, and occasionally stillbirth. The study used a quasi-experimental one group pre-test post-test design without a control group. Thirty antenatal women who were registered in the ANC clinic at the Primary Health Centre in Manicampalayam, Namakkal, were chosen using a non-probability purposive sampling technique. Data were collected by administering a structured knowledge questionnaire before and after the implementation of a structured teaching program. Data were analyzed using descriptive (which includes mean, SD, frequency and percentage) and inferential (which includes t-test and Chi-square [χ 2] test) statistics and were represented in tables and graphs. Respondents knowledge level was inadequate 18(60%) in pretest and none in post-test, moderate level was 12(40%) in pretest, 14(46.6%) in post-test and adequate level was 16(53.3%) in post-test but none of them in pre-test. The result revealed that after structured teaching programme the level of knowledge was increased which was evidenced by improved post-test level of knowledge score.

Keywords: Structured teaching program, prevention of urinary tract infection, pregnancy, antenatal mothers

Introduction

Childbirth is considered a significant life event, a natural, normal physiological phenomenon that introduces new experiences in a woman's reproductive life. The birth event has a great physiological, emotional, and social impact on the woman and her family, causing stress, physiological pain, and fear of dangers. Pregnancy is often described as an exciting time in a woman's life, but the emergence of an unexpected problem can drastically change this description. Take the example of a woman who had a problem-free pregnancy and then unexpectedly develops a condition during labor, turning a routine situation into a potential crisis.

Even for healthy women, pregnancy is stressful on a biological, physiological, and psychological level. Problems like, hemorrhage hyperemesis gravidarum, Hypertensive disorders, Anemia, Diabetes Mellitus, Epilepsy, infections like toxoplasmosis, rubella, group B streptococcus, urinary tract infection etc. will complicate the pregnancy. Among all infections, Urinary Tract Infection (UTI) is the most prevalent medical consequence of pregnancy occurring in roughly 4-7% of pregnant women. The incidence of UTI during pregnancy is 4.8% in affluent nations, 8.8% in India, and roughly 5-9% in Tamil Nadu, according to a 2009 survey.

Between 2 and 10% of expectant mothers are thought to get a UTI of some kind. These infections cause the bulk of antepartum admissions to the maternal-fetal medicine units and can complicate up to 20% of pregnancies.

A pregnant woman who resides in an area where poor environmental hygiene practices are prevalent may have a worsening urinary tract infection. Even so, the typical pain of pregnancy might occasionally make the woman feel sick. Nowadays, a lot of families are nuclear, with the women being housewives who handle all the chores around the house, including cooking, cleaning, and laundry. Urinary tract infections in pregnant women may

intensify as a result of the additional workload. Pregnancy-related issues are recognized and addressed through the full process of adequate prenatal care. Early and ongoing risk assessment, health promotion, medical and psychosocial therapies, and follow-up are essential elements of prenatal care.

Statement of the problem

A study to evaluate the effectiveness of structured teaching programme on prevention of urinary tract infection among antenatal women visit primary health centre, Manicampalayam at Namakkal.

Need for the study

The main driver of lower rates of maternal death and morbidity is prenatal care. Pregnancy-related urinary tract infections occur without the use of medication. Preventing urinary tract infections during pregnancy will be made easier with a thorough awareness of both traditional and modern medical perspectives. UTIs often start in the sixth week and peak in the twenty-second to twenty-fourth week. Four to eight percent of pregnancies end in asymptomatic bacteriuria. One to two percent of pregnancies end in pyelonephritis. One percent of expectant mothers will experience acute cystitis.

Pregnancy- related bacteriuria can have serious consequences. Between 4 and 7% of pregnant women have bacteriuria overall. Between two and seven percent of pregnant women experience asymptomatic bacteriuria.

Primigravida are more likely than multiparous to experience urinary tract infections. A recurrent infection is 50% more likely to occur if there has been a prior urinary tract infection, 25% more likely if there is silent bacteriuria, and roughly 25% more likely to have a renal system abnormalities. According to regular screening, between 2 and 10% of young women are at risk for asymptomatic bacteriuria during pregnancy. However, this illness complicates 1-3% of pregnancies if it is not identified early and treated right away.

Objectives

- To assess the knowledge of antenatal women on prevention of urinary tract infection before the administration of structured teaching programme.
- To administer a structured teaching programme on prevention of urinary tract infection among antenatal women.
- To evaluate the knowledge of antenatal women regarding prevention of urinary tract infection after administration of structured teaching programme.
- To compare the pre-test and post-test knowledge score regarding prevention of urinary tract infection among antenatal women.
- To explore the relationship of pre-test knowledge score with selected demographic variables.

Hypothesis

H_1- There will be a significant difference between mean pretest and posttest knowledge scores of antenatal mothers regarding prevention of urinary tract infection.

H_2- There will be a significant association between posttest knowledge score regarding Urinary tract infection with selected demographical variables.

Assumption

- Structured teaching programs improve knowledge on preventing urinary tract infections.
- Improved knowledge reduces UTI incidence.

Delimitation

- The study focused on pregnant mothers at a specific Primary Health Centre.
- The study focused on prenatal mothers.

Methodology

The study's conceptual framework was derived from the Stuffle Beam Model, which is used to assess teaching and learning practices. A quasi-experimental research design was used for the investigation. To assess the efficacy of a structured teaching program, a single group pre- and post-test research design was chosen for this study. Utilizing accessible sampling approaches, 30 antenatal women who are registered at the Primary Health Center in Namakkal made up the sample size. The knowledge of pregnant women about preventing urinary tract infections was evaluated using a semi-structured interview questionnaire method. The Spearman's Brown reliability formula and the split half approach were used to determine the tool's dependability. Descriptive and inferential statistics, including frequencies, percentages, means, SD, t-tests, and chi-square tests, were used to examine the gathered data. For knowledge level, the knowledge test's coefficient of correlation was r-0.94.

Results

The following is an interpretation of the tabular results and analyses:

Table 1: Sample distribution for the pretest and posttest based on knowledge level

S. No.	Level of knowledge	Pre test		Post test	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	Adequate (>75%)	0	0	16	53.3%
2.	Moderate (50-75%)	12	40%	14	46.6%
3.	Inadequate (<50%)	18	60%	0	0

Table 2: Depicts that the comparison of the values of pre-test and post-test knowledge level. 18 (60%) of the respondents' knowledge was inadequate, and none was in the post-test; 12 (40%) was intermediate, and 14 (46.6%) was post-test; and 16 (53.3%) was adequate, but none of them were in the pre-test.

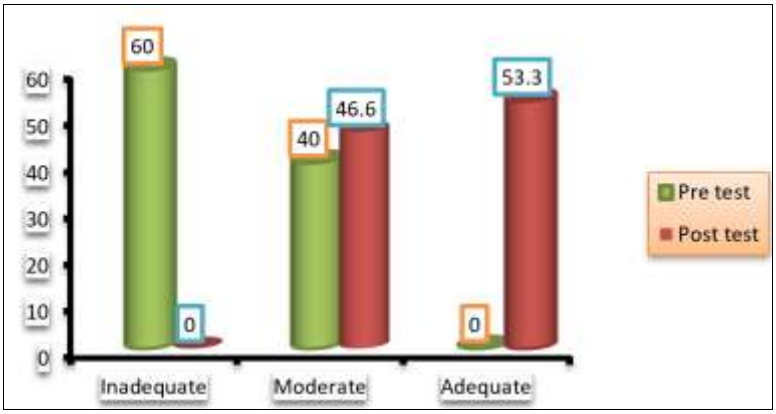

Fig 1: Sample distribution for the pretest and posttest based on knowledge level

Table 2: Mean, Standard deviation and‘t’ value of pretest and posttest

S. No.	Aspects	Max score	Range score	Mean	Standard deviation	“t” value
1.	Pre- test	58	20-36	26.36	4.023	14.77*
2.	Post- test	58	35-52	42.46	4.45	
3.	Difference	-	15-16	16.1	0.427	

p<0.05 level

Table 2: The calculated "t" value of 14.7 was significantly higher than the table value (*p*<0.05). As a result, the stated hypothesis was accepted, and the structured teaching program was found to be beneficial among the responders.

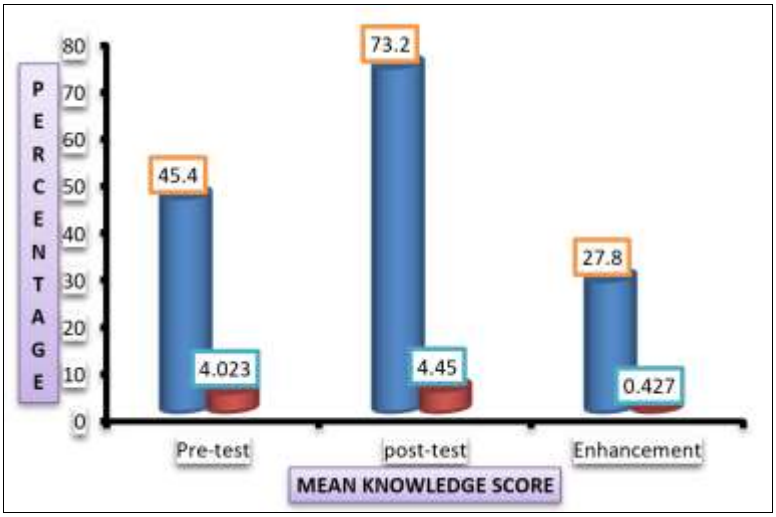

Fig 2: Mean, Standard deviation and ‘t’ value of pretest and posttest

Discussion

The findings support with the study conducted by Patil Pratiksha Kishor *et al*., 2023 [3], which assessed the effectiveness of information booklet regarding urinary tract infection and its prevention among antenatal mothers. Their study showed the information booklet is efficient in boosting awareness of expectant mother regarding urinary tract infection and its prevention. The finding was comparable with results of research by Sheida Moradpour *et al*., 2023 [4], after the educational intervention, the incidence of urinary tract infections was 4.3% in the intervention group and 21.3% in the control group.

Conclusion

According to the study's findings, none of the pregnant women had appropriate information about urinary tract infection prevention prior to a structured teaching program. The knowledge score improved after implementing the structured teaching program. As a consequence, the organized instruction program increased expecting women's understanding of urinary tract infection prevention.

Limitation

- With a sample size of only 30, the results cannot be generalized.
- The study included only antenatal women with no additional infections.
- The study was limited to one primary health centre, Manicampalayam. As a result, the findings are not applicable to other populations.

Implication

The study's findings have implications for various aspects of the nursing profession, including nursing services, nursing education, nursing administration, and nursing research. In nursing practice, nursing personnel should provide individual teaching on urinary tract infections, raise awareness among expectant women, and provide guidance

and instructions on UTI during prenatal care. Nursing education should play an active role in organizing in-service education programs, workshops, and continuing education programs to educate hospital nursing workers about urinary tract infections. Nurses should be up to date on urinary tract infections. Nursing educators should be prepared to take the initiative in teaching expectant antenatal women about urinary tract infections. Nurses can assess antenatal mothers understanding of urinary tract infections and set priorities to achieve a realistic goal in their roles as caretakers, educators, and case managers. A staff development curriculum on urinary tract infections is open to all health care providers.

Recommendation

- The study can be reproduced on large samples to generalize findings to a larger population.
- A descriptive research can evaluate knowledge and practice for different prenatal infections.
- Compare prenatal mothers in rural and urban locations with similar conditions.
- Additional teaching methods and aids, like as video programming, can be used in the study.

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How to Cite This Article
Sabitha S. A study to evaluate the effectiveness of structured teaching programme on prevention of urinary tract infection among antenatal women visit primary health centre, Manicampalayam at Namakkal. International Journal of Midwifery and Nursing Practice. 2024; 7(2): 95-98.