

Vaginal Secretions among Students in the Egyptian Universities: Prevalence, Knowledge and Practices

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Abstract: This study aimed to estimate prevalence and explore knowledge and practices concerning vaginal secretions among students in the Egyptian Universities. This work was a descriptive survey study. The data were collected by two broad categories: the questionnaire and interview. Simple random sample of 292 students from most of the Egyptian Universities was collected in Mansoura University during 3rd week of Girls Egyptian Universities. Results showed that more than half of students complained of abnormal vaginal secretions 156(53.4%) and 94.2% of them had white vaginal secretion. Out of 292 students 36.6% of them seen vaginal secretion as simple matter and no problem from it and did not cause anxiety. Only 43.5 & 40.8% of the students used good practice such as changing underwear and keeping the area dry completely to overcome vaginal secretions respectively. It can be concluded that white vaginal discharge was common among university students. They thought that vaginal discharge was simple thing and no need for medical check. Recommendation: The study recommends the importance of raising community awareness about normal and abnormal vaginal secretions and good health practices among the universities female students.

Key words: Vaginal Secretions • Prevalence • Knowledge • Practice

INTRODUCTION

The problem of vaginal secretions is the most considerable complain of females during reproductive age group. Vaginal discharge constitutes major problem for many girls causing discomfort and anxiety affecting girl's quality of life. Some vaginal discharges are normal and can vary with age and with the estrogen level as in the menstrual cycle [1,2].

Vaginal secretions may be physiological or pathological. Physiological discharge is normal and healthy for women of reproductive age. The quantity and type of cervical mucus change during the menstrual cycle as a result of hormonal fluctuations. Prior to ovulation, estrogen levels increase, altering cervical mucus from non-fertile (thick and sticky) to fertile; it becomes clearer, wetter, stretchy and slippery and more alkaline (pH 8.5) to provide a favorable alkaline environment for sperm survival. The mucus also provides nutrients for sperm metabolism. After ovulation, estrogen levels fall and progesterone levels increase; cervical mucus becomes thick, sticky and hostile to sperm [3].

Pathological vaginal discharge includes secretions accompanied by itching, rash or soreness, persistent, increased discharge, burning during urination, white, clumpy discharge, a discharge that is heavier and thicker than usual and grey/white or yellow/green discharge with a foul odor [4]. The causes of abnormal vaginal discharge are infective (non-sexually transmitted) as *Candida* and bacterial Vaginosis, infective (sexual transmitted) pathogens like *Chlamydia trachomatis*, *Neisseria gonorrhoea*, *Trichomonas vaginalis* and herpes simplex virus and non-infective causes like foreign bodies (e.g. retained tampons, condoms), cervical polyps and ectopy, genital tract malignancy, fistulae, allergic reaction and douching [5].

Women with abnormal vaginal secretions do not seek treatment unless it interferes with daily routine work; the reason is being shame and not feels comfortable and very embarrassed to see male physicians. Girls believed that the health providers are not very friendly and there is a lack of privacy. Girls prefer traditional healers or pharmacists as they are more welcoming and polite and observe confidentiality and privacy [6].

Unluckily in our country there is culture of silence, hence in most of the girls there are delay in seeking assistance. Pathological discharge may be ignored by somewhere as normal and physiological discharge was considered as abnormal by some fastidious girls. Vaginal discharge accounts for 1% of all consultations in UK, more over one woman in 10 can present with vaginal discharge in the course of a year [1]. Poor access to health care, poor knowledge, or awareness and some of reproductive tract infections being asymptomatic are responsible for increased prevalence of reproductive tract infection and its complications among women [7].

The prevalence of vaginal infections among Egyptian women attending gynecology clinics at Elmanial University Hospital, Cairo University was 58.8%. Vulvovaginal Candidiasis was diagnosed in 156 women (41%), Bacterial Vaginosis was identified in 39 women (10.2%), twenty three women (6%) had Trichomonas Vaginalis and six women (1.6%) had mixed infection [8].

Health practices are important for health and wellbeing of individuals. Menstrual period is one such time when female are expected to adapt hygienic practices. A variety of factors are known to affect the behaviors. Age, culture and awareness are influencing the behaviors and practices. Age is the most influencing factors, as they influenced the choices for menstrual absorbents and other practices such as personal hygiene, bathing and washing vulva and changing of pads [9].

Juya *et al.* [10] added that there is strong association between reproductive tract infection and poor menstrual hygiene. Many studies included different levels of society reported that the prevalence of abnormal vaginal discharge as 12.1 to 30% [11,12]. The risk factors for vaginal infections include pregnancy and poor hygiene (perineal and menstrual hygiene). Lack of hand-washing habit, not using proper underwear and not practicing genital hygiene are described as situations of poor hygiene. The types of the material used during menstruation and cleaning subsequent to utilizing the bathroom are critical factors for genital infections [11]. Type of post-defecation cleaning from back to front was more common in students who had a history of abnormal vaginal discharge [12].

The complaint of vaginal discharge is very common, particularly in South East Asia where about a quarter of all adult women report this complaint. Women complaining of discharge are treated for some or all of the five common reproductive tract infections: Chlamydia trachomatis infection, gonorrhoea and trichomoniasis, which are sexually transmitted infections and bacterial vaginosis and candidiasis, which result from disturbance in the

normal bacterial flora of vagina. Majority of women bear the problems silently without seeking advice and treatment. Gynecological disorders have substantial impact on female reproductive ability, mental health and ability to work and to perform routine physical activities [13].

Nurses play a critical part in identifying woman complaining of abnormal vaginal secretions, assist in preventing gynecologic infections-as well as in ensuring that the patients comply with the suggesting clinical examinations and medications and in finding out bad hygiene habits and determining the right practices. As a part of their educative and guiding positions, nurses carry responsibilities regarding reproductive health of the youth within the scope of preventive medicine [14].

Significance of the Study: Generally, reproductive tract infections seen as a 'silent' epidemic and is one of the major public health problems. Moreover, females with self-reported symptoms of reproductive morbidity do not seek treatment due to existing taboos and inhibitions regarding reproductive health. Untreated infections can not only lead to health consequences, but females may experience social consequences in terms of emotional distress related to gynecological morbidity. Vaginal secretions constitute a considerable problem for many women causing discomfort, anxiety affecting women's quality of life and consuming considerable resources [15].

Aim of the Study: This study aimed to estimate prevalence and explore knowledge and practices concerning vaginal secretions among students in the Egyptian Universities.

The Study Questions:

1. What's the prevalence of abnormal vaginal secretions among students in the Egyptian Universities?
2. What is the knowledge of students in the Egyptian Universities regarding vaginal secretions?
3. What are the practices of students in the Egyptian Universities to overcome abnormal vaginal secretions?

MATERIALS AND METHODS:

Study Design: A descriptive survey study was utilized.

Study Setting: This study was conducted at Mansoura University during the period from 7-12 February 2015 during 3rd week of Girls Egyptian Universities.

Study Subjects: The questionnaires were distributed for 400 students during 3rd week of Girls Egyptian Universities in Mansoura University and 292 students accepted to participate in this study and completed the questionnaire. The response rate was 73%.

Tools of Data Collection: The tool used for data collection was a structured interviewing questionnaire developed by the researcher and filled by the students at interview with the researcher. It consisted of two parts:

Part One: This part was developed to collect data about general characteristics which included name, age and residence.

Part Two: was developed to estimate prevalence and explore knowledge and practice to overcome vaginal secretions and included open and closed ended questions.

Validity of the tools was revised by three experts in the field.

Ethical Considerations of the Study: Approval was obtained from Vice Dean of Environment and Community Affairs and Directors of University Hostel. An informed consent was obtained from the students after explaining the aim of the study. They were reassured about the confidentiality of the obtained information. Students were informed about their rights to refuse participation or withdraw at any time.

Field Work:

- The actual fieldwork of the study was conducted for one week period, 7 to 12 February 2015.
- Data was collected from students during their activity participations. The researcher attended from 9 am to 4 pm.
- Explanation of the nature and aim of the study was discussed with all students participated in the study.
- The researcher used the previous tools to collect data. Students were individually asked to participate and the questionnaires were distributed and collected from them. Only 292 of students completed the questionnaire and returned back.
- The students were permitted to ask any interpretation or explanation.
- The student took from 20 to 25 minutes to complete the questionnaire.

Statistical Analysis: The statistical analysis of data was done by using SPSS program (statistical package for social science) version 16. The data was tabulated and presented as frequency and proportion for qualitative data.

RESULTS

Table (1) shows that, more than two third of students' age was ranged from 21-23 years old (71.9%) and (68.2%) were from rural areas.

Table (2) presents that, more than half of students complained of vaginal secretions (53.4%) and most of them had white discharge (94.2%). Those students complained from vaginal secretions that had medium odor and consistency thick and creamy among (53.8%, 32.7% & 33.3% respectively) of them. Itching in external genital organ and redness were the common symptoms associated with vaginal discharge which constituted (73.7% & 18.6% respectively).

Table (3) illustrates students' knowledge regarding vaginal secretions. Out of 292 students 36.6% of them stated that, it was a simple matter and no problem from it and did not cause anxiety for them and more than half of them agreed with vaginal secretions did not constitute a serious problem if treated quickly under the supervision of a doctor (52.7%).

Table (4) illustrates distribution according to time and causes of not seek medical consultation regarding vaginal secretions among the students as 29.1% of them went to medical examination immediately after the onset of abnormal vaginal secretions and 26.4% did not think of going to the doctor permanently. Shamed from exposure of genital area and thought that vaginal discharge was simple thing and didn't need going to physician were the most prominent reasons for didn't consultation doctor which constituted (57.8% & 48.9% respectively).

Table (5) shows self-practices to overcome the abnormal vaginal discharge among the students. Careful to constantly change underwear, keep the area dry completely after rinse, rinse the outside part of vulva with warm water, wear cotton underwear and bitch about made of synthetic fibers and clean the area in the direction from front to back were the most prominent practices which constituted (43.5% , 40.8% , 37.3% , 35.6% & 34.9% respectively).

Table (6) shows genital hygiene among the study sample. It is obvious that, more than half of the students (63.7%, 61.6% & 62.3% respectively) cleaned genital area from front to back and dried it and used sweat for hair

Table 1: Distribution of age and residence of the studied students

Items	No (n=292)	%
Age (yrs)		
18-20	78	26.7
21-23	210	71.9
More than23	4	1.4
Residence		
Rural	199	68.2
Urban	93	31.8

Table 2: Prevalence and characteristics of self-reported vaginal secretions in last month among the studied students

Items	No	%
Self-reported vaginal secretions in last month		
Complain of vaginal secretions		
▪ Yes	156	53.4
▪ No	136	46.6
Color of vaginal secretions (n=156)		
▪ Yellow color sometimes tending towards green or gray	9	5.8
▪ White.	147	94.2
Consistency of vaginal secretions		
▪ Thick like cheese	51	32.7
▪ Liquid such as creamy	52	33.3
▪ Thin	53	34
Odor of vaginal secretions		
▪ Unpleasant and pungent	20	12.8
▪ Medium	84	53.8
▪ Odorless	52	33.3
Symptom associated with vaginal secretions#		
▪ Itching in external genital organ	115	73.7
▪ Redness	29	18.6
▪ Pain in urination	25	16
▪ Lower abdominal pain	22	14
▪ Drop of blood between menses	26	16.7

#Multiple responses are allowed

Table 3: Frequency distribution of students' knowledge regarding vaginal secretions

Items	No (n=292)	%
Simple matter and no problem from it and does not cause anxiety.	107	36.6
Vaginal secretions are a serious problem.	71	24.3
It affects general health and I must go for investigation.	39	13.4
Easy to treat vaginal discharge and do not constitute a serious. problem if treated quickly and under the supervision of a doctor.	154	52.7
If treatment is neglected infection will be transmitted to the internal reproductive organs and affect the reproductive health.	134	45.9
It is possible to prevent vaginal discharge.	89	30.5
If I wait the vaginal discharge will end without treatment.	49	16.8
I can treat vaginal discharge myself.	36	12.3
Lead to low self-esteem.	21	7.2

Table 4: Distribution of time and causes of not seeking medical consultation regarding vaginal secretions among the students

Items	No	%
The time between the onset of abnormal vaginal secretions and seeking medical advice:		
▪ Going for medical examination immediately for correct diagnosis and determine the type of microbe.	85	29.1
▪ Waiting for some time to try to cure myself without going to the doctor.	060	20.5
▪ Going for medical examination when increasing secretions and worsen my condition.	70	24
▪ Do not think of going to the doctor permanently.	77	26.4
Reasons for didn't seeking consultation doctor (147)#		
▪ Vaginal discharge is considered something embarrassing in the community.	33	22.4
▪ Simple thing and don't need going to physician.	72	48.9
▪ Lack of awareness about the abnormal vaginal discharge.	49	33.3
▪ Shamed from exposure of genital area.	85	57.8
▪ Shamed from male physician.	62	42.2

#Multiple responses are allowed

Table 5: Frequency distribution of students self-practices to overcome the abnormal vaginal secretions

Self-Practices to overcome the Abnormal Vaginal secretions#	No (n=156)	%
Rinse the outside part of vulva with warm water	109	37.3
Clean the area in the direction from front to back.	102	34.9
Keep the vulva dry completely after rinse.	119	40.8
Wear cotton underwear down and bitch about made of synthetic fibers.	104	35.6
Avoid wearing tight underwear.	80	27.4
Careful to constantly change underwear.	127	43.5
Avoid wearing jeans trousers because they cause a rise in body temperature and stimulate the growth of fungus.	64	21.9
Do not use scented sprays for that area.	87	29.8
Maintain a diet low carbohydrates and sugars, which contribute to the proliferation of microbes.	49	16.8
Eating too much milk that causes the proliferation of good bacteria that impede the proliferation of fungi and bacterial infections.	52	17.8

#Multiple responses are allowed

Table 6: Frequency distribution of the practice of genital hygiene among the studied students

Items	No	%
Daily hygienic practices of genitalia		
▪ Front to back cleaning of genital area	186	63.7
▪ Back to front cleaning of genital area	64	21.9
▪ Tape bath	42	14.4
▪ Drying of genital area	180	61.6
▪ using perfume after washing	37	12.7
Bathing during menses		
▪ I always having shower every day during menses	78	26.7
▪ Every 2 days	90	30.8
▪ Every 3 days	66	22.6
▪ I never take a bath during menses	58	19.9
Under wear drying		
▪ Exposure to the sunshine	266	91.9
▪ Dry inside home	26	8.9
▪ Ironing underwear before use	13	4.5
Type of perineal pads which were used during menses		
▪ Disposable sanitary pad only	266	91.1
▪ Cotton pad	0	0
▪ Both	26	8.9
Numbers of change sanitary pad during menses per day		
▪ One	45	15.4
▪ Two	90	30.8
▪ Three	58	19.9
▪ As needed	99	33.9
Methods of hair removal in genital area		
▪ Sweet	182	62.3
▪ Cream	64	21.9
▪ Using hair cutting machine	79	27.1

#Multiple responses are allowed

removal of genital area. The majority of them dried their underwear through exposure to the sunshine (91.9%). Regarding hygienic care during menstruation; 30.8% of the students took bath during menses every 2 days, 33.9% changed sanitary pad during menses as needed and the majority of them used disposable sanitary pad (91.1%).

DISCUSSIONS

The current study was a descriptive survey study, which aimed to estimate prevalence and explore knowledge and practices concerning vaginal secretions among students in the Egyptian Universities. The results of this study answered the study questions and revealed that more than half of the students complained from abnormal vaginal secretions. Vaginal secretion was simple matter and no problem from it and did not cause anxiety among more than one third of students. Careful to constantly change underwear, keep the area dry completely and rinse the outside part of vulva with warm water were the most prominent practices to overcome abnormal vaginal secretions.

Concerning to the prevalence and characteristics of vaginal secretions, the current study results revealed that more than half of the students complained from abnormal vaginal secretions (53.4%). The majority of the students with vaginal secretion had white discharge. In addition, more than half of them had medium odor vaginal secretions. Moreover, more than two thirds of them had itching in external genital organ and low percentage had redness, pain in urination and lower abdominal pain as common symptoms associated with vaginal discharge.

In the same line Patel *et al.* [16] found higher percentage of vaginal discharge in young unmarried female age group. While the prevalence rate of vaginal discharge was 24.6% among Indian woman and very low in un married woman (4.9%) and commonest colour of the discharge was white (97%) followed by yellow (2.95%). Also the associated symptoms were itching in genital area, pain in lower abdomen and burning during micturition [17].

In contrast with study by Ardahan and Bay [18] the reported frequencies of vaginal discharge in first and fourth grade students of the nursing college were 24.7% and 12.1%, respectively. Also genital infection was identified among 13% of Turkish students and this may be due to difference in culture and awareness and shyness among eastern unmarried female [14]. In disagreement

with our results Mohamed [19] study in Benha, Egypt as all students experiencing reproductive tract infection symptoms had abnormal vaginal discharge and itching.

In the contrary, Prusty and Unisa [20] found that among the adolescent women, 11% reported having abnormal vaginal discharge in the last three months of the survey. Low backache (8 %), pain during sexual intercourse (5 %), pain in the lower abdomen not related to menses (5%), itching or irritation over the vulva (4%), pain on urination or defecation (2.5 %) and boils/ulcers/warts around the vulva (1.6%) were the major problems reported by married adolescents. While 21.5% of the married women in rural area of surendranager, India complained from curd like whitish vaginal discharge and 8.8% vulval itching, 2.5% lower abdominal pain and 3.3% burning micturition in the study done by Thekdi *et al.* [21]. In same line the self-reported symptoms of reproductive tract infection among Chinese women were whitish discharge with odor (74.1%), perineal itching (60.2%), lower abdominal pain (22.2%) and painful urination (13%)[6].

In relation to knowledge and health seeking behaviors of students regarding vaginal secretions, more than one third of the students seen it as simple matter and no problem from it and did not cause anxiety for them. Also shamed from exposure of genital area and thought that vaginal discharge was simple thing and didn't need going to physician were the most prominent reasons for didn't consult doctor. This result is in accordance with Rizvi and Luby [22] study results as participants reported that vaginal discharge patients did not seek treatment unless it interfered with daily routine work and the reason being shame and fear.

In accordance with Thekdi *et al.* [23] the reproductive tract infections were still considered as social stigma that affects health seeking behavior. Also, Kanbergi [24] added that shyness among women and feeling that no treatment was required prevented them from seeking treatment. So they either prolonged or neglected going for treatment of reproductive tract infections. Thus lack of awareness among women had significant role in the prevalence of reproductive tract infections. In the same line with the present study Ilankoon *et al.* [25] reported that women in reproductive age group were not seeking health advice for their vaginal discharge and considered it as normal condition.

Regarding genital hygienic practice to overcome vaginal secretions among the students complaining from abnormal vaginal discharge, only more than one third of

the students used good practice such as changing underwear, wearing cotton underwear and keeping the area dry completely to overcome vaginal secretions. Also, in relation to genital hygienic practice among all students in the study sample, more than half of the students cleaned genital area from front to back and dried it and used sweat for hair removal in genital area while less than one quarter of them cleaned genital area from back to front. Also the majority of them dried their underwear through exposure to the sunshine. Regarding hygienic care during menstruation, about one third of the students took bath during menses every 2 days and changed sanitary pad during menses as needed while the majority of them used disposable sanitary pad.

In contrast the study done in Turkey found that the University students whom age ranged of 17-27 years preferred cotton underwear (93.4%) and 91.1% of students took bath during menstruation and 88.7% drying genital area. Similarly front to backward genital cleaning and changed pads 6 times or more a day was favored by more than half of the students. Also 97.6% used "pads" during menstrual periods [14].

CONCLUSIONS

White vaginal secretions with medium odor and associated with itching in external genital organ were common among Egyptian University students in the study sample. Shamed from exposure of genital area and thought that vaginal secretions were simple thing and didn't need going to physician were the common reasons for not consulting doctor. Although the higher percentage of the students thought that vaginal discharge was easy to treat and did not constitute a serious problem if treated quickly under the supervision of a doctor more than two third of them waiting for some time to try to cure themselves without going for medical examination when increasing secretions and worsen the condition and did not think of going to the doctor permanently. Only more than one third of the students using good practice such as changing underwear and keeping the area dry completely to overcome vaginal secretions.

Recommendation: Based on the current study findings, the study recommends for raising community awareness about normal and abnormal vaginal secretions and good health practices among the students in the universities. Also further studies are needed in this topic with making investigation to detect causes of abnormal discharge among students.

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