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The Impact of Genital Hygiene Practices on the Occurrence of Vaginal Infection and the Development of a Nursing Fact Sheet as Prevention Massage for Vulnrable Women

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Abstract: Genital hygiene is the major component of women's health and is very important for the protection of reproductive health. However, *genital hygienic practices might affect women vulnerability to sexually transmitted infections and other sexual and reproductive morbidities. The study aims to assess the impact of genital hygienic practices on the occurrence of vaginal infection, and to develop a nursing fact sheet as a prevention message for vulnerable women.*

Subjects and methods; a representative sample of 200 women were selected from the gynecological outpatient and family planning clinics. Of those 100 women were positive for vaginal infection (study group) and 100 women free from vaginal infection (control group). Then a structured interview and assessment sheet was developed and used for data collection. The results of the present study revealed that the risk of having vaginal infection was significantly increased with maternal age 35 years old and more, insufficient income, unprotected sex and the use of IUD for contraception (p=0.001). Women were significantly more likely to use incorrect technique of washing the genital area, use reusable cloth for menstruation as well as using intra-vaginal cleaning (P=0.001). A nursing fact sheet was developed based on the current finding as prevention message to be disseminated to vulnerable. Conclusion, it can be concluded that infected women were significantly more likely to use incorrect technique of washing the genital area, use reusable cloth for menstruation as well as using intra-vaginal cleaning and home remedies to lubricate their vagina during sexual relation. Recommendations, women need to be educated about genital hygienic practices to avoid harmful behaviors and reducing the rate of vaginal infection. Infected women should recognize the adverse effect of recurrent infection, the importance of early screening and treatment as well as the treatment of their husbands. A fact sheet should be disseminated to vulnerable women.

Key words: *Genital hygienic practices, vaginal infection*

I. Introduction

Vaginal infection is an important women's health problem associated with negative impacts on sexual and family lives and has a tendency of increasing prevalence worldwide. It is currently among the foremost causes that lead women to seek medical attention at obstetrics and gynecology polyclinics [25, 4 & 18].

Every year, approximately 100 million women worldwide are exposed to genital infections including urinary tract infections and bacterial vaginosis, and 75.0% of women have a history of a genital infection [22, 24]. Studies involving different levels of society report the prevalence of abnormal vaginal discharge as 12.1% to 30% [18, 24]. Infection of the female genital tract can result in vaginitis, cervicitis, and urethritis, and trichomoniasis has been associated with adverse pregnancy outcome [10] . The American social health association (ASHA, 2013) [2] reported that 70.0% of women are self-treated from vaginal infections before seeking a health care provider. Usually, they incorrectly thought they have a yeast infection while in fact it was BV. So, it is important to confirm the diagnosis through microbiological tests and full sexual health screen to exclude concurrent infection[15, 23].

The term "hygiene" which is derived from Hygieia, the Greek goddess of health, cleanliness and sanitation, refers to practices associated with ensuring good health and cleanliness. Genital hygiene is the major component of women's health and is very important for the protection of reproductive health[4]. The genital area should be kept clean but excessive cleaning procedures which could disturb the vaginal flora should be avoided. Women's care and treatment of their vagina and genital area might affect their vulnerability to sexually transmitted infections (STI, including HIV) and other sexual and reproductive morbidities[17]. The strength and consistency of this association, however, are debated as cohort studies have shown conflicting results[13] .

Infection is more likely caused due to reduced acidity either endogenously by hormones or exogenously by vaginal unhygienic practices such as; the mal-use of soaps or intra-vaginal cleansing" using fingers or douche", poor menstrual hygiene and the use of reusable cloth. In addition to the personal unhygienic practices keeping the genital area moist, using contaminated towels, and using irritating and tight nonabsorbent underwear [20, 2]. Earlier studies have linked women's intra-vaginal practices, to an increased susceptibility to

both bacterial vaginosis and HIV [14] but little is known about how the potential biological vulnerability occurs[17].

Concern has been raised by ***WHO (2015)*** [26] about whether vaginal practices could have harmful effects such as; increasing the susceptibility to sexually transmitted or reproductive tract infections. They recommend that more evidence is needed to confirm a correlation between an increased risk of STI and HIV/AIDS and vaginal practices, to discourage harmful practices, but which are modifiable through health education and prevention messages.

II. Aim Of The Study

The aim of this study is to; find out the impact of genital hygienic practices on the occurrence of vaginal infection and to develop a nursing fact sheet as a prevention message for vulnerable women.

III. Subjects And Methods

Research design:

A case-control design was adopted in this study**.**

Setting:

The present study was conducted at the outpatient gynecological and family planning units affiliated to Zagazig University Hospitals.

Subjects:

A purposive sample of 200 women using genital hygiene practices and seeking medical advice were selected for this study. The study subjects were divided into two equal groups of 100 women as follows:

- ***Case group***: women diagnosed as having vaginal infection (n=100)
- ***Control group***: women free from vaginal infection (n=100).

Women were eligible for recruitment in the study sample, if they met the following criteria:

Inclusion criteria:

1. Women age between 20-40 years old
2. Married and not pregnant
3. Agree to participate in the study

Tools of data collection

Data collection was done through the use of the following tools:

A) Structured interview sheet

This was designed to collect data from women in both groups regarding to:

- **Socio-demographic data such as:** age, education, occupation, residency and family income.
- **Obstetrical history**: such as gravidity, parity, number of previous abortion.
- **Gynecological history** it included data about the presence of symptoms associated with vaginal infection, contraceptive history and presence of gynecological problems.
- **Present symptoms of vaginal infection**
- **Genital hygienic practices** which include; external washing, intra-vaginal cleansing, pre-and post coital care, menstrual hygiene and external application.

B) Assessment sheet

Signs denoting infection were observed and recorded together with other investigations needed. Diagnosis made by on duty physician was recorded

Validity and Reliability

Tool was reviewed by a panel of five experts in the field of Obstetrics and Gynecological Nursing to test its content validity. Modifications were done accordingly based on their judgment. Reliability was done by Cronbach's Alpha Coefficient Test which revealed that each item of the utilized tools consisted relatively homogeneous items.

Administrative and ethical consideration

An official permission was granted by submission of an official letter from the Faculty of Nursing to the responsible authorities of the study setting to obtain their permission for data collection. All ethical issues were taken into consideration during all phases of the study; the researcher maintained an anonymity and confidentiality of the subjects. The inclusion in the study was totally voluntary. The aim of the study was explained to every woman before participation, oral and written consent was obtained from every woman prior to data collection. Women were assured that the study maneuver will cause no actual or potential harm to her or

her baby. Also, they were assured that professional help will be provided for them and for their baby whenever needed. Women were notified that they can withdraw at any stage of the research.

Pilot study:

A pilot study was carried out on 20 women (who were excluded from the sample) to assess the clarity and applicability of the data collection tools, arrangements of items, estimate the time needed for each sheet and the feasibility of the study and acceptance to be involved in the study. Necessary modifications were undertaken.

Field study:

Collection of data covered a period of six months "from the first of January 2014 to the first of June 2014". After getting the official permission, the pilot testing of the study tools was done and analyzed. The researcher attended the above mentioned setting on three days (Saturday, Monday, and Wednesday) per week during morning shifts. All women in both groups were interviewed to collect data related to socio-demographic characteristics, obstetric profile, gynecological history and genital hygienic practices. The researcher together with the on- duty physician started regular assessment of the maternal condition. Per-vaginal examination and investigations were done to obtain pertinent data about vaginal infection. The diagnosis of vaginal infection was determined by physician.

Statistical design:

After the collection of data, it was revised, coded and fed to statistical software SPSS version 20. The given graphs were constructed using Microsoft excel software. All statistical analysis was done using two tailed tests and alpha error of 0.05. P value less than or equal to 0.05 was considered to be statistically significant.

IV. Results

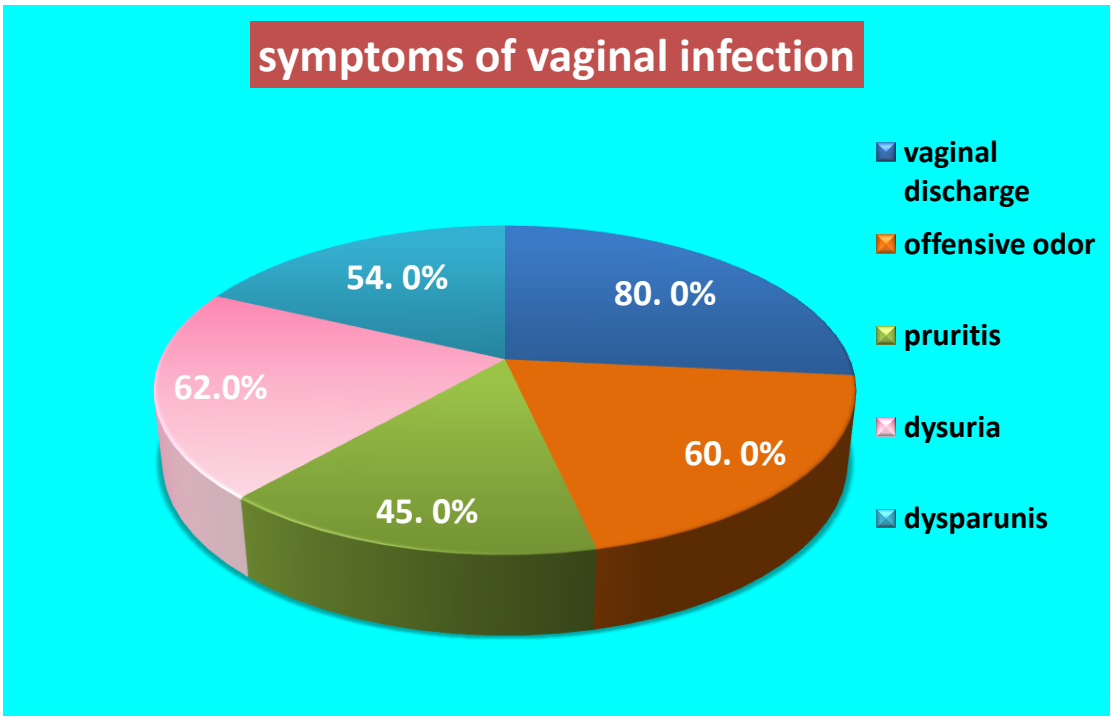

Figure 1: Symptoms of vaginal infection among the case group.

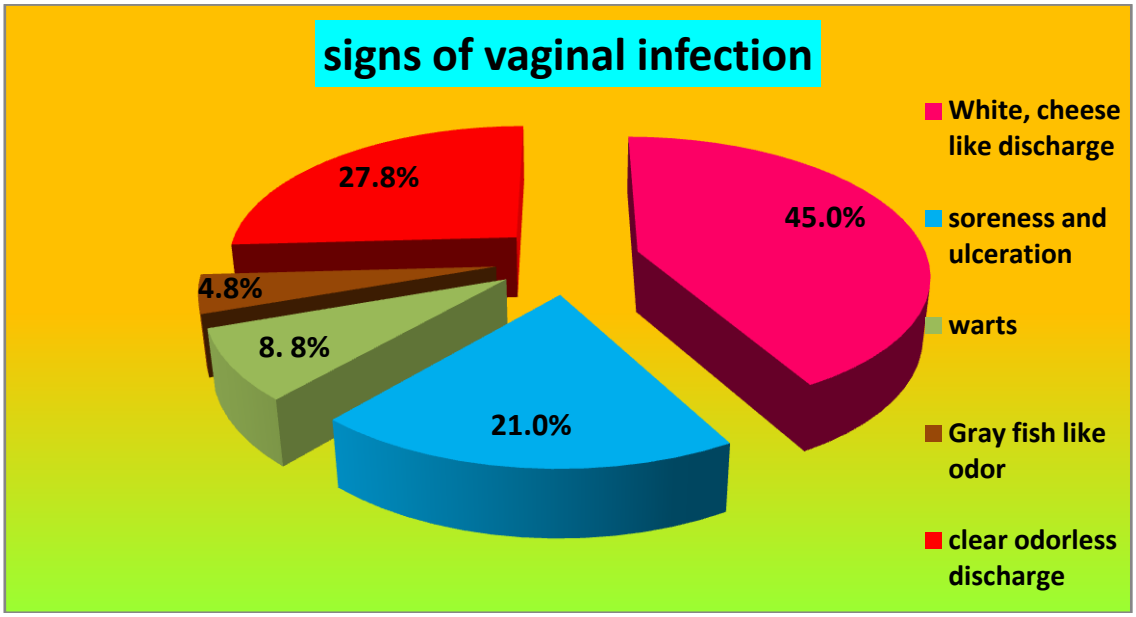

Figure 2: Signs of vaginal infection among the case group.

Table 1: Distribution of the Studied Women According to Women Characteristics (n=200)

Women characteristics	Groups				X^2 (P)
	Control (n=100)		Case (n=100)		
	No	%	No	%	
Age (years)					21.6 (0.001)*
▪ <20	10	10.0	8	8.0	
▪ 20-	36	36.0	23	23.0	
▪ 25-	32	32.0	20	20.0	
▪ 30-	18	18.0	19	19.0	
▪ 35+	4	4.0	30	30.0	
Mean ± SD	25.5±4.8		27.7±6.3		
Age at marriage					12.4 (0.002)*
▪ < 25 years	82	82.0	92	92.0	
▪ 25 and more	18	18.0	8	8.0	
parity					5.7(0.016)*
▪ Primipara	36	36.0	31	31.0	
▪ Multipara	45	45.0	59	59.0	
Income:					36.1(0.001) *
▪ In dept	58	58.0	19	19.0	
▪ Just meet their life expenses	21	21.0	28	28.0	
▪ Insufficient	20	20.0	53	53.0	
Contraceptive history					3.1 (0.002)*
▪ Used IUD	47	47.0	63	63.0	
▪ Use other contraceptives	35	35.0	16	16.0	
▪ Not used	18	18.0	21	21.0	

^: P value based on Mont Carlo exact probability
! P value based on Fisher exact probability
*** P < 0.05 (significant)**

Table 2: Distribution of the Studied Women According to History of Recurrent Vaginal Infection (n=200)

Recurrent vaginal infection	groups				X^2 (P)
	Control (n=100)		Case (n=100)		
	No	%	No	%	
Recurrence of vaginal infection					
Yes	4	4.0	80	80.0	24.8 (0.001)*
NO	96	96.0	20	20.0	
Use condom to protect the spouse					
▪ **Yes**	20	20.0	28	28.0	
▪ **No**	80	80.0	72	72.0	
Used prescribed medication					17.9 (0.001)*
Yes	4	4.0	49	49.0	
No	96	96.0	51	51.0	
Used non prescribed medication					
▪ **yes**	10	10.0	51	51.0	
▪ **No**	90	90.0	49	49.0	
Used home remedies					
▪ **Yes**	10	10.0	35	35.0	
▪ **No**	90	90.0	65	65.0	
History of male infection					4.1 (0.001)*
▪ **No**	97	97.0	90	90.0	
▪ **Yes**	3	3.0	10	10.0	
Sexual activity					10.3 (0.001)*
▪ **< 2 times/ week**	74	74.0	52	52.0	
▪ **> 2 times and more**	26	26.0	48	48.0	

^: P value based on Mont Carlo exact probability
! P value based on Fisher exact probability
*** P < 0.05 (significant)**

Table 3: Distribution of the Studied Women According to the Type of Genital Hygienic Practices (n=200)

Genital hygienic practices		Groups				X^2 (P)
		Control (n=100)		Case (n=100)		
		No	%	No	%	
Type of under wear	Cotton	51	51.0	29	29.0	10.1 (0.006)*
	Synthetic	10	10.0	16	16.0	
	Naylon and synthetic	39	39.0	55	55.0	
Frequency of under wear change	Every day	74	74.0	44	44.0	20.7 (0.001)*
	Every two days	25	25.0	47	47.0	
	Once a week	1	1.0	9	9.0	
Internal vaginal cleaning Or douching	No	9	9.0	23	23.0	7.3 (0.007)*
	Yes	91	91.0	77	77.0	
External washing of the genital area	No	34	34.0	68	68.0	26.5 (0.001)*
	Yes	52	52.0	30	30.0	
	Occasionally	14	14.0	2	2.0	
Cleansing genital area With hands	No	3	3.0	10	10.0	5.1 (0.049)*
	Yes	93	93.0	84	84.0	
	Occasionally	4	4.0	6	6.0	
Direction of cleaning the Genital area	From front to back	36	36.0	25	25.0	2.8 (0.091)*
	From back to front	64	64.0	75	75.0	
Use daily pads	No	9	9.0	23	23.0	7.3 (0.007)*
	yes	91	91.0	77	77.0	
Drying after using toilet	No	21	21.0	64	64.0	0.001*^
	Yes	74	74.0	35	35.0	
	Occasionally	5	5.0	1	1.0	
	< 1 month	31	31.0	24	24.0	

Removal of pubic hair every	Monthly	64	64.0	65	65.0	3.1 (0.207)
	> 1 month	5	5.0	11	11.0	

^: P value based on Mont Carlo exact probability
! P value based on Fisher exact probability
*** P < 0.05 (significant)**

Table 4: Distribution of the Studied Women According to the Type of Menstrual hygiene (n=200)

Menstrual hygienic practices	Groups				X^2 (P)
	Control (n=100)		Case (n=100)		
	No	%	No	%	
Bathing during menstrual period					
▪ No	3	3.0	13	13.0	6.7 (0.009)*
▪ Yes	97	97.0	87	87.0	
Washing hands before and after using the toilet					
▪ Always	61	61.0	40	40.0	0.010*^
▪ Sometimes	38	38.0	57	57.0	
▪ Never	1	1.0	3	3.0	
Type of material used during menstrual period					
▪ Ready used sanitary pad	75	75.0	50	50.0	
▪ Cotton	5	5.0	4	4.0	0.001*^
▪ Paper	1	1.0	4	4.0	
▪ Using reusable cloth	19	19.0	42	42.0	
Frequency of changing pads					
▪ 1-6 hours	87	87.0	76	76.0	0.023*^
▪ 7-12 hours	11	11.0	24	24.0	
▪ >12 hours	2	2.0	0	0.0	
Method of dealing with dirty pad					
▪ Discard	84	84.0	63	63.0	
▪ washing only	3	3.0	6	6.0	0.001*^
▪ washing and boiling	2	2.0	18	18.0	
• washing and exposures to sunlight	11	11.0	13	13.0	

^: P value based on Mont Carlo exact probability
! P value based on Fisher exact probability
*** P < 0.05 (significant)**

Table 5: Distribution of the Studied Women According to the Pre and Post-Coital Hygiene (n=200)

Coital hygienic practices	Groups				X^2 (P)
	Control (n=100)		Case (n=100)		
	No	%	No	%	
Genital care before intercourse					
▪ Always	47	47.0	15	15.0	33.8 (0.001)*
▪ Sometimes	46	46.0	52	52.0	
▪ Never	7	7.0	33	33.0	
Genital care after intercourse					
▪ Always	63	63.0	29	29.0	26.8 (0.001)*
▪ Sometimes	28	28.0	40	40.0	
▪ Never	9	9.0	31	31.0	
Using of local contraceptive					0.350^

▪ Always	1	1.0	1	1.0	
▪ Sometimes	17	17.0	10	10.0	
▪ Never	82	82.0	89	89.0	
Use of chemical substance and lubricant during intercourse					
▪ Always	0	0.0	2	2.0	0.118^
▪ Sometimes	15	15.0	8	8.0	
▪ Never	85	85.0	90	90.0	
Use of vaginal douching after sexual intercourse					
▪ Always	11	11.0	5	5.0	4.8 (0.088)
▪ Sometimes	25	25.0	37	37.0	
▪ Never	64	64.0	58	58.0	

^: P value based on Mont Carlo exact probability
! P value based on Fisher exact probability
*** P < 0.05 (significant)**

Figure 1 illustrates that the most common symptom encountered by patients was vaginal discharge (80.0%) followed by dysuria, offensive odor and dyspareunia (62.0%, 60.0% and 54.0% respectively).

It is obvious from figure 2 that more than two fifths (45.0%) of patients had white cheese like discharge, and 21.0% had soreness and ulcerations. Gray discharge with a fish like odor denoting trichomonus infection was present in 4.8% of the case group, while warts were present in 8.8% of patient.

Table 1: shows that women who were positive for vaginal infection were more likely to be 35 years old and more (30.0% vs. 4.0% respectively) with a mean higher than those in the control group (27.7±6.3 vs. 25.5±4.8). Meanwhile, they were more married at younger age <25 years, multipara, had insufficient income and used IUD for contraception (92.0%, 59.0%, 53.0 & 63.0% vs. 82.0%, 45.0%, 20.0% and 47.0% respectively). Differences observed are statistically significant (p=0.001).

It is obvious in table 2 that the majority of cases had recurrent vaginal infection (80.0% vs. 4.0%) and of that small proportion (28.0%) that used the condom to protect their spouses. Meanwhile, they were more likely to use non prescribed medication and home remedies for the treatment of vaginal infection (51.0% and 35.0% respectively), and were sexually active (48.0% vs. 26.0% respectively). Differences observed are statistically significant (p= 0.001).

Table 3 reveals that women suffered from vaginal infection were less likely to use cotton underwear and changed them less frequently (29.0% & 44.0% vs. 51.0% & 74.0% respectively). Meanwhile, they were more apt to use the incorrect technique in washing the genital area (75.0% vs. 64.0%), use intra-vaginal cleansing or douching (91.0% vs. 77.0%) and keeping their genital area moist or using reused cloth for drying it (P=0.001).

Table 4 depicts that women in the study group were less likely to clean and bath themselves, washing hands before and after using the toilet and used reusable cloth to absorb menstrual blood (13.0%, 40.0% & 42.0% vs. 3.0%, 61.0% & 19.0% respectively). Differences observed are statistically significant (p=0.001). Meanwhile, almost one fourth (24.0%) of the respondents in the case group less frequently changed their perineal pad and washes their reused cloth (37.0%).

Table 5 shows that almost one third of women in the case group did not perform pre or post-coital care compared to those in the control group (33.0% 31.0% vs 7.0% % 9.0% respectively) with statistically significant difference (P=0.001).

V. Discussion

Vaginal infection is an important women's health problem associated with negative impacts on sexual and family lives and has a tendency of increasing prevalence worldwide. Genital hygiene has a key role in preventing genital infections. Early recognition of vaginal infections, initiating appropriate treatment and taking necessary precautions are essential in protecting and improving women's health.

The present study was conducted to assess the impact of genital hygienic practices on the occurrence of vaginal infection and to develop a nursing fact sheet as a prevention message for vulnerable women. Studies involving different levels of society report about the prevalence of abnormal vaginal discharge as 12.1 to 30% [18,10], which is not consistent with the present result which showed a higher rate. This may be due to difference in selected design and chosen sample as well as patient' characteristics.

The present study showed an association between vaginal infection, increasing age, parity and insufficient income, this is in agreement with [13]. It could be explained by the fact that low income and increased parity is associated with unhealthy diet and poor nutritional status that make woman vulnerable to infection. Meanwhile, McClelland et al. reported more common vaginal infections among women with poor socioeconomic status [14]. Better income makes it easier to meet hygiene requirements and helps women to conveniently utilize healthcare institutions if they experience any problems with their health.

The women contraceptive history of the positive cases revealed that most of them used IUD which was a greater risk factor for vaginal infection. This is supported by ***Pant et al., (2007)*** and ***Mohamed et al., (2015)*** [19,16] who reported that more than half of the users with vaginal infection were users of IUD and related this to genital unhygienic practices and non-compliance with the follow up care.

The rate of recurrence of vaginal infection in the present study was partially similar to that reported by ***Mohamed et al., (2015)*** [16] in Ismailia-Egypt**.** Moreover, a sizable proportion used non prescribed medication and home remedies together with the fact that they were mostly sexually active. These previously mentioned factors expose woman to reinfection from an untreated spouse together with the empirical use of non-prescribed medication without medical advice.

The type and cleanliness of the underwear as well as the frequency with which it is changed are important factors regarding the risk of getting a urinary infection. Nylon and synthetic underwear does not absorb perspiration as much as the cotton underwear does, causing the perineum to remain humid and leading an increased risk of genital tract infections [22,6,3]. The present study also demonstrated a significantly higher frequency of genital infections among women who used underwear made of synthetic material (p =0.001).

Meanwhile, changing the underwear frequently is critical in preventing genital and urinary infections. The underwear may be changed even multiple times throughout the day during the period of intensive discharge [6]. In their study, Ozkan and Demir found that 53.4% of the women changed their underwear every 2-3 days and demonstrated a higher incidence of vaginitis for this group compared to those who changed underwear daily [7,8]. The present study found a higher frequency of genital infections among women who used pads daily (p=0.001). This may be, in part, explained by the fact that not changing the daily pads at appropriate intervals will increase the humidity of the genital area especially during the periods of intensive discharge and in increased temperatures leading to poor ventilation and thus providing a suitable environment for infections [7,12].

It has been described by the previous studies that wrong perineal hygiene practices (i.e. back to forward) may lead to infections due to the transfer of microorganisms from the anus to the vagina [14,1,7]. The study by Cangol reported the frequency of genital infections as 35.1% among the participants practicing correct genital hygiene vs. 38.1% in those who clean the genital area incorrectly [4]. Likewise, the present study also found a higher frequency of genital infections among participants who practiced incorrect technique.

Women positive for infection in the present study was significantly more likely to keep the genital area moist after cleaning it several times with their hands and used a reusable cloth for drying (P=0.001). In this respect [3] emphasized that after cleaning, the genital area should be dried to avoid a wet environment which facilitates growth of microorganisms. Genital infection is shown to be seen 4.75 times more frequent in women who clean their genital area with their hands compared to the control group[11]. Women who use this method however should give special importance to their hand hygiene and should dry up with toilette paper afterwards. Using cloths for cleansing after urination and/or defecation constitute a high risk for infection. Besides, washing the genital area more than once a day or using different commercial products may increase risk for infection by disturbing the genital flora and is therefore not suggested by the International Society for the Study of Vulvo-vaginal Disease [23].

According to a study in Erzurum, Turkey by Arikan and friends, the rate of female high school students who were taking a bath during their menstruation was 68.8%. In the same study the rate of hygienic pad usage was 91.4% which is quite higher than the rate in the present study. Moreover, in Saudi Arabia it is found that two thirds of the women are avoiding some form of foods, drinks, activities, bathing and perineal washing during their menstruation [21]. In some cultures the subject 'menstruation' is still a taboo an therefore problems related to this biologic event are not easily solved [5].

As for the coital hygiene, the present study revealed that infected women were less likely to practice pre or post-coital care except douching, but they were more apt to use lubricant during sexual relations. In this respect [12] reported that Thai women of all ages clean externally and douche with feminine hygiene solution regularly, and particularly during menstruation and before coitus to increase their confidence with their partners and manage undesirable vaginal odor. Few Thai respondents cleanse intra-vaginally with fingers. Other practices of younger and older Thai women respectively included decorative shaving, tattooing and dying of genital hair, use of sex stimulants from gadgets to creams and droplets to help tighten the vagina for sex

among the young. Older women applied ointments and creams and ingested herbal medicine to reduce menopausal symptoms such as a dry vagina and to tighten the vagina.

Based on the study results, the variety and prevalence of vaginal practices suggests a need to consider addressing these issues in STD and bacterial vaginosis prevention efforts, such as the importance of early screening, prevention of recurrent infection, using the prescribed medication and avoiding practices found to be harmful, but which are modifiable through health education and prevention messages ie a nursing fact sheet that could be distributed to vulnerable women and whenever needed.

VI. Conclusion

It can be concluded that the majority of the infected women had vaginal discharge, white cheese like discharge was the most common, and more women used IUD, exposed to recurrent infection and not compiled to the prescribed treatment. They were significantly more likely to use incorrect technique of washing the genital area, keeping the area moist or use cloth for drying it. Moreover, they were less likely to take bath during menstruation and use reusable cloth as well as using intra-vaginal cleaning and home remedies to lubricate their vaginal during sexual relation.

Recommendations

The present study showed that genital, menstrual and coital hygiene highlight importance in terms of women health. Women need to be educated about genital hygienic practices to avoid harmful behaviors and reducing the rate of vaginal infection. Infected women should recognize the adverse effect of recurrent infection, the importance of early screening and treatment as well as the treatment of their husbands. Training programs should be conducted for nurses to train them in counseling women about the genital hygienic practices and disseminate the fact sheet as prevention message whenever needed. Further studies and more interventions must be explored to improve women health and avoid genital tract infection

Referrences

[1]. Adriane Martin Hilber a, Terence H. Hull b, Eleanor Preston-Whyte c, Brigitte Bagnol d, Jenni Smit e, Chintana Wacharasin f, Ninuk Widyantoro g, For the WHO GSVP Study Grouph (2009): A cross cultural study of vaginal practices and sexuality: Implications for sexual health, Social Science & Medicine 70 (2010) 392–400.

[2]. American Social Health Association (ASHA) (2013):Vaginitis Menlo Research triangle Park. Available from ASHA, creating asexual health nation at: www.ashasexualhealth.orgl 1-10-

[3]. Arýkan D, Tortumluoðlu G. The effect of the planned study given to the students to menstruation hygiene behavior. 48. National Pediatric Congress, Samsun, 21-24 September 2004.

[4]. Cangöl E (2010) Uzun Köprü Kadın Doğum Ve Çocuk Hastanesi'ne Jinekolojik Muayene İçin Başvuran Kadınlarda Genital Enfeksiyonların Sıklığı Ve Genital Hijyen Davranışları, Yüksek Lisans Tezi, Trakya Üniversitesi, Edirne.

[5]. Garg S, Nandini S. Socio-cultural aspects of menstruation in an Urban Slum in Delhi. Reproductive Health Matters 2001; 9: 16-25.

[6]. Glenville, M (2012): Vaginal infections, understanding vaginal infections e-book, everything you need to know about vaginal infection from symptoms to solutions. The natural practice; 2-19

[7]. Güler G, Bekar M, Güler N, Kocataş S. Menstruasyon hygiene in female primary school students. Sted 2005; 14: 138.

[8]. Hacıalioğlu N, Nazik E, Kılıç MA (2009) A descriptive study of douching practices in Turkish women. Ins j Nurs Prac 15: 57-64.

[9]. Information Committee, June 2006, http://www.issvd.org/document_library/Genital%20Care.doc Genital Care for women, International Society for the study of Vulvovaginal Disease Patient

[10]. Jenifer E, Allsworth JE, Peipert JF. Prevalence of bacterial vaginosis: 2001-2004 National health and nutrition examination survey data. Obstet Gynecol 2007;1:114-120.

[11]. Karatay G, Özvariş ŞB. Evaluation of applications regarding the genital hygiene of women living in barrel houses within a region existing a health center. Journal of Nursing School, University of Cumhuriyet 2006; 10: 7-14.

[12]. Low N, Broutet N, Adu-Sarkodie Y, Barton P, Hossain M, Hawkes S (2006) Global control of sexually transmitted infections. Lancet 368: 2001-2016.

[13]. Martin Hilber, A., Chersich, M. F., Van De Wijgert, J. H. H. M., Rees, H., & Temmerman, M. (2007). Vaginal practices, microbicides and HIV: what do we need to know? Sexually Transmitted Infections, 83(7), 505–508.

[14]. McClelland, R. S., Lavreys, L., Hassan, W. M., Mandaliya, K., Ndinya-Achola, J. O., & Baeten, J. M. (2006). Vaginal washing and increased risk of HIV-1 acquisition among African women: a 10-year prospective study. AIDS, 20(2), 269–273.

[15]. Mitchell, H. (2004): ABC of sexually transmitted infections/vaginal discharge causes, diagnosis and treatment. J.BMJ, publishing Group Ltd., 328 (7451): 1306- 8.

[16]. Mohamed H., Shalaby N., Maraghy N., and Baraia Z., (2015): Prevalence of vaginal infection and associated risk health behaviors among married women in Ismailia City

[17]. Myer, L., Denny, L., de Souza, M., Wright, T. C., Jr., & Kuhn, L. (2006). Distinguishing the temporal association between women's intravaginal practices and risk of human immunodeficiency virus infection: a prospective study of South African women. American Journal of Epidemiology, 163(6), 552–560.

[18]. Özdemir S, Ortabağ T, Tosun B, Özdemir Ö, Bebiş H (2012) HemşirelikYüksekokulu Öğrencileirnin Genital Hijyen Hakkındaki Bilgi Düzeylerinin veDavranışlarının Değerlendirilmesi. Gülhane Tıp Dergisi 54: 120-128.

[19]. Pant B., Singh,J.V., Bhatnagar, M., Garg, S.K., Chopra,H. and Bajpai, S.K. (2008): Social correlates in reproductive tract infections among married women in rural area of Meerut. J. Indian Journal of Community Medicine; 33 (1): 52-3.

[20]. Porter, R.S. and Justin L. K. (2010): Vaginal Infection, the Merck Manual, On Line Medical Library, Home Edition for patients and Care Givers. Available at www.MerckSharpandDohmeCorp. 2011 Practitioners-Researchers, Blackwell, Oxford. Accessed 17/ 6/2015, 9.00 pm (internet)

[21]. Pradhan A. Water Aid Report. Is menstrual hygiene and management an issue for adolescent school girls? A comparative study of

four schools in different settings of Nepal. http://www.wateraid.org/ documents/plugin_documents/wa_nep_mhm_rep_march2009.pdf accessed at 4/3/2015
[22]. Reid G, Bruce AW (2003) Urogenital infections in women: can probiotics help? Postgrad Med J 79: 428-432.
[23]. Schnatz, R. H. and Miranda, A.M. (2011): Vaginal Anatomy. Available at www.emedicine.medscape.com. Accessed 20/10/2014,
[24]. Ünsal A (2010) Universite Okuyan Kız Öğrencilerin Genital Hijyen Davranışları, Fırat Sağlık Hizmetleri Dergisi 5: 79-93.
[25]. Workowski K, Berman S (2010) Sexually transmitted diseases treatment guidelines. Centers for Disease Control and Prevention, 2010. MMWR 59: 1-110.
[26]. World Health Organization 2015 : A multi-country study on gender, sexuality and vaginal practices: Implications for sexual health. Department of Reproductive Health and Research.