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A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF ALALEKAAYI WATER WASH AND LUKEWARM WATER WASH ON LEUCORRHOEA AMONG REPRODUCTIVE WOMEN WORKING IN A SELECTED INSTITUTION OF BANGALORE.

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Abstract : Reproductive health problems constitute the leading cause of ill health in women of reproductive age group worldwide especially in developing countries. Reproductive tract infections are one among the major causes of morbidity in women. Reproductive age group women are most likely to get these infections. Hence there was a growing recognition that morbidity related to reproductive tract was the important health issue among women in India. The present study was indented to assess the symptoms of leucorrhoea and to compare the effectiveness of Alalekaayi water wash and Lukewarm water wash on leucorrhoea among reproductive women working in a selected institution of Bangalore. A quasi experimental comparative design was adopted for the present study. The samples were 40 women and used nonprobability purposive sampling technique in which 20 were selected for Experimental group I and 20 for Experimental group II. Data was collected by using structured interview questionnaire to assess the symptoms of leucorrhoea. The experimental group I received Alalekaayi water wash and experimental group II received Lukewarm water wash twice daily for 5 days. The post-test assessment of leucorrhoea was carried out after 5 days of intervention for both the groups with the help of same tool. It was done during the time between 05th April 2021 and 03rd May 2021.Data was analyzed by using frequency, percentage, mean, standard deviation, paired and unpaired t test. The significant finding was assessed by using test-retest method. Correlation coefficient value of reliability was 0.98. The study results shown that there was more effectiveness in Color of vaginal discharge, Consistency of Vaginal discharge, Odour, Vaginal itching, Vaginal Burning Sensation, Quantity and Lower back pain by using Alalekaayi water wash. Alalekaayi water wash t=25.43 p<0.00001***DF=19 which was significant, Lukewarm water wash t=11.06 p<0.00001***DF=19 which was Significant. The effectiveness of Alalekaayi water wash was better than the Lukewarm water wash t=12.17 p<0.00001***DF=38 which was Significant. The study findings provided the relevant information to the subjects and clearing up the misconceptions and they could able to understand locally available Alalekaayi water wash on leucorrhoea was the best possible treatment option among reproductive age women.

IndexTerms **- Effectiveness; Alalekaayi water wash; Lukewarm water wash; Reproductive age women; Leucorrhoea; Genital infection.**

I. INTRODUCTION

Women are the real architects of the society. 19% of women among total population are in 15-45 year's child bearing age group. The focus now is to provide holistic health care to women's health. Women are probably dying because she has been denied access to medical treatment in time. Reproductive tract infections are one among the major causes of morbidity in women. An initial symptom of most reproductive tract diseases is leucorrhoea. Abnormal vaginal discharge or Leucorrhea is an increase in the amount of vaginal discharge, an abnormal odor or consistency of the fluid, burning sensation, vaginal itching or pain accompanies with it. Therapeutic vaginal wash can reduce unpleasant, abnormal odour, and excessive discharge. Women living in remote places with inadequate transport facilities and lack of health services, will be able to manage at home with locally available resources like, Basil, Neem, and

Myrobalan (Alalekaayi). The Anti-bacterial activity of Mylobalan (Alalekaayi) acts against harmful Pathogens. Changes in life style practices along with Alalekaayi water wash such as routine exercises; healthy diet and getting enough sleep help to minimize the symptoms of leucorrhoea. Keeping the genitalia clean is the correct way which can make huge differences when it comes to vaginal hygiene. Warm water is the best cleanser which can affect the healthy balance of pH level in the vagina. Counseling and education should be given on healthy behavior such as, Personal hygiene, menstrual hygiene and safe sex practice is essential.

NEED OF THE STUDY

WHO reported that nearly 1/3rd of adult women are having reproductive health problems. Each year 340 million new cases of curable STI occur globally. Out of these 151 million are in South and Southeast Asia. In India alone, 40 million new cases emerge each year. About 5, 29,828 women are diagnosed with cervical cancer every year and 2, 60,000 deaths occurring every year globally. Annual incidence of pelvic inflammatory diseases is 10-13 per 1000 women of reproductive age group (Global Prevalence of Cervical Cancer). Hence awareness regarding leucorrhoea is needed to reveal the problem and which will be helpful in early detection and treatment of this diseases. Globally, Leucorrhoea occurs in 1-14% of all the women in the reproductive age group and is responsible for 5-10 million OPD visits per year. The prevalence of excessive vaginal discharge in India is estimated to be 30%. As prevention is better than cure, Alalekaayi water wash and Lukewarm water wash are easily available and cost effective home remedies which women can perform at home itself and minimize the debilitating symptoms of leucorrhea.

3.1Population and Sample

The accessible population in this study included reproductive age women of age group 15-45 years with symptoms of leucorrhoea.

The sample size will be 40 reproductive age women (20 in each group)

Non-probability purposive sampling technique was used to select the samples for the present study.

3.2 Data and Sources of Data

An evaluative approach was adopted for the present study. For conducting main study administrative permission was obtained from the Administrative Officer, Vydehi Institute of Medical Science and Research Centre, Bangalore. The study was conducted from 05.04.2021 to 03.05.2021. Self-introduction was given, and the purpose of the study was explained to the women. Researcher used a brief questionnaire to screen out reproductive age women with leucorrhoea. With the data collected, samples were selected by purposive sampling technique and divided them into 20 samples in experimental group I and 20 samples in experimental group II. The written informed consent was obtained from participants before collecting the data. After selection of participants the assessment of leucorrhoea was done by using structured interview questionnaire. The experimental group I received Alalekaayi water wash which was prepared by 10g of Alalekaayi powder added in 60 ml boiled water and it was mixed with 1000 ml of warm water and experimental group II was received Lukewarm water wash which was prepared by 1 liter of water and boiled up to 45^0-50^0 Celsius then made warm up to 38^0 Celsius as measured by lotion thermometer. This solution was used for perineal wash by experimental group I and experimental group II twice daily for 5 days. The post-test assessment of leucorrhoea was carried out after 5 days of intervention for both the groups with the help of same tool. After which data was analyzed by using descriptive and inferential statistics.

3.3 Theoretical framework

In this study three variables have been used. Independent variable consist of Alalekaayi water wash, Lukewarm water wash. Dependent variables consist of Symptoms of Leucorrhoea among reproductive age women. The Demographic variables include Age, Religion, Educational status, Occupational Status, Marital Status, family monthly Income, practice of perineal hygiene, Frequency of Menstrual Cycle, Last menstrual period, Type of menstrual hygiene devices, History of leucorrhoea & duration of leucorrhoea, History of consultation with gynaecologist, Line of treatment and the Obstetrical variables compose of Number of Children, Knowledge of Relationship between Coitus and Leucorrhoea, Type of Contraception, History of Genital Infection of Partner, Type of Infection.

The clinical profiles were calculated to measure the symptoms of leucorrhoea. The Clinical profile include, Color, Consistency of Vaginal discharge, Odour, Vaginal itching, Vaginal Burning Sensation, Quantity, Lower back pain.

RESEARCH METHODOLOGY

The methodology section outline the plan and method that how the study is conducted. This includes Universe of the study, sample of the study,Data and Sources of Data, study's variables and analytical framework. The details are as follows;

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3.4Statistical tools

This section elaborates the proper statistical values which are being used to forward the study from data towards inferences. The detail of methodology is given as follows.

Descriptive statistics used were frequency, percentage, mean, standard deviation, and presented graphically. Effectiveness of Alalekaayi water wash and Lukewarm water wash on leucorrhoea was assessed by using paired t test and comparison of the effectiveness of Alalekaayi water wash and Lukewarm water wash was assessed by using unpaired t test.

IV. RESULTS AND DISCUSSION

Table 1: Frequency and percentage distribution of reproductive women with leucorrhoea according to demographic variables. (n= 40)

S. no	Demographic variables	Exp. group I (n= 20)		Exp. group II (n= 20)	
		f	%	f	%
1.	**Age in years**				
	15-25	8	40	7	35
	26-35	7	35	9	45
	36-45	5	25	4	20
2.	**Religion**				
	Hindu	13	65	14	70
	Muslim	5	25	3	15
	Christian	2	10	3	15
3	**Education**				
	No formal education	10	50	9	45
	Primary education	7	35	9	45
	Secondary education	3	15	2	10
4.	**Occupational status**				
	Private sector employee	20	100	20	100
5.	**Marital status**				
	Married	12	60	10	50
	unmarried	5	25	6	30
	Widow	3	15	2	10
	Separated/divorced	0	00	2	10
6.	**Family income**				
	5000-7000	7	35	9	45
	7001- 10000	13	65	11	55
7.	**Do you clean your perineal area routinely after going to toilet?**				
	Always	16	80	18	90

	Occasionally	4	20	2	10
8.	**Frequency of menstrual cycle**				
	Once in 25-30 days	18	90	20	100
	Once in 30-35 days	2	10	0	00
9.	**Which among the following do you use during menstruation?**				
	Commercial pads	20	100	20	100

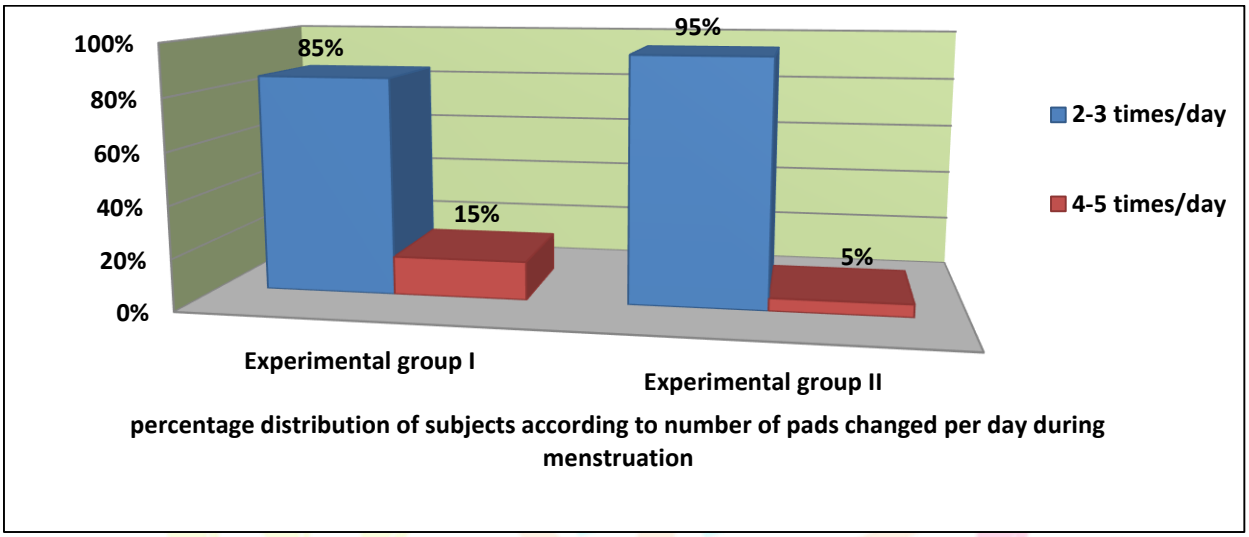

Figure 5.1: Percentage distribution of reproductive women according to Number of pads changed per day during menstruation among experimental group I and experimental group II. (n = 40)

The above shows that 17(85%) in experimental group I and 19(95%) in experimental group II changed pads 2-3 times/day during menstruation whereas 3(15%) in experimental group I and 1(5%) in experimental group II changed pads 4-5 times/day during menstruation.

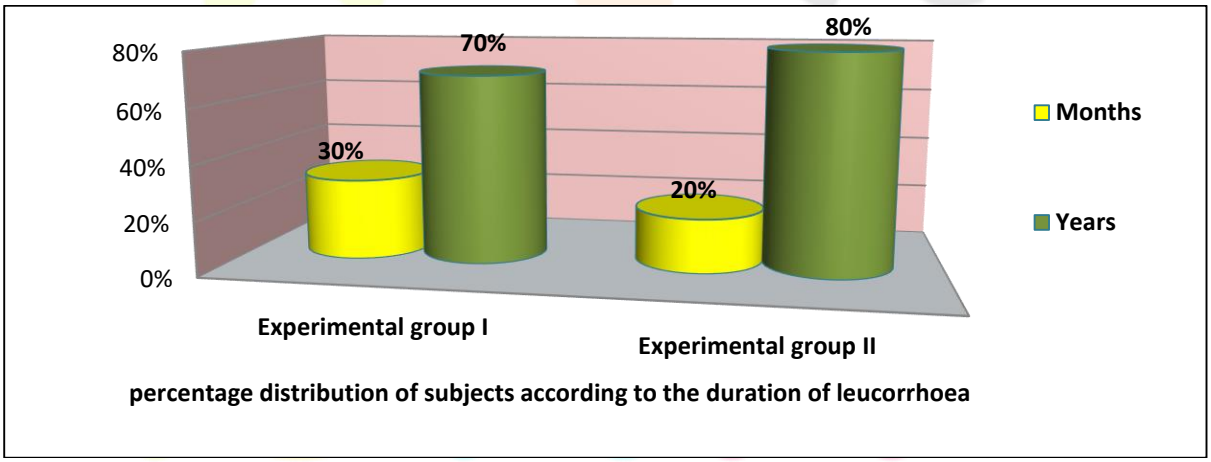

Figure 5.2: Percentage distribution of reproductive women according to the duration of leucorrhoea among experimental group I and experimental group II. (n = 40)

The above figure shows that 6(30%) in experimental group I and 4(20%) in experimental group II had leucorrhoea for months. And 14(70%) in experimental group I and 16(80%) in experimental group II had leucorrhoea for years.

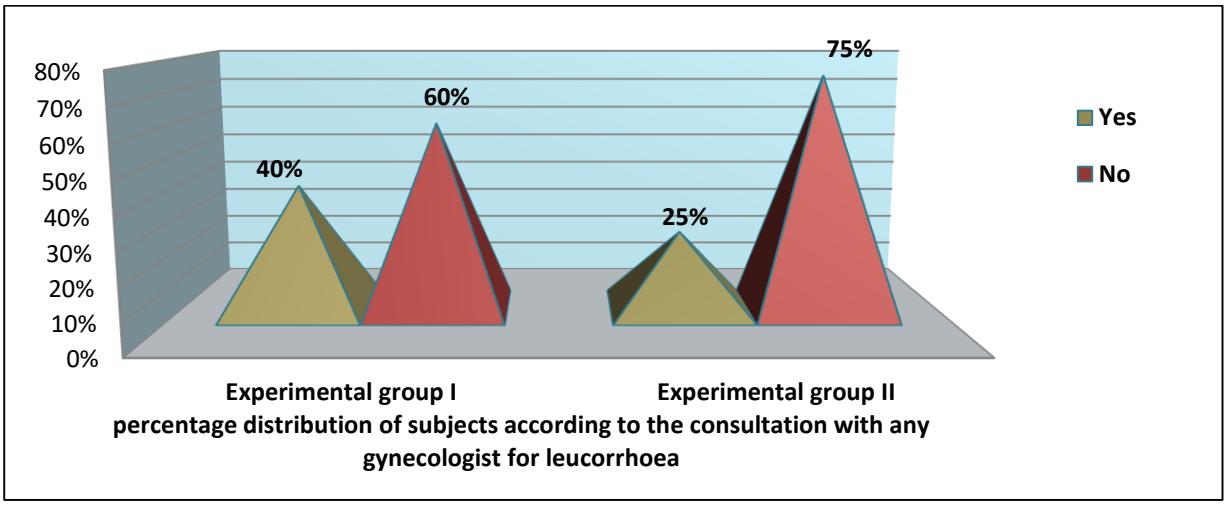

Figure 5.3: Percentage distribution of reproductive women according to the consultation with any gynaecologist for leucorrhoea among experimental group I and experimental group II. (n = 40)

The above figure shows that 8(40%) in experimental group I and 5(25%) in experimental group II had consulted with gynaecologist before for leucorrhoea. And 12(60%) in experimental group I and 15(75%) in experimental group II did not consulted with gynaecologist for leucorrhoea.

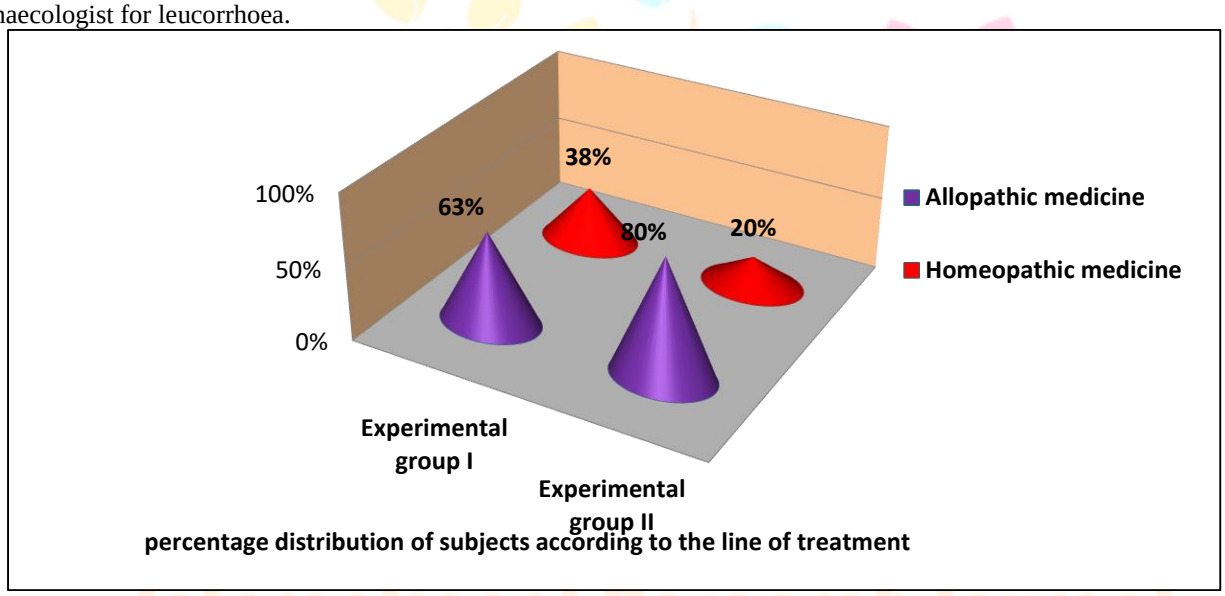

Figure 5.4: Percentage distribution of reproductive women according to the line of treatment for leucorrhoea among experimental group I and experimental group II. (n = 40)

The above figure shows that among those who had consulted with gynecologist for leucorrhoea 5(62.5%) in experimental group I and 4(80%) in experimental group II had taken allopathic medicine. And 3(37.5%) in experimental group I and 1(20%) in experimental group II had taken homeopathic medicine.

Table 2. Frequency and percentage distribution of reproductive women with leucorrhoea according to obstetrical variables.

	Obstetrical variables	Experimental group I (n=12)		Experimental group II (n=10)	
		f	%	f	%
10.	**Number of children**				
	0	2	16.66	2	20
	2	7	58.33	5	50
	More than 2	3	25	2	20
11.	**Are you aware that coitus may cause leucorrhoea?**				
	Yes	0	00	0	00
	no	12	100	10	100
12.	**Type of contraception**				
	Nothing	5	41.66	6	60
	Condom	7	58.33	4	40
13.	**Any history of genital infection of partner**				
	Yes	1	8.33	0	00
	No	5	41.66	4	40
	Don't know	6	50	6	60

Table 5.4: The effectiveness of Alalekaayi water wash by comparing pre-test and post-test score on leucorrhoea among women in experimental group I. (n = 20)

Group	NO OF SUBJECTS	PRE-TEST		POST-TEST		ENHANCEMENT		PAIRED t-TEST
		MEAN	SD	MEAN	SD	MEAN	SD	25.43
Experimental group I	20	16.65	2.82	10.8	2.34	5.85	0.48	

df = 19 and level of significance is 0.05. The table reveals the comparison of overall post-test score of symptoms of leucorrhoea. Calculated t value is 25.43. The table value is 2.09. The calculated value is more than the table value, which indicates that there is a difference between the pre-test and post-test score. So, it is significant.

Table 5.5: The effectiveness of Lukewarm water wash by comparing pre-test and post-test score on leucorrhoea among women in experimental group II. (n = 20)

Group	NO OF SUBJECTS	PRE-TEST		POST-TEST		ENHANCEMENT		PAIRED t-TEST
		MEAN	SD	MEAN	SD	MEAN	SD	11.06
Experimental group II	20	17.75	3.35	15.5	3.49	2.25	0.14	

df = 19 and level of significance is 0.05. The table reveals the comparison of overall post-test score of symptoms of leucorrhoea. The calculated t value is 11.06. The table value is 2.09. The calculated value is more than the table value, which indicates that there is a difference between the pre-test and post-test score. So, it is significant.

Table 3. Comparison of the effectiveness of Alalekaayi water wash and Lukewarm water wash on leucorrhoea among women in experimental group I and experimental group II. (n=40)

Effectiveness	Experimental group I		Experimental group II		Unpaired t-test
	Mean	SD	Mean	SD	
Pre-test	16.65	2.82	17.75	3.35	t= 12.17 P value <0.0001 DF= 38 Significant
Post-test	10.8	2.34	15.5	3.49	
Paired t- test	t= 25.43 P value <0.0001 DF= 19 Significant		t= 11.06 P value <0.0001 DF= 19 Significant		Both groups significant.

This table reveals the comparison of overall effectiveness of Alalekaayi water wash and Lukewarm water wash on leucorrhoea among reproductive women in experimental group I & experimental group II by comparing post-test score. Calculated t-value for experimental group I was 25.43. Calculated t-value for experimental group IIwas11.06. Table value was 2.09 at 0.05 level of significance where df = 19. In unpaired t-test Calculated Value was 12.17. Table value was 2.02 where df= 38.

The calculated value was more than the table value, which indicates that there was a difference between the pre-test and post-test score. Which indicates that Alalekaayi water wash was more effective than Lukewarm water wash. It is significant.

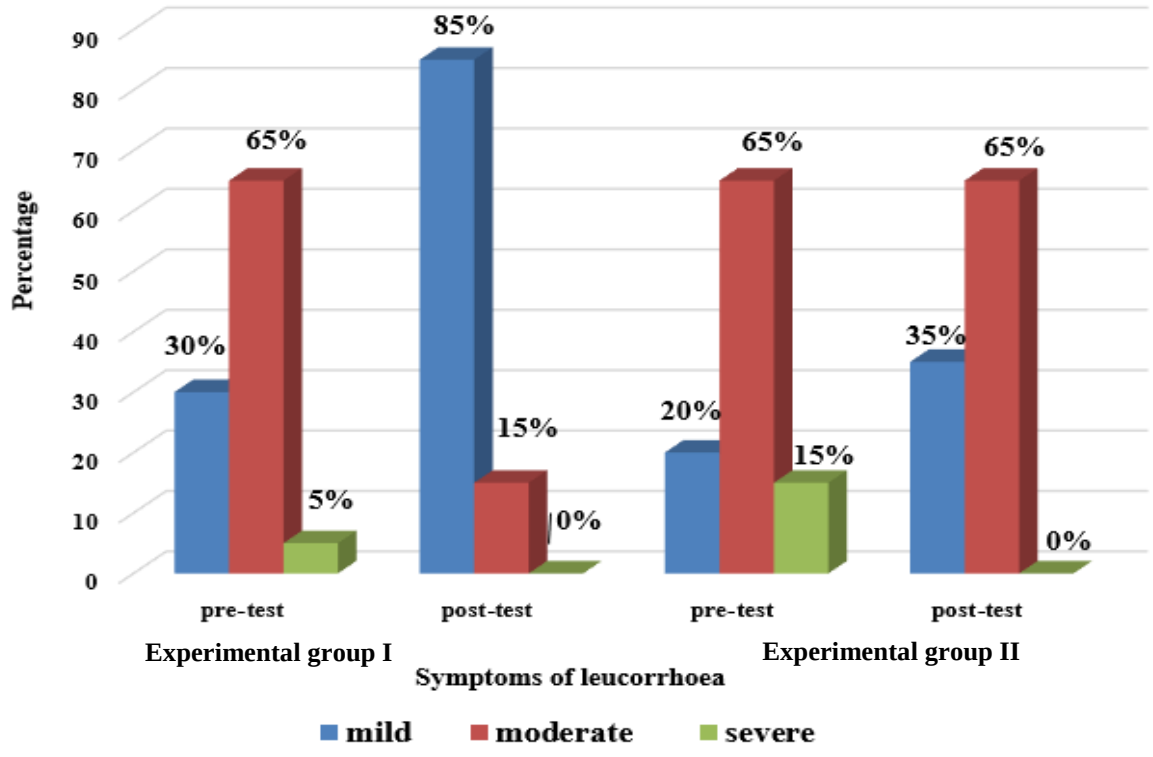

Figure 1. Fig 1. Frequency and percentage distribution of subject according to assessment of pre-test and post-test level of selected symptoms of leucorrhoea in experimental group I and experimental group II.

The distribution of subjects according to pre-test and post-test level of leucorrhoea shown in Figure 1. In experimental group I, 6(30%) were in mild, 13(65%) were in moderate and 1(5%) was in severe level of leucorrhoea in the pre-test; whereas 17(85%) were in mild, 3(15%) were in moderate and none of them were in severe level of leucorrhoea in the post test. In experimental group II 4(20%) were in mild, 13(65%) were in moderate and 3(15%) were in severe level of leucorrhoea in the pre-test; whereas 7(35%) were in mild, 13(65%) were in moderate and none of them was in severe level of leucorrhoea in the post test.

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REFERENCES

1. Gomathi Priya V. The effectiveness of kadukkai and lukewarm water wash on abnormal vaginal discharge among reproductive age women. Master's thesis. Madurai medical college: tamilnadu DrMGR medical university, 2012. Available on: http://repository-tnmgrmu.ac.in/4343/
2. Prof.Dr. Arash Khaki. Womens' knowledge and experience of abnormal vaginal discharge living in estates in Colombo district, Srilanka. International Journal of Women's Health and Reproduction Sciences. 2018: vol6: p.1. Available on: http://www.ijwhr.net
3. Dutta D.C. Textbook of gynaecology. 6th edition. London: hiralal konar publication, 2013. p. 527, 528, 529, 7
4. Park K. Textbook of preventive and social medicine. 18th edition. India: M/s banarsidas bhanot publishers, 2005. p.349, 265.
5. Dr Anthony CIwu. Prevalence, Pattern and Predictors of Abnormal Vaginal Discharge among Women attending Health Care Institutions in Imo State. Nigeria.Journal of community medicine and primary health care. 2018: vol 30: no 2: p 1, 2.
6. Jaspreet Kaur, AK Kapoor. Perceptions and Knowledge about Leukorrhea in a Slum Dwelling South Asian Community. Journal of family and reproductive health. 2014: vol 8(1): p.1. Available on: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4064755/
7. Dr.Sheena A.Mammen, Shavinder Singh, Isaac Rajesh, Sunita Goyal. Perception and correlates of excessive vaginal discharge in rural women. International journal of reproduction, contraception, obstetrics and gynaecology. 2017: vol 6: p.3, 4. Available on: http://dx.doi.org/10.18203/2320-1770.ijrcog20173472.
8. Ms.shirley angel.j. Effectiveness of salt solution wash versus warm water wash on selected symptom of leucorrhea among post-menopausal women. St Xavier's Catholic College of Nursing: Tamil Nadu DrMGR Medical University, 2014. Available on: www.ncbi.nlm.nih.gov.
9. Mrs. Manjot Kaur, Mrs. Gursangeet Kaur Sidhu. A Pre-experimental Study to Assess the Effectiveness of Coriander Seeds Water on Leucorrhoea among Women (15-45 years) residing in selected Rural Areas of District Ludhiana (Punjab). International Journal of Nursing Education and Research 5(3): July- September 2017. P.263-268. Available on: www.anvpublication.org.
10. Rosamund.M. Bryar. (2004). Theory for midwifery practice (10th edition). malaysiaMac Millan Press.
11. KalaBarati S, Jayabharati K. Assess the prevalence of leucorrhoea among women in reproductive age group. Tamil Nadu, India. Published by JK Welfare & Pharmascope Foundation. International Journal of research in pharmaceutical science. Oct16, 2019; 10(4): P. 2742-2744. Available on: https://doi.org/10.26452/ijrps.v10i4.1540.
12. De Seta F, Restaino S, De Santo D, Stabile G, Banco R, Busetti M, et al. Effects of hormonal contraception on vaginal flora. Contraception. Elsevier publication. 2012; 86(5): p.526-529. Available on: https://doi.org/10.1016/j.contraception.2012.02.012.
13. Lazenby GB, Soper DE, Nolte FS. Correlation of leukorrhea and Trichomonas vaginalis infection. Journal of Clinical Microbiology. July 2013; Vol. 51(7): p.2323–7. Available on: https://pubmed.ncbi.nlm.nih.gov/23678058/.
14. K.K. Trollope. The Prevalence of Leucorrhoea among reproductive age group women in selected rural area in Sarjapur. Indian Journal of Community Medicine. 2009; Vol. 34: p.62-64.
15. Ob/Gyn B. Vaginal hygiene - do's and don'ts - bloom OBGYN [Internet]. Bloom-obgyn.com. 2018 [cited 2021 Jul 20]. Available on: https://bloom-obgyn.com/vaginal-hygiene-dos-and-donts/
16. Keeping your vagina clean and healthy. NHS website.UK. [Cited 2021 Jul 20]. Available on: https://www.nhs.uk/line-well/sexual-health/keeping-your-vagina-clean-and-healthy/