

Effectiveness of Structured Teaching Programme on Knowledge Regarding use Cranberry Juice in Prevention of Urinary Tract Infection among Nursing Students Uttarakhand, India

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Abstract: A quasi experimental study was conducted to evaluate the effectiveness of structured teaching programme on knowledge of use cranberry juice in prevention of urinary tract infection among nursing students **Objectives:** To evaluate the effectiveness of structured teaching programme on the knowledge of students regarding cranberry juice in urinary tract infection. **Methods:** The quasi-experimental study design was selected. The study was conducted in Droan College Of Nursing, Rudrapur, 30 students were selected by simple random sampling (Lottery method). The tool was structured knowledge questionnaire. **Result:** The mean pre test knowledge was 3.5, mode was 3 & 4, and median was 3.5 and SD 1.727. 50% of the respondents having inadequate knowledge and 50% of the participants having adequate knowledge regarding the knowledge of use cranberry juice in prevention of urinary tract infection before STP. However, the knowledge score had improved after teaching post test knowledge mean was 20.7, mode 22, median; 21 & SD was 2.60. 9.40% of the respondents having inadequate knowledge and 60% of the participants having adequate knowledge regarding the knowledge of use cranberry juice in prevention of urinary tract infection after STP. Pretest and post test knowledge score comparison was done with the help of paired T test and calculated T value were 17.80 and P value 0.00001 at 0.05 level of significance respectively. **Conclusion:** The study shows the knowledge regarding cranberry juice is inadequate in half nursing students and average in half nursing students. The study also evidence that, the level of knowledge very low before intervention and knowledge increase after structured teaching programme that cranberry juice is most commonly used for prevention and treatment of urinary tract infection.

Keywords: Urinary tract infection, Nursing students, Cranberry juice, structured teaching programme

1. Introduction

Urinary tract infection is a serious health problem affecting millions of people each year. urinary tract infection are the second most common type of infection in the body.^[1] It is a bacterial infection that affected any part of the urinary tract. 75-90% of acute UTI's in patients with normal anatomic structure and function are caused by uropathogenic strains of *E. coli*. 10 to 20% of acute UTI's are caused by coagulase - negative *Staphylococcus saprophyticus* (young sexually active females) and 5% or less are caused by other gram negative rods (*Klebsiella*, *Proteus*, *Citrobacter*) or *Enterococcus* species.^[2] This infection usually affects the bladder but the urethra, ureter and kidney may also involve. The most common type of urinary tract infection is a bladder infection, which also often called cystitis and another kind of urinary tract infection is a kidney infection known as Pyelonephritis.^[3]

Cranberries are a versatile fruit and their benefit makes them useful in food as well as in medicinal product. Cranberry name is derived from the nick name of the bilberry flowers. Cranberry have a tremendous amount of antioxidant capacity as compared of other fruits and vegetables like broccoli, spinach, and apples. One cup of cranberries offers a total 8983 antioxidant capacity. Cranberry most commonly used for the prevention and treatment of urinary tract infections.^[4] Cranberry juice common preparation with

cranberry include fresh whole berries, gelatinized products, juices and capsule, pure juice is acidic (pH<2.5). Cranberry juice has been the traditional choice of most women seeking to prevent urinary tract infection cranberry juice has been manufactured since at least 1683^[5] Cranberry juice hydrates and washes bacteria from body. Large concentration of cranberries juice might be effective against Urinary tract infection because its made urine more acidic. The active ingredient in cranberries- A type Proanthocyanidin's (PACs) is effective against Urinary Tract Infection. Cranberry contains certain sugar and flavanol compounds that stop bacteria from sticking to cells.^[6]

Incidence of Urinary tract Infection globally include 34% of adult below 20 years and also 794 per 10,000 adult aged below 20 year have at least one occurrence of Urinary Tract Infection. The prevalence of Urinary Tract Infection globally include 1 in 5 women will develop Urinary Tract Infection in their life time. 34% of adult below 20 self reported having at least one occurrence of Urinary Tract Infection. 53.5% of adult aged 13-19 years who self reported having Urinary Tract Infection.^[7]

India is the second peak commonly occurring infection in adolescent girls. The adolescent girls are at high risk of developing Urinary Tract Infection because of the anatomical proximity of urethra to the rectum and short urethral length in females as compared to the males^[8]

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Being the part of health care team nurses has responsibility to educate the nursing student and patient, family members and friends. Therefore the researcher feel that giving them accurate knowledge & allowing the nursing students to talk about use of cranberry juice will helps in prevention of Urinary Tract Infection.

2. Literature Survey

Shin C.N (2015) conducted a study related to effects of cranberries on preventing urinary tract infections. Current evidence suggests that cranberries decrease bacterial adherence to uroepithelial cells and thus decrease the incidence of Urinary tract infections without adverse effects in most individuals. Thus clinicians may safely advise patients that cranberries are helpful in preventing Urinary tract infections. Cranberries may be viable adjunct to antibiotics for patients with repeated Urinary tract infections.^[9]

Indhumol T.D, Sheela Pavithran and Laly K. George (2014) conducted a experimental study related to effectiveness of structured teaching programme on knowledge regarding prevention of Urinary tract infections. The study result showed statistically significant difference in gain in knowledge regarding prevention of Urinary tract infections in the experimental group who had attended the structure teaching programme [t (117)= 4.973, p<0.005]. Amount of water intake per day, voiding habits and hygienic practice during menstruation were the main contributing factors identified in the study population. Knowledge was significantly associated with contributing factors of Urinary tract infections like frequency of voiding during school (x2 = 12.930, p<0.05), voiding in unclear toilet (x2= 12.296, p<0.05), taking bath during menstruation (x2=5.761, p<0.05), and cleaning genitalia during menstruation (x2=4.145, p<0.05).^[10]

Problem Statement

A quasi experimental study to evaluate Effectiveness of structured teaching programme on knowledge of use cranberry juice in prevention of Urinary Tract Infection among students of selected college of nursing , Uttarakhand, India.

3. Methodology

A quasi-experimental design was used in present study in order to assess the knowledge and find out the effectiveness of structured teaching programme on knowledge of use cranberry juice in prevention of urinary tract infection. The study was conducted in Droan College Of Nursing, Rudrapur (Uttarakhand). The sample consisted of 30 B. Sc nursing students of Droan College Of Nursing, Rudrapur (Uttarakhand). Sample was selected by simple random sampling (Lottery Method).Semi structured questionnaire was selected as a Research tool which comprised of two parts; **Part -1: (Socio-Demographic data)** It includes age , gender , religion , source of information and education regarding the urinary tract infection and knowledge of use cranberry juice in prevention of urinary tract infection. **Part-2: (Structured Knowledge questionnaire)** it consisted of 25 multiple choice questions. Each question has

4 responses with 1 correct answer. Score 1 was given for each correct response in a single question and score 0 was given for wrong responses. Formal administrative permission obtained from principal of Droan College of Nursing, Rudrapur (Uttarakhand). Written consent was taken from the students for the Willingness to participate in the study. Pretest was conducted on scheduled time after that structured teaching programme was given on same day. Post test was conducted after 6 days of pretest. Data was analyzed with descriptive and inferential statistics.

4. Result

4.1 Description of demographic variables of the study subjects

Table 1: Frequency and percentage distribution of the participants according to personal characteristics

S. No.	Characteristics	Category	N=30 Respondents	
			F	%
1.	Age group (year)	a. <18	0	0
		b. 18-20	21	70
		c. >20	9	30
2.	Gender	a. Male	6	20
		b. Female	24	80
3.	Religion	a. Hindu	28	93.33
		b. Christian	1	3.33
		c. Muslim	1	3.34
4.	Source of information about cranberry juice	a. Friends	7	23.34
		b. Media	18	60
		c. Health personnel	5	16.66
5.	Educational Status	a. Senior secondary education	25	83.4
		b. Graduation	5	16.6

4.2 Description of pretest and post test knowledge score

Table 2: Finding related to mean, mode and median, standard deviation pre-test knowledge of subjects.

N=30	mean	median	mode	SD
Pre test	3.5	3.5	3 & 4	1.72

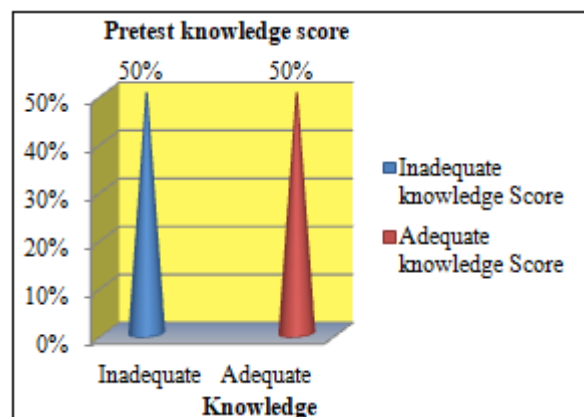


Figure 1: Depicted the percentage distribution of pretest knowledge score of subjects

Above figure revealed that in pre-test the 50% participants had inadequate knowledge & 50% respondents were having adequate knowledge of use cranberry juice in prevention of urinary tract infection.

Table 3: Finding related to post test knowledge mean, mode, median and standard deviation of the respondents

N=30	Mean	Mode	Median	SD
Knowledge				
Post-test	20.7	22	21	2.609

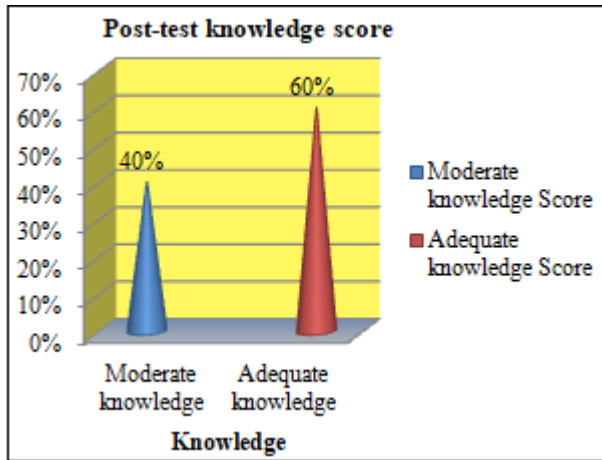


Figure 2: Depicted the percentage distribution of post test knowledge score of subjects

Fig no.2 Depicted that in post test the majority of 60% respondents had adequate knowledge, 40% respondents were found with moderate knowledge regarding use cranberry juice in prevention of urinary tract infection.

4.3 Comparison of pretest and posttest knowledge score

Table 4: Comparison of the pre-test knowledge score with post-test knowledge score by using T test

Knowledge	N	T value	Df	P value	Remarks
Pre-test and Post-test	30	17.80	29	0.00001	HS

HS =highly significant at 0.05 level of significance

Pretest and post test knowledge score comparison was done with the help of paired T test and calculated T value were 17.80 and P value 0.00001 at 0.05 level of significance respectively. On the basis of result we can conclude that structured teaching programme enhanced the knowledge of nursing students significantly.



Figure 3: Comparison of pre-test and post-test knowledge score

5. Discussion

In the present study the Maximum Pretest knowledge score was 7 and minimum score was 0. The mean value was 3.5, median was 3.5, mode was 3 & 4 and the standard deviation

was 1.727. After administration of structured teaching programme the maximum post test knowledge score of respondents was 24 and minimum score was 17. The mean value was 20.7; mode 22, median was 21 with standard of deviation 2.609. Comparison of pretest and post test knowledge score was done with the help of paired T test and calculated T value and P value were 17.80 0.00001 at 0.05 level of significance respectively.

A similar study was done by Lisa Louis Philip in (College of nursing Apollo hospital , Bilaspur Chhattisgarh , India , 2013) with the objective to assess the effectiveness of STP on knowledge regarding prevention of UTI among staff nurse . The pretest knowledge mean score was 11.47, and SD was 3.55 . The 20% respondents were having poor knowledge 66.7% having average and only 13.3% having good knowledge. The total post test mean knowledge score was 20.02 and SD was 5.83. 0.0 % was having poor or 23.3% were average and 77.7% were having good knowledge. The paired t test computed to test the effectiveness of STP in prevention of UTI. $t=19.69$, $P=0.01$ and $df=29$. The respondent's knowledge was increased after administering STP. ^[11]

6. Conclusion

The present study supported earlier studies that knowledge regarding cranberry juice in prevention of UTI among girls was inadequate. After administration of structured teaching programme knowledge has been increased significantly. As we all know this UTI is very common in community and most of the people don't know the clinical manifestation and home remedies or preventive measures of UTI. Delay treatment of UTI may also leads to various complication of urinary system. Present study finding suggestive that more studies can be done for creating awareness regarding UTI in community.

7. Future Scope

The followings recommendations are made on the basis of the finding of the present study.

- A study may be replicated on a large sample to validate and generalize the findings.
- A comparative study may be carried out among medical and non medical students to assess knowledge regarding use of cranberry juice in prevention of urinary tract infection.
- More studies can be done to evaluate the use of cranberry juice in prevention of urinary tract infection among community people.
- Education session and awareness programme must be arranged regarding use of cranberry in prevention of urinary tract infection.

References

- [1] Dr. Nina Byrnes (July 1,2014) www.independent.ie/.../utis-are-the-second-most-common-type-of-infection
- [2] <https://www.atsu.edu/faculty/chamberlain/Website/lectures/lecture/uti.htm>

- [3] Talha h., Imam, MD. Bacterial urinary tract infection . USA: Merck Manual. (May, 2016). Available from: [www.merckmanual.com>professional](http://www.merckmanual.com/professional)
- [4] Sánchez-Patán et.al (2012). "Comprehensive Assessment of the Quality of Cranberry Products. Phenolic Characterization and in Vitro Bioactivity". *Journal of Agricultural and Food Chemistry*. **60** (13): 336–408. Available From-<https://www.pinterest.com/pin/392024342536140318/>
- [5] Sun J, Chu YF, Wu X, Liu RH (December 2002). "Antioxidant and antiproliferative activities of cranberry fruits". *J Agric Food Chem*. **50** (25): 7449–54. Available From-[http://en.m.wikipedia.org>wiki>cranberry](http://en.m.wikipedia.org/wiki/cranberry)
- [6] Ahmet I, Spangler E, Shukitt-Hale B et al. Blueberry-Enriched Diet Protects Rat Heart from Ischemic Damage. Published online 2009 June 18. doi: 10.1371/journal.pone.0005954. 2009.Available From-www.whfoods.com/genpage.php?tname=foodspice&dbid
- [7] <http://www.wrongdiagnosis.com/u/UTIsprevalence-types.htm>.
- [8] Kristen PS. Incidence of Urinary tract infection, India: Common infection during the adolescent G-Journal of Youth and Adolescent; (Feb,2000). AvailableFrom:<http://www.wrongdiagnosis.com/u/UTIs/book-diseases.htm>.
- [9] Shin CN.Cranberries on preventing UTI infection.USA: ClinNurs Res 23 (1),54-79;(April 1, 2015). Available from: [www.ncbi.nlm.nih.gov>PubMed](http://www.ncbi.nlm.nih.gov/PubMed).
- [10] Indhumol TD, Sheela Pavithran and Laly K. George Effectiveness of Structured Teaching Programme on knowledge regarding prevention of UTI. *Pharma medicine and biological science* Volume 3, Page No.-121-126; (July 3,2014).Available ; www.ijpmbs.com/index.php%3Fm%3Dcont.
- [11] Lisa Louis Philip. The effectiveness of STP on knowledge regarding prevention of urinary tract infection among staff nurse. College of Nursing, Apollo Hospital , Bilaspur Chhattisgarh , India (2013): Available form-<http://www.gfmer.ch/endo/fellows10/pdf/Infectioncontrolstrategies>.

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