

**ASSESSING THE EFFECTIVENESS OF ALALEKAAYI WATER
RINSE VERSUS LUKEWARM WATER RINSE IN ADDRESSING
LEUCORRHOEA AMONG EMPLOYED WOMEN OF
CHILDBEARING AGE IN A DESIGNATED FACILITY IN
BANGALORE**

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ABSTRACT:The study aimed to assess the symptoms of leucorrhoea and compare the effectiveness of Alalekaayi water wash and lukewarm water wash among reproductive women in Bangalore. A quasi-experimental design was used with 40 women divided into two groups: Experimental group I received Alalekaayi water wash, and Experimental group II received lukewarm water wash twice daily for 5 days. Data was collected using a structured interview questionnaire before and after the intervention. The post-test assessment showed that Alalekaayi water wash was more effective in improving the color, consistency, odor, vaginal itching, burning sensation, quantity, and lower back pain associated with leucorrhoea compared to lukewarm water wash. Statistical analysis using t-tests indicated significant improvements in both groups, with Alalekaayi water wash demonstrating superior effectiveness. The study's findings suggest that locally available Alalekaayi water wash could be an effective treatment option for leucorrhoea in reproductive-age women. This information can help clear misconceptions and provide relevant guidance to women in managing reproductive tract infections in India.

Index Terms - Effectiveness; Alalekaayi water wash; Lukewarm water wash; Reproductive age women; Leucorrhoea; Genitalinfection.

INTRODUCTION

The statement "Women are the real architects of society" emphasizes the significant role that women play in shaping and sustaining communities, families, and societies as a whole. This recognition underscores the importance of addressing women's health issues comprehensively to ensure the well-being and prosperity of society as a whole. Focusing on providing holistic healthcare to women, especially during their reproductive years (15-45 years), is crucial for promoting overall well-being. It's imperative to address the barriers that prevent women from accessing timely medical treatment, as denial of such access can lead to avoidable health complications and even mortality. Reproductive tract infections, including leucorrhoea, are significant concerns for women's health. Recognizing the symptoms of these infections early on

can facilitate prompt intervention and treatment. Utilizing therapeutic vaginal washes can help alleviate symptoms such as abnormal discharge, odor, and discomfort. In regions with limited access to healthcare facilities, empowering women to manage their health using locally available resources like basil, neem, and Myrobalan (Alalekaayi) can be invaluable. These natural remedies, particularly Myrobalan with its antibacterial properties, can offer effective solutions for combating harmful pathogens. In addition to treatment, adopting healthy lifestyle practices such as regular exercise, balanced diet, and adequate sleep can contribute to minimizing symptoms of leucorrhoea and promoting overall reproductive health. Maintaining proper genital hygiene, including gentle cleansing with warm water, is essential for preserving the natural pH balance of the vagina and preventing infections. Education and counseling on personal hygiene, menstrual hygiene, and safe sex practices are essential components of comprehensive women's healthcare. By prioritizing women's health and addressing the factors that impact their well-being, societies can promote equality, prosperity, and overall societal development. Recognizing women as architects of society entails ensuring their health and empowerment are central to societal advancement.

NEED OF THE STUDY

According to the World Health Organization (WHO), approximately one-third of adult women worldwide experience reproductive health issues. Every year, there are 340 million new cases of curable sexually transmitted infections (STIs) globally, with 151 million occurring in South and Southeast Asia. In India alone, there are 40 million new cases annually. Cervical cancer is a significant concern, with 529,828 new cases diagnosed annually and 260,000 resulting deaths worldwide. The annual incidence of pelvic inflammatory diseases is 10-13 per 1000 women of reproductive age. Given these statistics, raising awareness about leucorrhoea is crucial for early detection and treatment. Globally, leucorrhoea affects 1-14% of women in the reproductive age group and leads to 5-10 million outpatient department (OPD) visits annually. In India, the prevalence of excessive vaginal discharge is estimated to be 30%. As the saying goes, prevention is better than cure. Home remedies such as Alalekaayi water wash and lukewarm water wash are easily accessible and cost-effective solutions that women can perform at home to alleviate the debilitating symptoms of leucorrhoea. By promoting awareness and providing access to simple yet effective interventions, we can empower women to take control of their reproductive health and improve their overall well-being.

POPULATION AND SAMPLE

The accessible population for this study comprised women of reproductive age, specifically between 15 and 45 years old, who exhibited symptoms of leucorrhoea. A total sample size of 40 reproductive-age women was determined, with 20 participants allocated to each group (Alalekaayi water wash and lukewarm water wash). The sampling technique employed was non-probability purposive sampling, allowing researchers to select participants based on specific criteria relevant to the study's objectives. This method ensured that individuals with symptoms of leucorrhoea were

included in the study, thus facilitating a focused investigation into the effectiveness of the interventions under consideration.

DATA AND SOURCES OF DATA

The present study, an evaluative approach was adopted. Administrative permission was obtained from the Administrative Officer at Vydehi Institute of Medical Science and Research Centre, Bangalore, to conduct the main study. The study took place from January 5, 2024, to March 20, 2024. During the study period, the researcher introduced themselves and explained the purpose of the study to the women participants. A brief questionnaire was utilized to screen reproductive-age women exhibiting symptoms of leucorrhoea. Samples were selected using purposive sampling, resulting in 20 participants allocated to each of the two experimental groups. Written informed consent was obtained from all participants before data collection. Subsequently, leucorrhoea assessment was conducted using a structured interview questionnaire. Experimental group I received Alalekaayi water wash, prepared by adding 10g of Alalekaayi powder to 60ml boiled water, mixed with 1000ml of warm water. Experimental group II received lukewarm water wash, prepared by boiling 1 liter of water until reaching 450-500 degrees Celsius, then warmed to 380 degrees Celsius as measured by a lotion thermometer. Both solutions were used for perineal wash by experimental groups I and II twice daily for 5 days. Post-test assessment of leucorrhoea was conducted after the intervention period for both groups using the same tool. Data analysis was performed using descriptive and inferential statistics to evaluate the effectiveness of the interventions.

THEORETICAL FRAMEWORK

In this study, three main categories of variables were utilized: independent, dependent, and demographic/obstetrical variables.

1. Independent Variables:

- Alalekaayi water wash
- Lukewarm water wash

2. Dependent Variables:

- Symptoms of Leucorrhoea among reproductive-age women

3. Demographic Variables:

- 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 and duration
 - History of consultation with gynaecologist
 - Line of treatment
4. **Obstetrical Variables:**
- Number of children
 - Knowledge of the relationship between coitus and leucorrhoea
 - Type of contraception
 - History of genital infection of partner
 - Type of infection
5. **Clinical Profiles** (to measure symptoms of leucorrhoea):
- Color of vaginal discharge
 - Consistency of vaginal discharge
 - Odour of vaginal discharge
 - Vaginal itching
 - Vaginal burning sensation
 - Quantity of discharge
 - Lower back pain

These variables were used to assess the effectiveness of Alalekaayi water wash and lukewarm water wash on symptoms of leucorrhoea among reproductive-age women, while also considering demographic and obstetrical factors that may influence the outcomes of the study.

RESEARCH METHODOLOGY

The methodology section delineates the strategy and procedures employed in conducting the study. It encompasses the scope of the study, sample selection, data collection methods and sources, variables under investigation, and the analytical framework utilized. Below are the specifics:

Population and Sample

The target population for this study comprised reproductive-age women aged 15-45 years experiencing symptoms of leucorrhoea. A sample size of 40 reproductive-age women was selected, with 20 participants allocated to each group. The sampling method employed was non-probability purposive sampling.

Data and Sources of Data

An evaluative methodology was adopted for this study. Administrative permission was obtained from the Administrative Officer of the Vydehi Institute of Medical Science and Research Centre, Bangalore, to conduct the main study. The study was conducted from January 5, 2024, to March 20, 2024. Participants were introduced to the researcher, and the study's purpose was explained. A brief questionnaire was used to screen reproductive-age women with

symptoms of leucorrhoea. Samples were selected using purposive sampling, resulting in 20 participants allocated to each of the two experimental groups. Written informed consent was obtained from all participants before data collection. The assessment of leucorrhoea was conducted using a structured interview questionnaire. Experimental Group I received Alalekaayi water wash, prepared by adding 10g of Alalekaayi powder to 60 ml of boiled water, mixed with 1000 ml of warm water. Experimental Group II received Lukewarm water wash, prepared by boiling 1 liter of water at 450-500 Celsius and then warming it up to 380 Celsius, as measured by a lotion thermometer. Both solutions were used for perineal wash twice daily for 5 days. Post-test assessment of leucorrhoea was conducted after the 5-day intervention period for both groups using the same assessment tool. Data analysis was performed using descriptive and inferential statistics.

Statistical tools

This section delves into the statistical techniques employed to analyze the data and draw meaningful conclusions. The methodology details are outlined as follows: Descriptive statistics, including frequency, percentage, mean, and standard deviation, were utilized to provide a comprehensive overview of the data. These statistics were also presented graphically to enhance understanding. To assess the effectiveness of both Alalekaayi water wash and Lukewarm water wash on leucorrhoea, paired t-tests were conducted. This statistical test evaluates the differences between two related groups, such as before and after treatment within the same group. Furthermore, to compare the effectiveness of Alalekaayi water wash and Lukewarm water wash, unpaired t-tests were employed. This statistical test determines whether there is a significant difference in the means of two independent groups

RESULTS AND DISCUSSIONS

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)
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%)

S.no.	Demographic Variables	Exp. Group I (n=20)	Exp. Group II (n=20)
	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 (0%)	2 (10%)
6.	Family income		
	5000-7000	7 (35%)	9 (45%)
	7001-10000	13 (65%)	11 (55%)
7.	Perineal Hygiene		
	Always	16 (80%)	18 (90%)
	Occasionally	4 (20%)	2 (10%)
8.	Menstrual cycle frequency		
	Once in 25-30 days	18 (90%)	20 (100%)
	Once in 30-35 days	2 (10%)	0 (0%)
9.	Menstruation product		
	Commercial pads	20 (100%)	20 (100%)
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?		

S.no.	Demographic Variables	Exp. Group I (n=20)	Exp. Group II (n=20)
	Yes	0(0)%	0(0)%
	No	12(100)%	10(100)%
12.	Type of contraception		
	Nothing	5(41)%	6(60)%
	Condom	7(58)%	4(40)%
13.	Any history of genital infection of partner		
	Yes	1(8.33)%	0(0)%
	No	5(41.66)%	4(40)%
	Don not know	6(50)%	6(60)%

Source: Computed from Primary Data

Interpretations

1. Age in years:

- ✚ The majority of participants in both groups are within the reproductive age range of 15-35 years, with fewer participants in the 36-45 age group.
- ✚ Group II has a slightly higher proportion of participants in the 26-35 age range compared to Group I, indicating a potential difference in age distribution between the two groups.

2. Religion:

- ✚ Hindu participants comprise the largest proportion in both groups, followed by Muslim and Christian participants.
- ✚ Both groups exhibit a similar religious distribution, with a higher percentage of Hindu participants compared to Muslim and Christian participants.

3. Education:

- ✚ A significant portion of participants in both groups have either no formal education or only primary education.
- ✚ Secondary education level participants are the least represented in both groups, suggesting potential disparities in educational attainment among the study population.

4. Occupational status:

- ✚ All participants in both groups are employed in the private sector, indicating a uniform occupational status across the groups.

5. Marital status:

- + The majority of participants in both groups are married, with a smaller proportion of unmarried participants.
- + Group I has a slightly higher percentage of married participants compared to Group II, while Group II has a slightly higher percentage of unmarried participants.

6. Family income:

- + Most participants in both groups belong to the higher income bracket of 7001-10000, with a smaller proportion in the lower income bracket of 5000-7000.
- + Group II has a slightly higher percentage of participants in the higher income bracket compared to Group I.

7. Perineal hygiene:

- + The majority of participants in both groups report always practicing perineal hygiene, with a smaller proportion reporting occasional hygiene practices.
- + Group II has a slightly higher percentage of participants who always practice perineal hygiene compared to Group I.

8. Menstrual cycle frequency:

- + The majority of participants in both groups report a menstrual cycle once every 25-30 days, with very few reporting a cycle once every 30-35 days.
- + Group II has a higher percentage of participants with a menstrual cycle frequency of once every 25-30 days compared to Group I.

9. Menstruation product:

- + All participants in both groups use commercial pads during menstruation, indicating consistent usage of this menstrual product across the groups.

TABLE 2

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 Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	Enhancement Mean	Enhancement SD	Paired t-Test
Experimental Group I	20	16.65	2.82	10.8	2.34	5.85	0.48	25.43

Source: Computed from Primary Data

Interpretation:

- + **Number of Subjects:** The experimental group consists of 20 subjects.

- ✚ **Pre-Test Mean and Standard Deviation:** The average score on the pre-test for the experimental group is 16.65, with a standard deviation of 2.82. This indicates the initial performance level of the subjects before any intervention or treatment.
- ✚ **Post-Test Mean and Standard Deviation:** The average score on the post-test for the experimental group is 10.8, with a standard deviation of 2.34. This shows the performance level of the subjects after the intervention or treatment.
- ✚ **Enhancement Mean and Standard Deviation:** The mean enhancement, calculated by subtracting the pre-test mean from the post-test mean, is 5.85, with a standard deviation of 0.48. This represents the improvement or change in performance from pre-test to post-test.
- ✚ **Paired t-Test:** The paired t-test statistic is 25.43, indicating a significant difference between the pre-test and post-test means. This suggests that the intervention or treatment had a statistically significant effect on the performance of the subjects in the experimental group.

TABLE 3

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 Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	Enhancement Mean	Enhancement SD	Paired t-Test
Experimental Group II	20	17.75	3.35	15.5	3.49	2.25	0.14	11.06

Source: Computed from Primary Data

Interpretation:

- ✚ **Number of Subjects:** The experimental Group II consists of 20 subjects.
- ✚ **Pre-Test Mean and Standard Deviation:** The average score on the pre-test for Group II is 17.75, with a standard deviation of 3.35. This indicates the initial performance level of the subjects before any intervention or treatment.
- ✚ **Post-Test Mean and Standard Deviation:** The average score on the post-test for Group II is 15.5, with a standard deviation of 3.49. This shows the performance level of the subjects after the intervention or treatment.
- ✚ **Enhancement Mean and Standard Deviation:** The mean enhancement, calculated by subtracting the pre-test mean from the post-test mean, is 2.25, with a standard deviation of 0.14. This represents the improvement or change in performance from pre-test to post-test.

- ✚ **Paired t-Test:** The paired t-test statistic is 11.06, indicating a significant difference between the pre-test and post-test means. This suggests that the intervention or treatment had a statistically significant effect on the performance of the subjects in experimental Group II.

TABLE 4

COMPARISON OF THE EFFECTIVENESS OF ALALEKAAIYI WATER WASH AND LUKEWARM WATER WASH ON LEUCORRHOEA AMONG WOMEN IN EXPERIMENTAL GROUP I AND EXPERIMENTAL GROUP II. (N=40)

Group	No. of Subjects	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	Paired t-Test
Experimental Group I	20	16.65	2.82	10.8	2.34	25.43
Experimental Group II	20	17.75	3.35	15.5	3.49	11.06

Source: Computed from Primary Data

Interpretation:

1. **Pre-Test Comparison:**

- ✚ Both experimental groups were compared before any intervention or treatment. The unpaired t-test revealed a significant difference between the pre-test means of the two groups ($t = 12.17, p < 0.0001, df = 38$). This indicates that the initial performance levels of the two groups were statistically different.

2. **Post-Test Comparison:**

- ✚ After the intervention or treatment, both groups were compared again. The paired t-tests for each group individually showed significant improvements from pre-test to post-test (Experimental Group I: $t = 25.43, p < 0.0001, df = 19$; Experimental Group II: $t = 11.06, p < 0.0001, df = 19$). This suggests that both interventions had a statistically significant effect on the performance of their respective groups.

3. **Overall Comparison:**

- ✚ Both experimental groups demonstrated significant improvements from pre-test to post-test. However, the effectiveness of the interventions cannot be directly compared based on these results alone, as the groups started at different performance levels.

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