

## Effect of Teaching Guideline on Women Knowledge and Practices regarding Leucorrhoea at Reproductive Age

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### Abstract

**Background:** Leucorrhoea is strictly an excessive normal vaginal/cervical discharge and it is one of the most common complaints of the patients attending the Outpatients' Gynecological clinics. **The aim** of the study was to evaluate the effect of teaching guidelines on women's knowledge and practices regarding leucorrhoea at reproductive age. **Design:** Quasi-experimental research design was used. **Setting:** The current study was conducted at Outpatients' Gynecological clinics at Beni-Suef University Hospital. **Subjects:** A purposive sample of a total of 500 women of reproductive age was recruited for the study. Three tools were used for data collection; Tool (1): A structured interview questionnaire; Tool (2): women's knowledge about leucorrhoea (pre/post), Tool (3): women's practices about leucorrhoea (pre/post). **Results:** The study result revealed that there was a highly statistically significant difference and improvement between the pre-teaching guidelines and post-teaching guidelines regarding women's Knowledge and practices about leucorrhoea. Leucorrhoea found that among the women under study, there was a positive statistically significant association between the total knowledge and the total practice scores. Additionally, there is a statistically significant correlation between the study's demographic variables for the women and the overall knowledge and practice scores. **Conclusion:** Teaching guidelines had a positive effect on improving women's knowledge and practices at reproductive age regarding leucorrhoea. **Recommendations:** Implementing continued teaching guidelines about leucorrhoea should be provided to women of reproductive age according to their needs to improve their knowledge and practices. Proper counseling can be given to women as well as nurse care practices at the time of counseling.

**Keywords:** Leucorrhoea, Knowledge and practices, Teaching guidelines, Women's in reproductive age

### Introduction:

The International Conference on Population and Development (ICPD) in Canada defined reproductive health as a state of complete physical, mental, and social well-being in all matters relating to the reproductive system and its functions and processes, rather than just the absence of sickness or illness. Despite being the ICPD's primary focus,

reproductive health was left out of the advancement objectives (Joshi et al, 2018).

Reproductive tract infections are one of the major diseases that are widespread in developing countries, and include infections caused by any (or combination) of the following three factors: iatrogenic, endogenous, and sexually transmitted. While a range of symptoms define the disease, the most common symptom among women is abnormal vaginal discharge (or leukorrhea).

(National Center for Health Statistic, 2020).

The fluid-like production from the vagina's epithelial cells and Bartholin's glands, which support the vaginal microenvironment, is what defines the vaginal discharge. Nonetheless, a variety of pathophysiological diseases are either directly or indirectly linked to changes in the secretion's quantity or quality. (Fonseca et al, 2019).

Leucorrhea, or vaginal discharge, can be pathological or physiological. Normal vaginal flora, or lactobacilli, colonize the vaginal epithelium during physiological discharge and may play a part in infection prevention. They keep the pH of the vagina between 3.8 to 4.4, which is typical. However, unusual vaginal discharge frequently encourages women to get screened for STDs. (Thomas, 2019).

Leucorrhea is a typical complaint of patients visiting the obstetrics and gynecology department. It is precisely defined as an excessive normal vaginal or cervical discharge. Leucorrhoea can have a physiological explanation, such as an elevated estrogen level, but it usually indicates some underlying pelvic illness. (Wessels et al., 2018).

A chronic and profuse vaginal discharge is known as leucorrhea, or vaginal discharge. It is one of the most prevalent chief complaints in clinical medicine, with over 10 million women reporting symptoms each year. While some women view a greater discharge as usual, others find discomfort with a less frequent discharge. (National Center for Health Statistic, 2020).

Trichomonas vaginalis, candida, and bacterial vaginosis are the main pathogenic culprits.<sup>5-7</sup> While some women consider a regular flow to be heavy, others are unaffected by a profuse discharge. Any age group, including infancy, adolescence, the reproductive age group, menopause, and senescence, may have the ailment. It is important to assess vaginal discharge symptoms as soon as possible in order to provide the right treatment at the right time. (Prusty et al., 2018).

Reproductive tract infections (RTI) are more common in countries with poor or low economic status.. Specifically, in nations such as India, RTI is the most prevalent health issue, affecting an estimated 6% (30–35 million) of adult populations who have had one or more episodes in a given year. Important risk factors, including age, income, education, and the number of children, were found to be associated with positive leucorrhoea patients in a recent study. (Fernandopulle, 2019).

Although the symptom can manifest at any stage of life, including childhood, adolescence, menopause, and senescence, it is more prevalent in women of reproductive age. The squamous epithelium lines the typical vagina. With an acidic pH of less than 4.5, it is heavily occupied by bacterial flora, primarily Lactobacillus. (Thomas, 2019).

Except before menstruation or throughout the middle of the cycle, women may occasionally complain of a clear white or mucoid discharge. These discharges can come from the fallopian tubes, ovaries, vagina, or, most frequently, the cervix. It is a representation of the vaginal mucosa's desquamation of vaginal epithelial cells due to the actions of estrogen. A lady with excessive discharge that is white will feel weak and lethargic. It appears as a viscous, thick, white discharge that comes from the vagina in between periods. For some women, headaches may also accompany it. Pain in the lumbar region and the calf muscle may be experienced as a result of frequent discharge. (Chance, 2018).

Numerous community-based research projects conducted in developing nations have demonstrated that women have been silently suffering from morbidity and general ill health for a variety of reasons, including cultural constraints, gender inequality, a lack of women's autonomy, a lack of awareness, inadequate infrastructure, and a lack of targeted counseling services. (Demba et al, 2021).

The five common reproductive tract infections that are treated for complaints of discharge include trichomoniasis, gonorrhoea, and chlamydia trachomatis, which are sexually transmitted infections, and candidiasis and bacterial vaginosis, which are caused by disruptions in the normal bacterial flora of the vagina. A notable degree of irregular vaginal discharge is associated with a sharp increase in various gynecological problems. The elimination of systemic toxicity, the main cause of leucorrhoea, requires a comprehensive health-building plan. A plan like this should include healthy eating, enough sleep, exercise, sunshine, and fresh air. Heal leucorrhoea pill: a proprietary formula that eliminates vaginal infections and tames dark-colored, foul-smelling discharge (Thomas, 2019).

### **Significance of the study:**

Most women quietly deal with their issues without seeking devices and treatment.. This is also one of the reasons why leucorrhoea is always a possibility for women. According to estimates from the WHO, up to 357 million new cases of women between the ages of 15 and 49 were documented as having one of four treatable gynecological conditions: syphilis, chlamydia trachomatis, gonorrhoeae, or Trichomonas vaginalis. (Patel & Mazumdar, 2019).

Numerous studies revealed that due of their "culture of silence," women frequently have reproductive morbidities for a long time and don't think they need to consult a doctor for them. Therefore, it is the duty of the healthcare professional to raise knowledge about leucorrhoea, as this aids in the early detection of the issue during the first phase of treatment. (Thomas, 2019).

According to some research on women's knowledge of leucorrhoea in underdeveloped nations, approximately 83% of the women who participated in the study had vaginal discharge. (Kala & Jayabharathi, 2019). Hence, the investigator has decided to evaluate the effect of teaching guidelines regarding leucorrhoea on women's

performance at reproductive age.

### **Aim of the study:**

The study was aim to evaluate the effect of teaching guidelines on women's knowledge and practices regarding leucorrhoea at reproductive age through:

- Assessing women with vaginal discharge.
- Designing and implementing teaching guidelines regarding leucorrhoea for women reproductive age based on their needs.
- Evaluating the effect of applying teaching guidelines on women's knowledge and practices regarding leucorrhoea at reproductive age

### **Research Hypotheses:**

H1; teaching guideline will have a positive effect on women' knowledge & practices regarding Leucorrhoea at reproductive age.

H2; There is a positive correlation between women' knowledge and practices regarding Leucorrhoea at reproductive age.

### **Subjects & Method**

#### **I-Technical Design:**

The technical design of the study includes research design, setting, subjects, and tools for data collection.

#### **Research design:**

A quasi-experimental design was used to achieve the aim of this study.

**Setting:** The current study was conducted at Outpatients' Gynecological clinics at Beni-Suef University Hospital. The reason this setting was chosen is that it serves the largest portion of the population and has a high patient prevalence.

**Sample:** A purposive sample of a total of 500 women of reproductive age was recruited for the study.

**Sample calculation:** The sample size calculation equation revealed that 500 women were determined by using the equation similar in a study by (Brown & Hollander, 1977) who found that 500 women were enough sample.

**Inclusion criteria:**

1. They were between the ages of 18 and 45.
2. Assent to take part in the research.
3. The existence of discharge and any accompanying symptoms

**Exclusion criteria - :**

1. Decide not to take part in the research.
2. Chronic illness history

**Tools for Data Collection:**

Three tools were used for data collection through;

**Tool (1):** A structured interview questionnaire (pre and post-test format) was developed by the researchers after reviewing the related literature and research studies. It included the following two parts:

**Part I: Women's demographic characteristics:** It consists of six questions about the women's age, education, occupation, place of residence, marital status, and menstrual age comprise this questionnaire.

**Part II: Current history & or complaints of vaginal discharge assessment sheet:**

It contained the patient's medical history, the reported vaginal discharge's color, consistency, odor, volume, and time of a noticeable rise in volume, as well as the symptoms that were linked to it (genital itching, redness, dysuria, abdominal pain, back pain, vulva swelling, and pelvic congestion).

**Tool (2): Women's knowledge about leucorrhoea (pre/post):**

It is used to assess women's knowledge. It was developed by the researcher after

reviewing the literature and expertise' opinions (Kala & Jayabharathi, 2019, Patel & Mazumdar, 2019, *National Center for Health Statistic, 2020*). It involved twelve questions of closed-ended questions related to addresses the following topics: the definition, types, causes, quantity, nature, and accompanying symptoms of leucorrhoea; also, women's practical management of these symptoms.

**Scoring system:**

A right answer on the knowledge items was worth one point, while an erroneous one was worth zero. A mean score for the portion was obtained by adding up all of the item scores and dividing the result by the total number of items. The averages and standard deviations were calculated, and these scores were transformed to a % score. If the knowledge score was 60% or less, it was deemed unsatisfactory, and if it was 60% or higher, it was deemed satisfactory.

**Tool (3): Women's practices about leucorrhoea (pre/post):**

It is used to assess women's practices regarding leucorrhoea. It was developed by the researcher after reviewing the literature and expertise' opinions (Kala & Jayabharathi, 2019, Patel & Mazumdar, 2019, *National Center for Health Statistic, 2020, Demba et al, 2021*). It had fourteen questions about how to clean the vagina, where to clean it after a bath, what kind of underwear to wear, how long to use a pad for vaginal discharge, the nature of the response, and performing traditional practices. It also asked about when to seek medical advice, what kind of medication was prescribed, whether the course of medication was completed and why it wasn't, how to follow up after treatment, and who to contact for more information.

**Scoring system**

For the women's practices regarding leucorrhoea, One point was awarded for a proper response, and zero for an erroneous one. A mean score for the portion was obtained by adding up all of the item scores and dividing the result by the total number of items. The averages and standard deviations were

calculated, and these scores were transformed to a % score. Women's practices were considered adequate if the percent score was 60% or less and considered satisfactory if women's practices were 60% or more.

## II- Operational Design:

Preparatory work, content validity, reliability, pilot research, and fieldwork were all included in the operational design.

**A-Preparatory phase:** It involves using books, papers, the internet, periodicals, magazines, and other sources to study the literature, diverse studies, and theoretical understanding of many elements of the situation.

**B-Content and face validity:** It was ascertained by a jury consisting of five expert professors, three professors in the field of obstetric nursing, and two professors in the field of medical obstetrics, and change was done based on their opinion modifications.

**C- Test of reliability:** Cronbach alpha coefficient was calculated to assess the reliability of the developed tools through their internal consistency. The alpha reliability of tool 2 (knowledge) was 0.879, and the reliability of tool 3 (practices) was 0.894.

### Pilot Study:

A pilot study was conducted on 10 % of the study subjects (50 women) to test the applicability & feasibility of the tools of data collection, and to estimate the time required for filling the required forms. As needed modifications were done and women were presented involved in the pilot study was included in study.

### Ethical considerations:

Describe the purpose of the study to the hospital's director so that you may obtain his approval to carry it out, and ensure that each participant gives their agreement to participate

in the study. Oral consent was obtained from the women after an explanation of the study's purpose and before starting the study. The researchers informed them that the information obtained would be used for study purposes only. They also were informed that they could refuse to participate in the study, to withdraw from it at any time.

### Field Work:

The data collection was started from the beginning of March 2021 and at the end of August 2021 two days weekly at the previously selected setting for two days per week in the morning shift.

The women under study were given the following data collection instruments twice: (1) a pre-test to gauge their knowledge and practices prior to implementing teaching guidelines.

After analyzing the relevant literature in light of the assessment of the real needs of the examined women, a simplified booklet covering all topics related to the knowledge and practice of leucorrhoea was provided to the women in Arabic as support material. A variety of instructional techniques were employed, including talks, discussions, images, and posters.

The leucorrhoea teaching guidelines were created and put into practice by the researchers as a theoretical and practical component. The knowledge of women on leucorrhoea was covered in the theoretical section. It was put into practice with the use of talks, posters, instructional movies, role-plays, and situations. The researchers created a simple Arabic-language teaching brochure with illustrative drawings about leucorrhoea, which they distributed to the women under study.

Five sessions—two for the practical portion and three for the theoretical portion—have been used to organize the subject contents, each session takes 1 hour to discuss the content and 15 minutes to conclude and ask questions. The total time was 2 hours

for each one. The first session began with an introduction to the leucorrhoea teaching standards, and subsequent session began with a summary of the feedback from the prior one.

**Teaching Guidelines included knowledge regarding leucorrhoea as follows:**

- Leucorrhea meaning
- Types of leucorrhea
- Causes of leucorrhea
- Quantity and kind of these leucorrhea symptoms
- Associated leucorrhea symptoms
- Practical measures taken by women to address these symptoms

**Teaching Guidelines included practices regarding leucorrhoea as follow**

- How to clean the vagina;
- Which way to clean the vagina after taking a bath;
- Types of underwear
- Using a pad for vaginal discharge; How long they responded; The type of response;
- Following customs; Getting medical counsel; When to get it.
- The kind of drug recommended, whether the entire course is taken, and the reasons why
- Following up with the resource persons for their input as well as after the treatment.

**Explanation was done through five sessions as follow:**

- **The first session:** Teach women an overview of leucorrhea meaning, types of leucorrhea, and causes of leucorrhea

- **The second session:** teach women about amount and character of these symptoms of leucorrhea and associated symptoms of leucorrhea.

- **The third session:** teach women about women's care toward these symptoms of leucorrhea

**The fourth session:** teach women about How to clean the vagina, which way to clean it after taking a bath, what kind of underwear to wear, and whether to use a pad to control vaginal discharge are all important considerations.

**The fifth session:** instructing women on how to carry out traditional practices), obtaining medical advice, when to seek it, the kind of medication supplied, finishing the course of treatment and the reasons for not finishing it, and following up post treatment in addition to the resource persons for their answer.

**III-Evaluation phase:**

The evaluation was conducted by interviewing women at the outpatients' clinic post one month by using the same tools to evaluate the effect of teaching guidelines regarding leucorrhoea on women's performance at reproductive age.

**III- Administrative Design:**

The Dean of Beni-Suef University's Faculty of Nursing granted written authorization for the study to be conducted, and an official letter was issued to the study's chosen location. The hospital's director was notified to get consent before involving the patients in the current study.

**IV- Statistical Design**

After being coded and moved into formats created especially for data entry, the data were computed and examined. The social science statistical software SPSS 20.0 was used to collect the data. For both qualitative and quantitative variables, descriptive statistics were used to portray the data as means and standard deviations for the former and frequencies and percentages for the latter. The person chi-square test and the non-parametric chi-square test were used to compare qualitative factors. At p-value <0.05, statistical significance was deemed to have occurred.

**Results:**

**Table (1)** shows that (54%) of the studied women were between 30 to less than 40 years old with a mean age was  $31.08 \pm 6.07$ , and a high percentage of them (33%) were secondary level. As regard occupation (57%) of the studied women was housewives and 63% of them were from rural areas. Concerning marital status, 95% of the studied women were married. The same table denotes that the age of menses among (98%) of them at < 14.

**Table (2)** demonstrates the distribution of the women under study in relation to their vaginal discharge history as of right now. They all (100%) had vaginal discharge, as evidenced by this. Approximately 55% of women reported having vaginal discharge more than two weeks prior. Eighty percent (80%) of them had white discharge, according to the data on vaginal discharge color. 38% of them experienced liquid, creamy discharge when it came to vaginal discharge consistency. In terms of vaginal discharge odor, 48% of the women in the study reported an unpleasant odor. Regarding the volume of discharge from the vagina, it is discovered that (40%) of them had few discharge. Concerning time of marked increase volume of discharge 30% reported was increased before menstruation.

**Figure (1)** demonstrates the distribution of the women under study in relation to the symptoms that are connected to vaginal discharge. It is clear that the majority of them (88%) reported experiencing genital itching, which was followed by redness (42%), lower abdomen pain (38%), dysuria (38%), back pain (32%), and vulva swelling (8%). Additionally, 6% of respondents bring up pelvic congestion.

**Figure (2):** Portrayed that 60% of the studied women reported that their main source

of information about knowledge regarding leucorrhoea was doctors.

**Table (3):** Illustrates that there were highly statistically significant differences found between women's knowledge of pre/post-teaching guidelines regarding leucorrhoea ( $P < 0.001$ ).

**Figure (3):** Demonstrates that (27%) of the studied women had satisfactory knowledge regarding leucorrhoea pre-teaching criteria that were better than post-teaching guidelines, with 87% of them demonstrating adequate knowledge. Regarding women's knowledge of leucorrhoea, there was a very statistically significant difference and improvement between the pre- and post-teaching guidelines with ( $P < 0.001$ ).

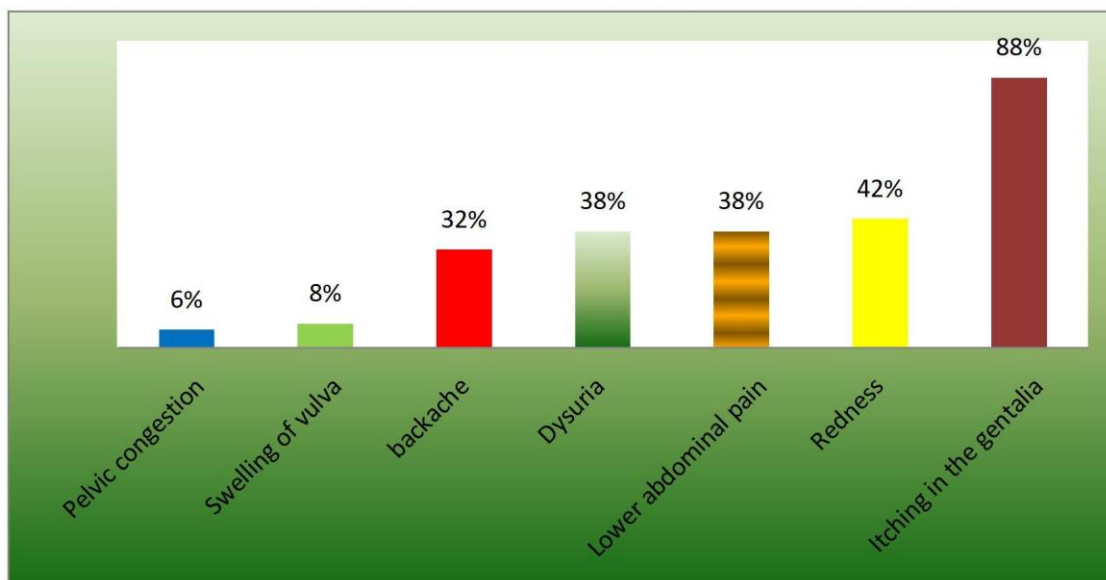
In the comparison of the studied women's practices regarding leucorrhoea **table (4)** demonstrated that women's practices before and after teaching guidelines differed in a very statistically significant way ( $p < 0.001$ ).

**Figure (4):** Portrays the women's total practices regarding leucorrhoea pre- and post-teaching guidelines, and indicated that (83%) of the studied women had an inadequate level of practice pre-teaching guidelines, but post-teaching guidelines (87%) of them had an adequate level of practice. Related women's practices about leucorrhoea, there was a highly statistically significant difference and improvement between the pre- and post-teaching guidelines.

**Table (5)** indicates that the study's total knowledge and total practices scores of the women were statistically significantly positively correlated with the leucorrhoea pre- and post-teaching guidelines ( $p < 0.001$ ).

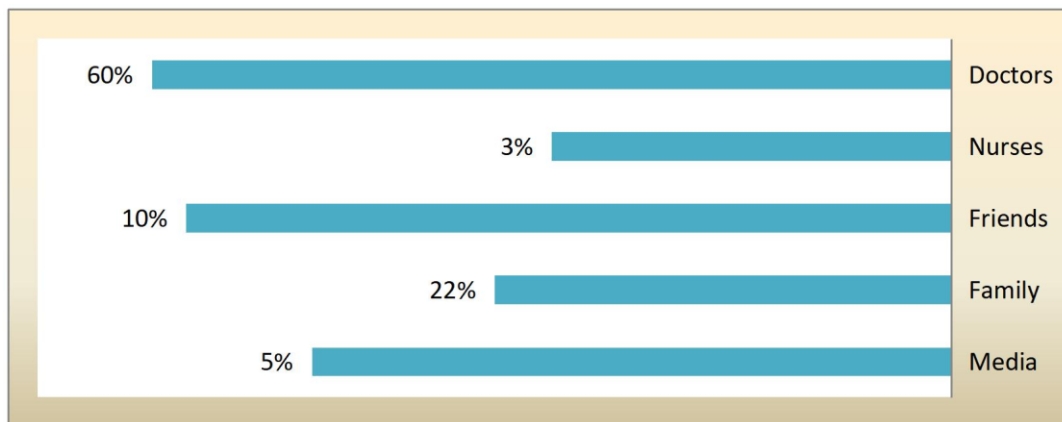
**Table (1): Frequency and percentage distribution of the studied women regarding their demographic characteristics**

Demographic characteristics	The Studied women (n=500)	
	N	%
<b>Age :</b>		
• 18 < 30	270	54.0
• 30 < 40	130	26.0
• ≥45	100	20.0
<b>(Mean ±SD): 31.08±6.07</b>		
<b>Education:</b>		
• Illiterate	135	27.0
• Read and write	100	20.0
• Secondary education	165	33.0
• High education	100	20.0
<b>Occupation:</b>		
• Working.	215	43.0
• Housewives	285	57.0
<b>Residence:</b>		
• Urban	185	37.0
• Rural	315	63.0
<b>Marital status</b>		
• Married	475	95.0
• Single	25	5.0
<b>Age of menses:</b>		
• < 14	490	98.0
• >14	10	2.0

**Figure (1): Distribution of the studied women regarding to their associated symptoms with vaginal discharge (n = 300)**



**Figure (2): Percentage distribution of the studied women regarding their source of knowledge about leucorrhoea**



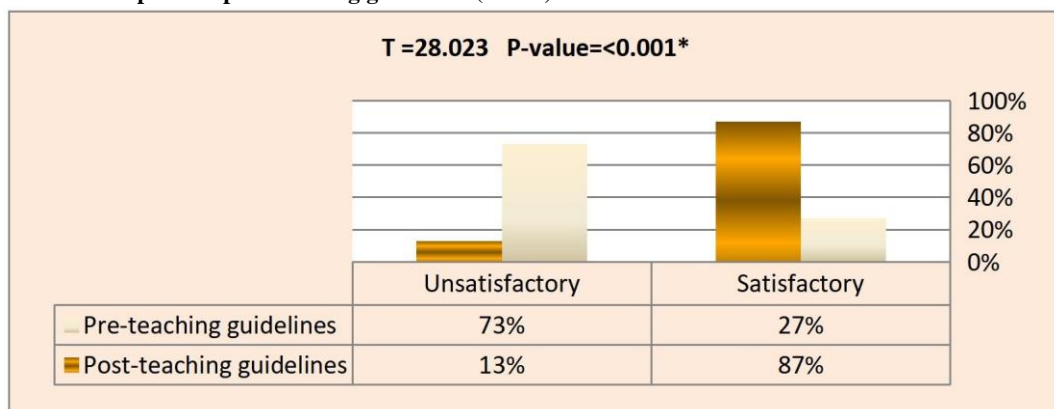
**Table (2): Frequency and percentage distribution of the studied women regarding their current history and complaints of vaginal discharge (500)**

Current history and characteristics of reported vaginal discharge	No	%
<b>Complaints of vaginal discharge</b>		
yes	500	100.0
no	0	0.0
<b>The beginning time of discharge from</b>		
one week	100	20.0
two weeks	125	25.0
more than two weeks	275	55.0
<b>Features of vaginal discharge reports</b>		
<b>The vaginal discharge's color</b>		
Vibrant yellow	60	12.0
Yellow veered toward gray.	30	6.0
Brown	10	2.0
Red	0	0.0
White	400	80.0
<b>Consistency of vaginal discharge</b>		
Thick like cheese 47 33.3	150	30.0
Thin secretions 46 34.1	160	32.0
Liquid such as creamy	190	38.0
<b>Odor of discharge</b>		
Unpleasant	240	48.0
Offensive	85	17.0
No smell	175	35.0
<b>Volume of vaginal discharge</b>		
mild	200	40.0
Moderate	175	35.0
Heavy	125	25.0
<b>Time of marked increase volume</b>		
Before menstruation	150	30.0
After menstruation	135	27.0
In the middle of the month	145	29.0
All days of the month	70	14.0

**Table (3) Comparison of women's Knowledge related to leucorrhoea Pre and Post teaching guidelines (N-500)**

Knowledge items	Pre-teaching guidelines		Post-teaching guidelines		X <sup>2</sup>	P-value
	N	%	N	%		
- Leucorrhea meaning	200	40	500	100	134.46	<0.001
- Types of leucorrhea	115	23	435	87	160.24	<0.001
- Causes of leucorrhea	130	26	425	85	110.22	<0.001
- Quantity and kind of these leucorrhea symptoms	160	32	430	86	130.63	<0.001
- Associated leucorrhea symptoms	190	38	465	93	80.17	<0.001
- Practical measures taken by women to address these symptoms	210	42	450	90	54.37	<0.001

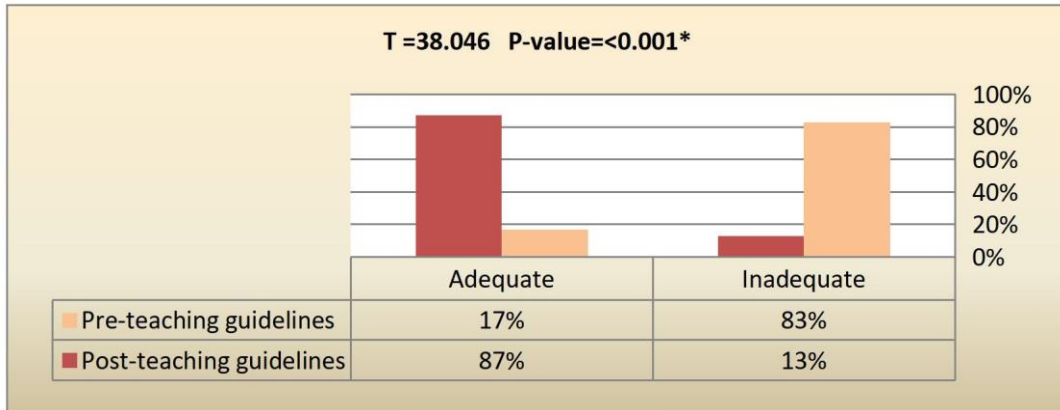
**\*Highly significance at <0.001 levels**

**Figure (3): Percentage distribution of the studied women's total knowledge regarding leucorrhoea pre and post-teaching guidelines (N-500)****Table (4) Comparison of women's practices related to leucorrhoea pre and post-teaching guidelines (N-500)**

Practices regarding leucorrhoea	Studied women (n= 500)				X <sup>2</sup>	P-value
	Pre-teaching guidelines		Post-teaching guidelines			
	N	%	N	%		
- How to clean the vagina;	175	35	465	93	63.07	<0.001**
- Which way to clean the vagina after taking a bath;	130	26	460	92	101.03	<0.001**
- Types of underwear	170	34	380	76	67.45	<0.001**
- Using a pad for vaginal discharge; How long they responded; The type of response;	160	32	450	90	87.45	<0.001**
- Following customs; Getting medical counsel; When to get it.	185	37	435	87	26.72	<0.001**
- The kind of drug recommended, whether the entire course is taken, and the reasons why	145	29	440	88	73.84	<0.001**
- Following up with the resource persons for their input as well as after the treatment.	95	19	365	73	16.73	<0.001**

**\*Highly significant at <0.001 levels**

Figure (4) differences between women's total practices pre and post-teaching guidelines regarding leucorrhoea (n=500)



\*Highly Significance at P-value 0.0001 levels

Table (5): Correlation between total knowledge and total practice scores of the studied women's pre and post-teaching guidelines (n=500).

Variables	Pearson correlation coefficient			
	Total knowledge score			
	Pre- teaching guidelines (n=500)		Post teaching guidelines (n=500)	
	r	P	r	P
Total practices score	.443	0.001**	.637	0.001*

\*\* Correlation is significant at the 0.01 level

**Discussion:**

Leucorrhea, which literally translates to "something white running or flowing down," is a natural defense mechanism in the vagina. Leucorrhoea is not always present in the same person and is dependent on a number of pathophysiological factors. Abnormal vaginal discharge is one of the aspects that are significantly linked to the changes in women's reproductive physiology. It especially degrades the quality of life for women in the reproductive age range, specifically their sexual and mental well-being. (Ramadhanti & Henna, 2020).

Regarding the women's past history of vaginal discharge, the results of the present study showed that every single one of them experienced vaginal discharge. The current result closely aligns with Khedr et al., (2015). They estimated prevalence and explored knowledge and practices concerning vaginal secretions among students in the Egyptian universities. Also,

Ilan koon et al., (2017) They evaluated the knowledge and experiences of women in Colombo District estates on abnormal vaginal discharge. Additionally, Uwakwe et al., (2018) they evaluated the frequency, pattern, and predictors of abnormal vaginal discharge in Imo State, Nigerian women visiting medical facilities, and they found that nearly all the sample had abnormal vaginal discharge.

On contrast, Abd EL-Menim et al., (2018) examined the prevention of vulvitis in nursing students and found that only 25% of the sample experienced vaginal discharge. Given that the study was carried out in Upper Egypt, where cultural norms may influence students' disclosure of personal information, this discrepancy could be the result of the shame experienced by female students to participate in it. Furthermore, Shah et al. (2019) evaluated the adolescent females in Lalitpur Metropolitan City with regard to their knowledge and practices of genital health and cleanliness. They showed that around one-third of teenagers had vaginal discharge. This discrepancy could result from the surroundings, customs, and culture being different.

The majority of the women in the study reported having white normal vaginal discharge., according to the characteristics of vaginal discharge that they described. Slightly more than one tenth of them had an unpleasant odor, and about half of them had an unpleasant odor discharge. The current results are consistent with those of **Khedr et al. (2015) and Iankoon et al. (2017)**. They investigated the causes of vaginal discharge complaints among South Asian women. They stated that white discharge was present in most samples, followed by yellow discharge.

On the contrary **Zaher et al., (2017)** When women's awareness of vaginal discharge was evaluated, the results showed that only 50% of the subjects had white discharge, 25% had yellow discharge, and over 50% had thick discharge. Once more, **Sinan et al. (2020)** evaluated the efficacy of training women on genital infection awareness using the IMB model. According to their report, half of the individuals had yellow bad-smelling discharge and just 25% had white discharge.

Results of the current study revealed that three-fifths of the studied women reported that their main source of information about knowledge regarding leucorrhoea was doctors. From the researchers' point of view, because they trust the counsel of specialists and receive accurate diagnoses, women are more likely to seek assistance from physicians.

The findings of the present study are matched with the study conducted by **Sevil et al., (2018)**, who studied "An evaluation of the relationship between genital hygiene practices, genital infection", which revealed that nearly half of the students described that healthcare professionals were their preferred source of information.

Also, the finding is similar to **Sarah et al., (2018)**, who conducted a study about "Attitudes and experience of women to common

vaginal infections", and showed that doctors were their preferred source of information.

The results of the present study differ from those of **Renju (2019)**, who discovered that mass media was the most often used source in his Mangalore study on the "Effectiveness of planned teaching program on vaginitis and its prevention among adolescents of selected pupil colleges."

This finding conflicts with that of **Youness et al. (2017)**, who investigated the "Effectiveness of planned educational program on vaginitis and its preventive measures on adolescent female nursing student's knowledge" and discovered that, for the majority of them, friends and family constituted the primary source of information.

Regarding the women's knowledge about leucorrhoea, the study results showed that there were highly statistically significant differences found between women's knowledge of pre/post-teaching guidelines regarding leucorrhoea. According to the researcher's point of view, this outcome demonstrates the beneficial impact of the teaching standards, which satisfy the requirements of the studied nurses' and give them adequate information.

This finding is strongly in line with **Goudia et al., (2019)** who looked into how educational programs affected female university students' knowledge of vulvovaginal candidiasis. They found that the pre-test knowledge score was extremely low overall, indicating low knowledge level, but improved to a good level following the training.

The distribution of the women based on their overall leucorrhoea knowledge score showed that over 25% of them knew enough about pre-teaching guidelines, according to the current study's findings. These results contradict those of **Kaur & Kapoor (2019)**, who conducted a study on perceptions and knowledge of leucorrhoea in a South Asian slum community. In their study, they reported that women's awareness of leucorrhoea was practically universal (97%).

The present study results revealed that the majority of women had satisfactory knowledge and their knowledge improved post-teaching guidelines. Regarding women's knowledge of leucorrhoea, there was a highly statistically significant improvement and difference between the pre- and post-teaching guidelines. This result suggests that raising women's knowledge of leucorrhoea was a successful outcome of putting teaching recommendations into practice.

The current study's findings are consistent with those of **Youness et al. (2017)**, who found that there was a statistically significant difference between the examined sample's pretest and post-test total knowledge score levels with relation to the total knowledge score level. The results of **Alka et al. (2018)**, who examined the "Effectiveness of a "planned teaching program" on knowledge related to reproductive tract infections among rural women," further corroborate the findings of the current study. They discovered that the mean post-test knowledge score was higher than the pretest knowledge score.

Similarly, the results of **Yar mohammadi, et al.'s (2019)** investigation into "The effect of education on knowledge, attitude, and practices of patients with vaginitis" showed that there was a significant increase in the mean score of patients in the intervention group in terms of knowledge, attitude, and practice, and that the mean post-test knowledge score was higher than the mean pretest knowledge score.

The results of current study contradict those of **Prusty et al. (2018)**, who found that women in the reproductive age group likewise had poor treatment-seeking behaviors in their study on knowledge and health-seeking behaviors. It might be because the subjects and times of data collection differed.

The current study's findings demonstrated that there were highly statistically significant differences between the practices of the women under study at the pre- and post-teaching guidelines with regard to the distribution of the women under study with

regard to their overall practice regarding leucorrhoea. According to the researchers, this demonstrated the beneficial influence of the instructional guidelines on enhancing practices. These validated the notable adjustments in the women's practice that represented the primary objectives of the teaching guidelines' adoption.

The finding of the current study revealed that there was a highly statistically significant difference and improvement between the pre- and post-teaching guidelines regarding women's practices about leucorrhoea. The finding reflected that post-teaching guidelines for the studied women had a positive effect on their practices.

The current study's findings are consistent with **Youness et al., (2017)**, who demonstrated that, with regard to general hygienic measures, the investigated sample's mean post-test score was greater than its mean pretest score. Comparably, **Abd El-Salam et al. (2018)** found that there was a statistically significant difference between female students' pre- and post-intervention knowledge of genital infection preventive measures in their study of "The Efficacy of Learning Package Regarding Vaginal Infection And Associated Risk Health Behaviors Among Female." Furthermore, **Soudabeh's (2019)** research on "The effect of education on knowledge, attitude, and practice of patients with vaginitis" revealed a significant difference in the mean performance score before and after the intervention, which is consistent with the current study's findings.

The results of the current study demonstrated a statistically significant positive link between the women under study's total knowledge and total practice scores with respect to leucorrhoea pre- and post-teaching recommendations. This demonstrated that improving the knowledge and practices of the women under study regarding leucorrhoea may be achieved with the introduction of leucorrhoea teaching guidelines. These

findings are supported by **Abd El-Salam et al, (2018)** who found that the female sample differed significantly (mostly statistically) in both total post-practice and total post-knowledge score levels following the intervention.

The results of the present study also align with those of **Mohamed et al. (2019)**, who found that healthy behaviors and satisfactory knowledge were positively correlated in their study "The health practices among female students at Benha University as regards the prevention of leucorrhoea" (hygienic).

Furthermore, the results of the current study also align with those of **Soudabeh Y. (2019)**, who investigated "The effect of education on knowledge, attitude, and practice of patients with vaginitis" and found that the program had a significant impact on the level of awareness in women's behavior and practice, as evidenced by the increase in the study group's mean knowledge and performance scores. Therefore, improving knowledge and attitude through education on health recommendations can lead to improved practice.

### **Conclusion:**

Based on the findings of the current study, aim, and hypotheses, it was concluded that the teaching guidelines improved women's knowledge and practices about leucorrhoea at reproductive age, There was a positive correlation between women' knowledge and practices regarding Leucorrhoea at reproductive age.

### **Recommendations:**

**Based on the findings of the present study, the following recommendations were suggested: -**

- Women of reproductive age should receive guidance for ongoing education about leucorrhoea based on their individual needs in order to enhance their knowledge and practices. Proper counseling can

be given to women as well as nurse care practices at the time of counseling

- To generalize the findings, the current study must be repeated with a bigger sample of women in other contexts.

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