

Awareness of Women Regarding Vaginal Discharge

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Abstract:

The present study **aimed** to assess women awareness regarding vaginal discharge.

Study design: Cross sectional design was utilized.

Study sitting: The study was conducted at 17 faculties at Mansoura University.

Study sample: A total of 500 employees selected by systematic random sample.

Tool of data collection: A structured interviewing questionnaire was used. It included five parts to assess general characteristics, obstetrical history, knowledge and health seeking behavior regarding vaginal discharge and the incidence of abnormal vaginal discharge among the studied sample.

Results: The finding of this study revealed that less than quarter of the employees complained of abnormal vaginal discharge. More than half of studied women had bad knowledge score. More than half of them did not consider vaginal discharge as a serious problem that need medical examination. There was a highly statistical significant relation between total knowledge score level and using reusable sanitary pad and abnormal vaginal discharge.

Conclusion: The abnormal vaginal discharge was common among women at Mansoura University. In addition, the women had poor awareness regarding vaginal discharge.

Recommendations: This study recommended that the health care provider should prepare and implement health programs for raising the community awareness about vaginal discharge characteristics and early medical checkup that will improve hygienic practices and therefore decrease abnormal vaginal discharge.

Keywords: Vaginal discharge, Awareness, Knowledge, Practices.

I. Introduction

The complaint of abnormal vaginal discharge is common among women in the reproductive age. The vaginal discharge may be due to physiological or pathological condition. The physiological discharge is healthy and normal for the women of the reproductive age. During the menstrual cycle, the type and the quantity of the cervical mucus changes (Sobel, 2011). Vaginal discharge that differs in odor, color, consistency or significantly decreases or increases in amount, may be due to an underlying problem like an infection (Hirsch, 2013).

Abnormal vaginal discharge (AVD) is not a disease for itself but it is a symptom of other diseases as reproductive tract infections and sexual transmitted diseases, and if it isn't treated well it may lead to severe complications as pelvic inflammatory disease, ectopic pregnancy, congenital anomalies, prognosis of genital tract malignancy, so early detection and treatment of abnormal vaginal discharge decreases the maternal morbidity and mortality (Maria et al., 2013).

The causes of abnormal vaginal discharge may be infective or non-infective. The infective causes may be (non-sexually transmitted) as bacterial vaginosis and candida or (sexual transmitted) like neisseria gonorrhoea, trichomonas vaginalis. On the other hand, the non-infective causes of abnormal vaginal discharge are foreign bodies (e.g. condoms, retained tampons), genital tract malignancy, fistulae, cervical polyps, allergic reaction and douching. Others causes like the use of antibiotic, steroid or birth control pills, diabetes, douches, scented soaps or lotions, bubble bath, pelvic inflammatory disease (PID), pelvic infection after surgery, vaginal atrophy (Web med., 2015).

The prevalence of abnormal vaginal discharge was 26.3% in the rural area of India (Komal et al., 2014). Abnormal vaginal discharge (AVD) is symptom of reproductive tract infections (RTIs) and sexual transmitted diseases (STDs). WHO estimates that there are more than 340 million new patients of sexually transmitted infections every year and 75-85% of them from the developing countries and lead to severe complication on the women health (Kumar & Padmaja 2016). The women who complain of abnormal vaginal discharge don't seek medical examination except the complaint become intolerable and hinder the daily work, this may be due to modesty from reveal the genital area or felling shame to be examined by male doctor (Li et al., 2010).

The nurse has important role in increasing the awareness of women regarding the reproductive tract infection; causes, prophylactic measures, complications and signs of infection. Also nurse should instruct the woman how to differentiate between the normal and abnormal vaginal discharge and healthy behaviors and ask the woman to avoid the unhealthy behavior as using vaginal douch, using perfumes or any unhealthy herbal treatment (**British Medical Journal, 2013**).

Significance of the study

The incidence of abnormal vaginal discharge is high particularly in developing countries with low socioeconomic level as in Egypt (**Abbas et al., 2016**). Abnormal vaginal discharge (AVD) is the most common symptom of reproductive tract infections (RTIs) and sexual transmitted diseases (STDs). The women's awareness about abnormal vaginal discharge has a direct effect on their attitudes and practices. Health practices are important for health and wellbeing of women. Abnormal vaginal discharge may be more likely to develop in women who do unhealthy practices which affect their reproductive health negatively as using vaginal douche and sprays (**Sobel, 2015**) & (**Shaaban et al., 2013**). The misconception of the woman about the causes, correct health behavior, self-prevention and culture of silence regarding abnormal vaginal discharge, all of these lead to increase the incidence of abnormal vaginal discharge and its complications (**Li et al., 2010**). So this study was conducted to assess the awareness of women regarding vaginal discharge.

Aim of the study

This study aimed to assess women awareness regarding vaginal discharge.

Research questions

1. What's the women's awareness regarding vaginal discharge?
2. What are the health seeking behavior which taken by the women when complaining of abnormal vaginal discharge?
3. Dose there are relations between women's hygienic practices and complaining of abnormal vaginal discharge?

Subjects and Methods

1. **Study design:** Across sectional study was conducted.
2. **Study Setting:** The study was carried out in 17 faculties at Mansoura University.
3. **Study Subjects:** The study was conducted on 500 employees selected by systematic random sample. All married, virgin, widows and divorced women at Mansoura University. The women who were in vacations and who refused to participate in the study were replaced by other

Sample size: The calculated sample size of the study is 384, using the following formula (**Daniel, 1999**).

$$n = \frac{Z^2 * P * (1-P)}{d^2}$$

Where Z = 1.96 for 95% confidence level.

p = expected prevalence (50%).

d = precision (Margin of error) = 0.05

The researcher increased the sample size to 500 women to increase the accuracy of the study.

Total number of women at Mansoura University is **2763**women and the total number of faculties at Mansoura University is **17** faculties, (**Statistical Map of Mansoura University 2012-2013**).

The number of women from each faculty was calculated according to their percentage to the total number of all women at Mansoura University:

$$n = \frac{\text{Number of women at the faculty}}{\text{Total number of all women at Mansoura University (2763)}} \times 500$$

Sampling type: systematic random sample.

Tool of data collection

Structured interviewing questionnaire was designed by the researcher to collect data. It consisted of 5 parts:

Part 1: was designed to assess the general characteristics of the women such as (age, marital status...etc.).

Part 2: was designed to assess the obstetric history of the women as (number of pregnancy, number of children and mode of delivery....etc.).

Part 3: was designed to assess the knowledge regarding vaginal discharge. Scoring system for employee's knowledge:

Each correct answer was scored =1 and incorrect answer was scored=0. The total score of knowledge was 19 points, which represents 100%. Final knowledge assessment score was as good knowledge >75%, fair knowledge from 50% to 75%, and poor knowledge less than 50%.

Part 4: was designed to assess the complaining of abnormal vaginal discharge and its characteristics among the studied women.

Part 5: was designed to assess women's hygienic practices.

Pilot study

A pilot study was carried out on 10 % of the sample to test applicability and clarity of the tool, the tool were tested to confirm that the questions were suitable, easy to understand, cover the aim of the study and carry the same meaning which designed for it.

Validity: The internal validity of the tool was evaluated by five experts in the field and the notices were considered.

Reliability: Cronbach's alpha was calculated for knowledge tool equal 0.716 and calculated for practices equal 0.731

II. Field work

- The researcher attended at each faculty at Mansoura University from 9:30 am to 1:30 pm for three days per week, till complete the predetermined sample size.
- Data collection extended from March 2015 to October 2015.
- The researcher went to all faculties and explained the aim of the study to the administration and took permission to conduct the study and took menu of the employee's names and took the sample from it by systematic random sample.
- The researcher met every employee and introduced herself to each one.
- The researcher explained the aim of the study to the employees to obtain the informed written consent to be involved in the study.
- Complete instructions regarding answering the questionnaire sheet were given.
- The sheet took 25 to 35 minutes to be completed.

Ethical consideration

Ethical approval was obtained from the research ethics committee of the faculty of Nursing – Mansoura University. An official permission to conduct the study was obtained from the responsible administration at Mansoura University. All relevant ethical aspects were considered for ensuring employee's privacy and confidentiality of the collected data through; gaining written consent for participation in the study, explaining the purpose of the study and right to refuse to continue participation.

Statistical analysis

The data were collected, coded, computed, and statistically analyzed by using SPSS software program (version 16.) the data were presented in tables and graphs as frequency and percentage. The comparison between groups was done using chi square test (χ^2) and the difference is considered significant at $P \leq 0.05$.

III. Results

Table (1): Frequency Distribution of General Characteristics among Women

Items	No. (n=500)	%
Age groups(in years):		
Less than 25	65	13.0
25-30	131	26.2
31-36	138	27.6
37-42	79	15.8
More than 42	87	17.4
Marital status:		
Single	48	9.6
Married	415	83.0
Divorced	22	4.4
Widow	15	3.0
Educational level:		
Cannot read and write	9	1.8
Basic	15	3.0
Secondary	12	2.4
Technical	236	47.2
University	218	43.6
Others	10	2.0

Religion:		
Muslim	488	97.6
Christian	12	2.4
Occupations:		
Officers	425	85.0
Cleaner	75	15.0
Residence:		
Rural	275	55.0
Urban	225	45.0

Table (1): Shows that 27.6% of the women's age ranged from 31 -36 years old, and 83% of them were married. Concerning the level of education, it was found that 47.2% of them had technical education and 1.8% of them couldn't read and write. The majority of women were Muslim and officers (97.6%, 85% respectively). Regarding the residence, it was found that 55% of the women from rural areas.

Table (2): Frequency Distribution of the Incidence and Characteristics of Abnormal Vaginal Discharge among the Women

Items	No.(n=500)	%
Complain of abnormal vaginal discharge		
In the past years		
Yes	349	69.8
No	151	30.2
At the time of the study		
Yes	117	23.4
No	383	76.6
Characteristics of abnormal vaginal discharge (n=117)		
The color of vaginal discharge		
white	60	51.3
yellow	46	39.3
brown	5	4.3
red	4	3.4
black	2	1.7
The beginning of the discharge		
one week	22	18.8
2weeks	7	6.0
one month	26	22.2
more than 2 month	62	53.0
The consistency		
Thick	63	53.8
Creamy	41	35.1
Thin	13	11.1
The odor		
cruddy	37	31.6
moderate	43	36.8
odorless	37	31.6
Associated symptoms		
Itching:	82	70.1
Lower abdominal pain	86	73.5

Table (2) Presents that more than two third of the women complained of abnormal vaginal discharge in their last years (69.8%). The incidence of abnormal vaginal discharge at the time of the study was (23.4%). The color of vaginal discharge was white among 51.3% of them. Also, more than half of the women complained of abnormal vaginal discharge for two months, and had thick discharge (53%, 53.8% respectively) and 11.1% of them reported that it was thin. More than one third of them reported that the discharge had a moderate odor (36.8%). More than two third of women complained from itching and lower abdominal pain (70.1%, 73.5% respectively).

Table (3): Frequency Distribution of Knowledge regarding Vaginal Discharge among the Women

Items	Correct answer (n=500)		In Correct answer	
	NO.	%	No.	%
Characteristics of normal vaginal discharge:				
Color	272	54.4	228	45.6
Consistency	310	62.0	190	38.0
Odor	337	67.4	163	32.6
Abnormal vaginal discharge:				
Color	235	47.0	265	53.0
Causes	236	47.2	264	52.8
Differentiation of vaginal discharge during month	182	36.4	318	63.6
Periods of increased abnormal vaginal discharge	253	70.6	147	29.4
Causes of increased abnormal vaginal discharge in pregnancy	224	44.8	276	55.2
Changes in vaginal discharge which indicate diseases	313	62.6	187	37.4
The cause of cheesy white vaginal discharge accompanied with burning sensation and edematous vulva and vagina	121	24.2	379	75.8
Risk factors for increasing vulnerability to fungal infection	171	34.2	329	65.8
Signs and symptoms of fungal infection	278	55.6	222	44.4
Prophylactic measures from vaginal infection	429	85.8	71	14.2
Condom decrease spread of infection	299	59.8	201	40.2
Vaginal infection may lead to preterm labor	200	40	300	60
The bloody vaginal discharge at the end of pregnancy may be a labor show	369	73.8	131	26.2
The yellow and green color of vaginal discharge indicate chronic vaginal infection	266	53.2	234	46.8
Trichomonas				
Signs	81	16.2	419	83.8
Transmitted through sexual intercourse	67	13.4	433	86.6

Table (3) Illustrates that more than half of women had correct answer regarding the color of normal vaginal discharge, the consistency of normal vaginal discharge and odor of normal vaginal discharge (54.4%, 62% & 67.4% respectively). More than half of women had incorrect answer regarding vaginal discharge changes during month, the colors of abnormal vaginal discharge, the causes of abnormal vaginal discharge and the causes of increased vaginal discharge in pregnancy (63.6%, 53%, 52.8% & 55.2% respectively). More than half of women had correct answer regarding the changes in vaginal discharge which indicate diseases, signs and symptoms of fungal infection, condom decrease spread of infection, the yellow and green color of vaginal discharge indicate chronic vaginal infection (62.6%, 55.6%, 59.8% & 53.2% respectively). The majority of the studied group had correct answer regarding the prophylactic measures from vaginal infection and the bloody vaginal discharge at the end of pregnancy may be a labor show (85.8% & 73.8%). The majority of the studied group had incorrect answer regarding the cause of cheesy white vaginal discharge accompanied with burning sensation and edematous vulva and vagina, risk factors for increasing vulnerability to fungal infection, vaginal infection may lead to preterm labor, signs of trichomonas and trichomonas transmitted through sexual intercourse (75.8%, 65.8%, 60%, 83.8% & 86.6% respectively).

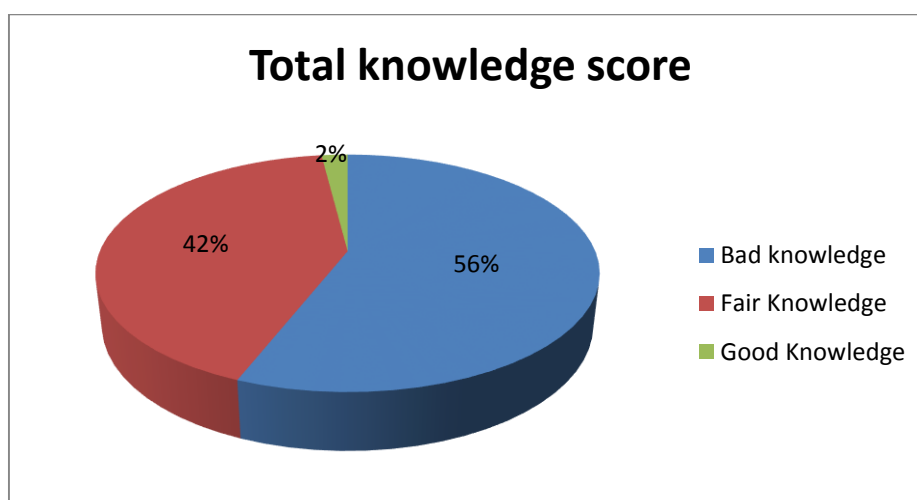


Figure (1) Frequency Distribution of Women according to Level of Knowledge about Vaginal Discharge.

Table (4): Personal Hygienic Practices among Women

Items	No. (n=500)	%
Daily hygienic practices of genitalia		
External washing.	171	34.2
Internal washing with finger.	179	35.8
Douching.	47	9.4
Sitz bath	72	14.4
Wash genital area and sprinkle perfumes.	31	6.2
Bathing:		
Every day	389	77.8
Every 2 days	79	15.8
Every 3 days	20	4.0
Every week	12	2.4
Hand washing before and after cleaning genital area		
Yes	71	14.2
No	429	85.8
Use cotton underwear		
Yes	348	69.6
No	152	30.4
The preferred underwear		
Tight	31	6.2
Wide	70	14.0
Comfortable	399	79.8
Changing under wear:		
Every day	268	53.6
Every two days	39	7.8
Every week	4	0.8
More than one per day as needed	189	37.8
Remove the genital hair		
Yes	481	96.2
No	19	3.8
The way of removal		
Sweat	349	72.6
Hair removal cream	76	15.8
Hair removal machine	56	11.6
The time interval of hair removal		
Every 20 days	146	30.4
Every month	283	58.8
Every 2 month	34	7.1
More 2 month	18	3.7

Table (4) Shows that 35.8% of the women used internal washing with finger when they cleaned the genitalia and 34.2% were washing the genitalia externally. Regarding to the utilized underwear, 69.6% of them used cotton underwear and (53.6%) changed it daily. Regarding to hair removal, the majority of them removed genital hair (96.2%) through utilized sweat (72.6%).

Table (5): Women's Hygienic Practices during Menstruation

Items	No.(n=500)	%
Bathing during menses:		
Taking shower every day during menses	333	66.6
Every 2 days	92	18.4
Every 3 days	20	4.0
never take a bath during menses	55	11.0
Sanitary pads:		
Disposable sanitary pad	331	66.2
Reused homemade pad or old cloth pad	88	17.6
Both	81	16.2
Change sanitary pad per day		
One	28	5.6
Two	137	27.4
Three	99	19.8
As needed	236	47.2
Washing of reused homemade pad before reused		
Water and soap	78	46.15
Water and soap and boiling	91	53.84

Table (5) Shows that more than two third of the women practiced daily shower during menstruation and used disposable sanitary pad during menses (66.6% and 66.2% respectively), versus 17.6% of them used reusable homemade pad or old cloth pads. More than half of those who were using reusable homemade pads washed them with soap and water and boiled them.

Table (6): Women's Behavior Regarding Early Seeking Medical Examination when Complaining of Abnormal Vaginal Discharge

Items	No. (n=500)	%
Seeking medical examination when complain of abnormal vaginal discharge		
Yes	324	64.8
No	176	35.2
Causes of seeking medical examination		
Fear of serious disease	104	32.09
In ability to tolerate abnormal symptoms	93	28.7
The case become worse with time.	70	21.6
Self-Administered drugs without benefit	27	8.4
Improved after had administered medication	20	6.17
Fear of affected with sexually transmitted diseases	10	3.08
Causes of not seeking medical examination		
Abnormal vaginal discharge is social stigma	4	2.27
It is simple and there is no need for examination	67	39.2
Lack of awareness	30	17.6
Shyness from reveal the genitalia	75	42.6

Table (6): Illustrates that 64.8% of the women were sought medical advice when they complained of abnormal vaginal discharge, the most common cause for seeking examination was fear from serious diseases followed by in ability to tolerate the abnormal symptoms (32 % & 28.7% respectively). More than one third of the women didn't seek medical examination(35.2%), and the causes were the abnormal vaginal discharge was simple and no need for examination, feel shyness from reveal the genitalia, lack of awareness and considered abnormal vaginal discharge as social stigma among (39.2%, 42.6%,17.6% & 2.2% respectively).

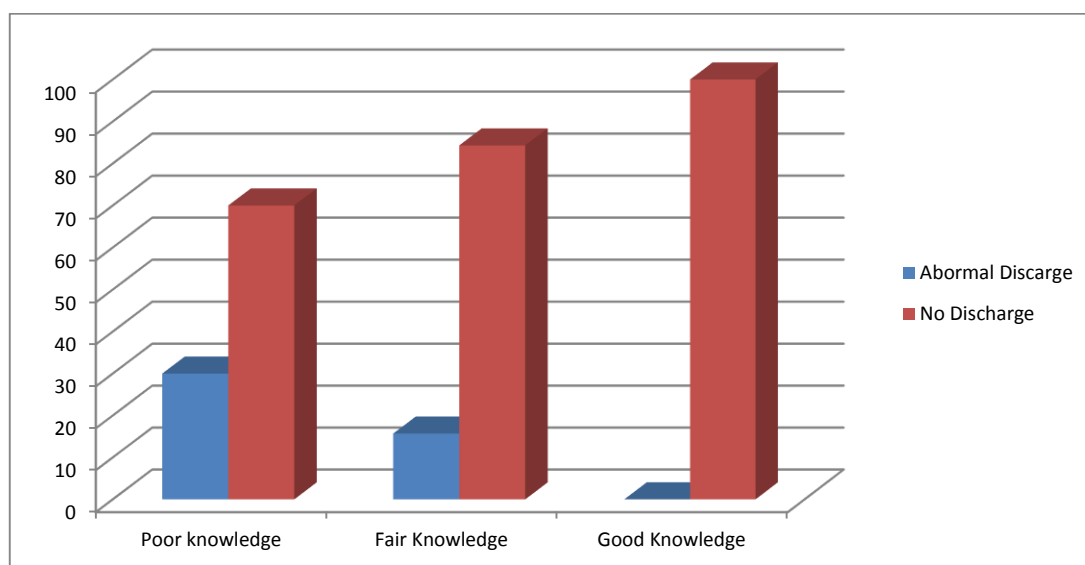


Figure (2): Correlation between the Level of Knowledge and Complaining of Abnormal Vaginal Discharge.

Table (7): Correlation between Causes of Seeking Medical Examination and Complaining of Abnormal Vaginal Discharge.

Causes of Seeking Medical Examination	normal vaginal discharge		Abnormal vaginal discharge		Significance test
	No.(n=254)	%(100)	No. (n=70)	%(100)	
Fear of serious disease	93	89.4	11	10.6	X²= 21.96 P= 0.000*
Cannot bear symptoms	60	64.5	33	35.5	
Fear of sexual transmitted diseases	10	100	0	0.00	
No improvement after self-treatment	19	70.4	8	29.6	
Improved before, after taking medical treatment	16	80.0	4	20.0	
Case become worse with the time	56	80.0	14	20.0	
Total	324				

Table (7) Shows that, there was a statistical significant relation between complaining of vaginal discharge and causes of seeking medical examination. The majority of women who sought examination because they fear from serious diseases had no abnormal vaginal discharge (89.4%). All the women who fear from sexual transmitted diseases hadn't abnormal vaginal discharge, more than one third (35.5%) of women who didn't seek

examination till they cannot tolerate the abnormal symptoms were the most women who had abnormal vaginal discharge.

Table (8): Correlation between Complaining of Abnormal Vaginal Discharge and Menstrual Hygienic Practices.

Items	Normal vaginal discharge		Abnormal vaginal discharge	
	No. (n=383)	%	No. (n= 117)	%
Times of change sanitary pad in the day				
One	18	64.3	10	35.7
Two, Three and as needed	365	77.4	107	22.6
X²=2.51				
P=0.113*				
Bathing during menses				
every day during menses	254	76.3	79	23.7
After 2 days from the beginning of menses	81	88.8	11	12
After 3 days from the beginning of menses	15	75	5	25
Never take a bath during menses	33	60	22	40
Total 500	383	100%	117	23.4
Sanitary pads				
Disposable sanitary pad	264	79.8	67	20.2
Reused homemade pad or old cloth pad	56	71.8	22	28.2
Both	63	69.2	28	30.8
Total	383	100	117	100
X²=5.678 P=0.05				

Table (8) Shows that there was statistical significant difference between types of sanitary pad utilized and the presence of abnormal vaginal discharge ($\chi^2=5.6$, $p=0.05$). There was increase in the abnormal vaginal discharge in those women who used reusable sanitary pads than those who used disposable sanitary pads. There was no statistically difference between abnormal vaginal discharge and changing sanitary pads per day ($\chi^2=2.51$, $p=0.113$).

Table (9): Correlation between Complaining of Abnormal Vaginal Discharge and Hygienic Practices followed by the Women

Hygienic Practices	Normal vaginal discharge		Abnormal vaginal discharge		Significance test
	No. (n=383)	%	No. (n=117)	%	
Daily hygienic practice of genitalia					
External washing	141	36.8	30	25.6	$\chi^2= 9.817$ P 0.044*
Internal washing with fingers	127	33.2	52	44.4	
Douching	40	10.4	7	6.0	
Sit in bath	54	14.1	18	15.4	
Wash genital area and sprinkle perfume	21	5.5	10	8.5	
Total	383	100.0	117	100.0	
Use cotton underwear					
No	109	71.7	43	28.2	
Yes	274	78.7	74	21.3	

Table (9) shows that, there was statistical significant relation between complaining of abnormal vaginal discharge and genital hygienic practice of women ($\chi^2= 9.817$, P 0.044).Abnormal vaginal discharge was decreased in the women who used external washing of genitalia as it represents 25.6% in contrast it was 44.4% in those who made internal washing with fingers.

IV. Discussion

The aim of this study was to assess the awareness regarding vaginal discharge among women. It was achieved through answering the research questions. More than half of the women had bad knowledge about vaginal discharge. About two thirds of women went for medical examination when they complained of abnormal vaginal discharge and more than one third of them did not seek medical examination due to various causes such as shyness from reveal the genitalia and abnormal vaginal discharge was simple problem from their point of view. There was a highly statistical significant relation between women level of knowledge and using reusable sanitary pad and presence of abnormal vaginal discharge.

Concerning to the knowledge about vaginal discharge, more than half of the women had bad knowledge score, more than one third had fair knowledge score and only two percent of them had good knowledge score level, this result was in the agreement of *Li et al., (2010)* who conducted a descriptive study among rural women in China aimed to assess knowledge, practice, and prevalence of reproductive tract infection, they assured that the level of knowledge regarding reproductive tract infection was very low among the studied group.

In the same line, **Dube & Sharma (2012)** conducted a comparative study to evaluate the knowledge, attitude and practice regarding reproductive health among urban and rural girls in India, the study was carried out with the aim to assess the level of awareness towards reproductive health. The results revealed that there was decrease of basic awareness regarding reproductive health and the majority of the respondents had a lot of ignorance.

Also, the study findings was in agreement with **Suja & Aruna (2014)** who assured in their descriptive study about the knowledge on reproductive tract infection among married women at India that 64% of the studied group had inadequate knowledge on reproductive tract infection. Also the study findings was in agreement with **Mohamed et al (2013)** who conducted a descriptive study to evaluate the health practices of respondents regarding to the prevention of the genital tract infection in Benha University, Egypt, they assured in their study that the most of the students had unsatisfactory knowledge score level about genital tract infection.

Moreover, the study findings was in agreement with **Hegde et al., (2013)** who assured that knowledge regarding reproductive tract infection was poor while the prevalence of reproductive tract infection was high (26.8%) and the treatment-seeking behavior was inadequate. On the other hand the current study was in contrast with **Şatroğlu et al., (2012)** who conducted a qualitative study; to determine, the knowledge, attitudes and practices of the studied group regarding vaginal discharge and vaginal douche. Their results showed that majority of the studied group had stated that they enabled to differentiate between the normal and abnormal vaginal discharge.

Concerning to seeking medical examination, two thirds of the women sought medical examination when complained of abnormal vaginal discharge. The most prominent causes for seeking medical examination were fear from serious diseases among one third of them and inability to tolerate the abnormal symptoms among more than quarter of them. On the other hand, one third of the studied group did not seek medical advice when they had complained of abnormal vaginal discharge, more than one third of them didn't seek examination because they considered that the abnormal vaginal discharge as simple problem and there was no need for examination, others; more than one third of them were not examined because they feel shyness from reveal the genitalia.

This finding in agreement with **Li et al., (2010)** study results among rural women in China to evaluate knowledge, practice and prevalence of genital tract infection, results showed that women who complained of abnormal vaginal discharge did not seek medical treatment unless it interfered with daily routine work, the reason was being shame and very embarrassed to reveal the genital area. Also the present study is agreement with **Prusty & Unisa (2013)**, who assured in his paper that the awareness and seeking medical treatment was bad among the studied women.

Concerning the practice regarding to menstrual hygiene in the current study the majority of the studied group were used disposable sanitary pad, and approximately one fifth of group were used reusable sanitary pad during menses this was in agreement with **El-Gilany et al., (2005)** who conducted a descriptive study among urban and rural girls in Mansoura, Egypt, to evaluate menstrual hygienic practices among school of adolescent girls at Mansoura city, results showed that two-thirds of the studied group (66.8%) used disposable pads, while 28% of them used re-usable pads as (cloths or old pieces of cloth) which discarded after use.

The present study result was in contrast with **Abd Elrahim et al., (2012)** results as it showed that (29%) of the women were used (washed reusable clothes) which dried inside home. The present study was in line with **El-Gilany et al., (2005)** this may be due to the two studies were done in the same geographical place (Mansoura) in contrast the study of **Abd Elrahim et al., (2012)** was in the east of Egypt which far from Mansoura this lead to changes in the level of knowledge and customs.

There was significant difference in those women regarding the type of underwear; women who used cotton underwear were less in complaining of abnormal vaginal discharge than those who didn't wear cotton underwear, This may be due to wearing cotton under wear is comfortable and the cotton material of the under wear absorb the sweating and provide ventilation to the genital area on the other hand the under wear which made of synthetic material as silk or nylon not absorbent and prevent air flow which increase the sweating and irritation of the genital area. In the present study more than two thirds of the women were used cotton under wear this finding was not accordance with study done by **Abd Elrahim et al., (2012)** who identified that about half (54%) of the studied used cotton under wear and 27% of them used both cotton and nylon ones.

Concerning the presence of abnormal vaginal discharge, the current study findings revealed that about the quarter of the studied group complained of abnormal vaginal discharge, these findings were in agreement with **Chaudhary et al., (2012)**, who reported in their study about prevalence and determinants of vaginal secretions among women who is sexually active in the tertiary care hospital of northern India that the prevalence of vaginal discharge was 24.6%.

Also **Singh et al., 2007** reported in their study (vaginal discharge; its causes and associated symptoms which perceived by rural north Indian women), that the prevalence of vaginal discharge was 28.7%. Also, **Komal et al., (2014)** reported that the prevalence of abnormal vaginal discharge was 26.3% in their study about infertility, depression, anxiety of married woman and its relations with genital tract infections in rural place of India. The

finding also is in agreement with *Mohammed et al., (2015)* who reported that 28.2% of the studied group complained of abnormal vaginal discharge and the more commonly color of discharge was whitish (16.9%) but in the present study about more than half of the women complained of white vaginal discharge as they reported.

The present study results were in contrast to *Mahmood et al., (2011)* who conducted a study about the causes and management of pathological vaginal discharge their results showed that 6.4% of the studied group complained of abnormal vaginal discharge, this variation in the rates between both studies could be due to the small studied sample of their study because their study sample was 30 female patient in contrast to 500 in the present study.

Also the present study contradicts the study of *Abbas et al., (2016)* who reported that only (8.2%) of studied group were suffering from abnormal vaginal discharge. The difference of both study results may be due to the less usage of contraceptive method in their study sample 63.8% were non-contraceptive users on the other side about two thirds of the women were used contraceptive methods.

Regarding to the characteristics and associated symptoms of vaginal discharge, more than two thirds of the women had complained from itching, about half of the women complained of white vaginal discharge, and about two thirds of the women complained of lower abdominal pain. These findings were in agreement with *Chaudhary et al., (2012)* who reported in their study about the prevalence and determinants of vaginal secretion among sexually active women in India that gynecological symptoms like itching, lower abdomen pain were found to be strongly correlated with abnormal vaginal discharge in the study.

Although these studies regarding vaginal discharge and reproductive tract infection from different countries in the world, the results showed that the complaint of vaginal discharge is very common. This may be due to poor access to health care, poor knowledge and some of reproductive tract infection are asymptomatic are responsible for increased prevalence of genital tract infection. These indicate that there is strong need for increase awareness of the communities all over the world about the reproductive health.

In the current study there was statistical significant difference between the total knowledge score level and complaining of abnormal vaginal discharge among women, findings showed that there was decreased in abnormal vaginal discharge with increased level of knowledge score, Thus when knowledge level improves, the discharge will decreased. This result is in agreement with *Mohamed et al., (2013) & Bobhate & Shrivastava (2011)* who mentioned that there was significant association between having good knowledge and good practice regarding reproductive tract infection.

In the present study there was significantly statistically difference in women who used disposable sanitary pad and those who used reusable sanitary pad. There was increase in the abnormal vaginal discharge in those women who used reusable sanitary pad than those who used disposable sanitary pads. This may be due to the repeated use of unclean cloth and in adequate drying of re-usable cloth before using it again, which results in harboring of bacteria which result in increasing the vaginal infections.

This finding was in agreement with *Ananda et al., (2015)* who conducted their study to evaluate the practices regarding menstrual hygiene and its relationship with genital tract infections and abnormal vaginal secretions among women in India, the results showed that 15% of women used sanitary pad during menstruation in India. Both reproductive tract infection and abnormal vaginal discharge were positively related with non-use of hygienic practices. The women who used unhygienic method during menstruation were more likely to have reproductive tract infection.

V. Conclusion

Based on the present study results, more than half of the employees had poor awareness about vaginal discharge. In addition, about quarter of the studied women complained of abnormal vaginal discharge. Abnormal vaginal discharge was decreased in the women who had good knowledge score, and who used good hygienic practices, in contrast, there was increase in the abnormal vaginal discharge in those women who had poor knowledge score, who didn't seek examination till they cannot tolerate the symptoms, who didn't examine except the husband complain and also who used reusable sanitary pads.

VI. Recommendation

Based on the results of the current study, the following suggestions are recommended:

Developing a health education program for raising awareness about the vaginal discharge through maternal and child health centers, mass media, schools, universities and social clubs.

For further researches

Further researches needed to investigate the women who complain of abnormal vaginal discharge to determine the type and causes of abnormal vaginal discharge.

Limitation of the study

There were some problems faced the researcher when she was collected the data as the following:

- Some women felt embarrassed to discuss the research topic especially who were virgin.
- Some women were busy and had no time to fill in the sheet.
- There was not a suitable place to speak to the women and to collect the data.
- Some old women were not cooperative with the researcher

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