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Analysis of Genital Hygiene Behaviors of Women Who Applied to Women's Illnesses and Birth Polyclinic

Hilal Karadeniz , Ruşen Öztürk , Gül Ertem

ABSTRACT

Objective: This research report is a descriptive and cross-sectional study to investigate and compare the genital hygiene behaviors of pregnant, nonpregnant, and puerperal women.

Materials and Methods: The study included 304 pregnant, nonpregnant, and postpartum women in the 15–49-year age group, who presented at the Ege University Medical Faculty Hospital Obstetrics and Gynecology Clinic, between December 2015 and May 2016 and were accepted to participate in the study. The socio-demographic characteristics and gynecological characteristics of the subjects were collected by face-to-face interviews using the “Individual Presentation Form” and “Genital Hygiene Behavior Inventory.”

Results: Within the sample, 30.3% were nonpregnant women, 39.8% were pregnant women, and 29.9% were postpartum women. The mean age of the sample was found to be 30.0 ± 7.59 years. When the inventory data of genital hygiene behaviors were examined, the mean of the total scaled score was 80.5 ± 11.1 ; 78.5 ± 11.9 for nonpregnant women; 80.4 ± 10.6 for pregnant women; and 82.5 ± 10.8 for postpartum women. No other statistically significant difference between the groups in terms of the scale total point average was evident ($p > 0.05$).

Conclusion: No statistically significant difference between the groups in terms of genital hygiene behaviors was evident, as the results of the study showed that the average of genital hygiene behavior scores of pregnant, nonpregnant, and postpartum women was not too high. However, only one-third of women had received education in genital hygiene in their life, therefore, some women tend to practice incorrect genital hygiene behavior. It is believed that an increase in the education can increase the usage of correct genital hygiene practices.

Keywords: Pregnant, nonpregnant women, puerperium, genital hygiene, genital infection, women's health

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INTRODUCTION

Within the most fertile age range of women being 15–49 years, reproductive issues tend to be the most prominent during this time (1). Within this age range, one of the most common causes of hospital infections are genital tract infections, and approximately 1 out of every 4 referrals to sexually transmitted disease clinics is diagnosed with vulvovaginitis. In this context, genital infections have become a critical public health problem encountered often in developed and developing countries (2). Approximately 1 million women in the world suffer from urogenital infections, such as urinary tract infection and bacterial vaginosis, and 75% of them have had previous experience with genital infections (3). It is stated that the prevalence of bacterial vaginosis is 8%–75%, vulvar vaginal candidiasis is 2.2%–30%, and trichomoniasis (TV) is 0%–34% (4). The World Health Organization (WHO) estimates the worldwide spread to be between 170 million and 190 million TV cases per year (5).

Ozkan and Sevil (2004) found that 65.6% of Turkish women had experienced a genital infection. It was also reported that the proximity of the urethra, vagina, and anus in women is the principle cause of genital infections and keeps the risk of genital infection alive (6). Genital hygiene has a significant effect on good reproductive and sexual health in pregnant, nonpregnant, and postpartum women. Since the genital area is the hottest, most humid and most sensitive region of the body, the special structure of the mucosa and the various wastes of the body (menstrual blood, sweat, urine etc.) form a very favorable environment for microorganisms to settle and multiply (2). In addition, the anatomical shortness of urethra in women, the urethral meatus, vagina, and the close proximity of the anus increases the risk of genital infection. Therefore, this allows for effective transport of microorganisms from the urethra to the vagina. For this reason, urogenital infections in women are more common than those in men. In addition to causing great discomfort to women, these infections affect the urogenital system in a negative way and may lead to permanent damage (7). Genital infections negatively affect a woman's sexual life, family life, daily life activity, and her psychology, along with reducing her quality of life (8). In addition, due to insufficient knowledge about genital hygiene, irritation of the perineal skin due to neglect of genital hygiene, genital itching, bad smell, and other reasons may cause social isolation in women and negatively affect their social life (7, 8).

Although these infections do not threaten the woman's life, they can cause a number of problems, such as intrauterine growth retardation, ectopic pregnancy, pregnancy loss, preterm birth, premature labor, sepsis, cervical cancer, infertility, congenital infections of the newborn, and increased vulnerability to HIV/AIDS, PID, and other sexually transmitted infections (8–10).

Genital infections affecting all women who are pregnant or not in the society are directly related to genital hygiene behaviors, which can be defined as care practices developed by the individual toward their knowledge, beliefs, and habits. Although these behaviors can affect the frequency and method of genital hygiene practices by varying degrees between individuals, it is important that proper hygiene practices are performed to protect and maintain the health of the individual (7). Cultural and health-related behaviors are a crucial component of the personal environments that affect genital infections. A number of "personal hygiene" practices may actually be harmful to health (9). In this context, the unhealthy and risky practices can be summarized briefly as improper cleaning of the post-toilet genital area, the lack of good hand washing habits, frequent washing of the genital area, not using proper underwear, not paying enough attention to menstrual hygiene, non-sterile births, or the use of abortions as a method of family planning (1, 6).

Studies suggest that poor sexual practices such as multiple partners as well as bad and insufficient genital hygiene regarding reproductive organs leads to genital infections and often abnormal genital discharge (5, 10, 11). For this reason, knowing and removing the risk factors that cause genital infections in women have great importance in terms of women's health. In this study, we aimed to investigate and compare the genital hygiene behaviors of pregnant, nonpregnant, and postpartum women who were admitted to the Obstetrics and Gynecology Polyclinic at the Ege University Medical Faculty Hospital.

MATERIALS and METHODS

The population of this descriptive and cross-sectional study was composed of pregnant, nonpregnant, and postpartum women. The study population comprised women between the age range of 15–49 years, who had been admitted to the Obstetrics and Gynecology Clinic of the Ege University Medical Faculty Hospital, between December 2015 and May 2016. The sample for this study included 304 females, of which 121 were pregnant, 92 were nonpregnant, and 91 were puerperal. The convenience sampling method was used for the selection of women who met the criteria.

During the collection of data, the "Individual Presentation Form" and "Genital Hygiene Behavior Inventory" consisted of questions regarding the socio-demographic characteristics and the gynecological and obstetric characteristics. The Individual Presentation Forms were filled in during face-to-face interviews with researchers, but the Genital Hygiene Behavior Inventories were filled by the women's self-assessment report in a private room at the polyclinic.

Individual Presentation Form consisted of 28 questions, 10 of which were associated with socio-demographic characteristics (age, education status, occupation, marital status, equality education level, monthly income level, total family income, family type, and social security status) and 18 questions related to gynecological

and obstetric characteristics (questions for pregnant women regarding the mean gestational week times of control during pregnancy), owing to the higher risk of developing genital infections during pregnancy (12). The face validity of the questionnaire was obtained by asking for expert opinions from five university lecturers in the nursing department of the gynecology and obstetrics polyclinic. Changes to the questionnaire were made according to the experts' suggestions. The questionnaire was subsequently tested for comprehensibility by 20 women who were not included in the study and changes were made based on their recommendations. The questionnaire was found to be understandable.

Genital Hygiene Behavior Inventory (GHDE) consisted of a total of 27 items and 4 types of Likert types developed by Ege and Eryilmaz (2005) to evaluate the genital hygiene behaviors of women aged 15–49 years. This scale was developed by a standard measurement instrument developed by Ege and Eryilmaz (2005), which is specialized to our culture and is used for assessing women's genital hygiene behaviors. A Likert-type inventory consisting of 47 items to evaluate the genital hygiene behaviors was developed in the light of the information from the previous literature. The validity of content-scope was examined to determine the validity of inventory and the number of the questions was reduced to 44 items. After the analysis, the inventory was reduced to 27 items after application (10). The final total of 27 items in the inventory was evaluated as follows; never, sometimes, frequently, always. Scores are given 1 point for "never," 2 points for "sometimes," 3 points for "frequently," and 4 points for "always." Scoring for items 17, 26, and 27 in the inventory; 4 points for "never," 3 points for "sometimes," 2 points for "frequent," and 1 point for "always." The lowest total score was 27, while the highest total score was 108. A high-level total score from the inventory indicates that the genital hygiene behavior is at the desired level. The Cronbach's alpha coefficient of scale is $\alpha=0.86$. In the study of Ege and Eryilmaz (2005), it is stated that the reliability coefficient of Cronbach Alfa is as high as 0.86, indicating that GHDE is highly reliable (7, 10). In our study, the Cronbach's alpha coefficient of scale was $\alpha=0.81$.

Statistical Analysis

The IBM SPSS version 16 (Statistical Package for the Social Sciences) program was used for statistical analysis. The socio-demographic data obtained were evaluated with their number and percentage dispersions. Since the variables provided a normal distribution condition due to the Kolmogorov-Smirnov test results ($p>0.05$), parametric tests were used in the analysis. The analysis of variance test was used for intergroup comparisons of the parameters with normal distribution and the t-test was used for the comparisons of the two group. The Levene's test found that variances are equal because of $p>0.05$. Thus, the Scheffe test was used as a post-hoc test because equal variance was assumed in these tests. The results were evaluated within the 95% confidence interval, and significance was evaluated at $p<0.05$.

Ethical Aspect

Necessary permits were obtained from the Ethics Board of the Ege University Nursing Faculty (ethics committee approval: 2015-73) and the Gynecology and Obstetrics Department of the Ege University Hospital for conducting this study. Also, the participants were informed about the purpose of the study, benefits provided by the

Table 1. Distribution of participants according to the socio-demographic characteristics

	n	%
Age mean	30.07±7.59	
Education		
Primary school	209	68.8
High school	52	17.1
University	43	14.1
Working status		
Housewife	211	69.4
Working	93	30.6
Family type		
Nuclear family	252	82.9
Extended family	52	17.1
Longest living spot		
Village	40	13.2
District	98	32.2
Province	166	54.6
Social security		
Yes	264	86.8
No	40	13.2
Income status		
Good	45	14.8
Medium	216	71.1
Bad	43	14.1
Total	304	100

study, and the time that they needed to allocate for the study prior to the interviews. The written consent of all the patients was received.

RESULTS

In the age range of 15–49 years, 30.3% of the nonpregnant women, 39.8% of the pregnant women, and 29.9% of the postpartum women participated in the study and the mean age was found to be 30.0±7.59 years (Table 1). The mean gestational week was 29.5±8.58 and mean of tending to control during the pregnancy was found to be 10.6±5.48 (Table 2).

When the inventory data of genital hygiene behaviors were examined, the mean of the scale total score was 80.5±11.1; 78.5±11.9 for nonpregnant women, 80.4±10.6 for pregnant women, and 82.5±10.8 in postpartum women. There was no statistically significant difference between the groups in terms of the scale total point average ($F=2.903$, $p>0.05$). In this study, it was found that there was a significant difference between the husband's level of education, income level, core family structure, presence of social security, place of residence, and GHDE scale point average ($p<0.05$) (Table 3). The GHDE score of the working women was significantly higher than the housewives. It was found that this difference was significantly higher the GHDE score where the spouse had reached a university-based education level as compared to the

Table 2. Distribution of participants according to obstetric characteristics

	Mean	SD
Age of first menarche	15.9	±2.31
Pregnancy week*	29.46	±8.58
Number of total births	1.43	±1.22
Number of total pregnancies	2.02	±1.31
Number of total children	1.33	±1.08
Number of gynecologic control visits*	10.61	±5.48
	n	%
Abortion		
Yes	68	22.5
No	234	77.5
Curettage		
Yes	65	22.0
No	230	78.0

SD: Standard deviation; *These were only asked of the pregnant women

primary, secondary, and high school graduate spouses. The GHDE score was found to be very low in women who had a lower income status as compared to the group of good and medium income levels, which is a statistically significant difference. In the family type, the mean score of GHDE for women who lived in the nuclear family system was found to be significantly higher than the traditional extended family. In terms of the place of residence, it was found that there was a significant difference between living in the city and women living in the district, and the mean score of the females living in urban areas was significantly higher ($p<0.005$).

It was determined that 75.3% of the women surveyed had undergone a vaginal douche during genital cleansing, 41.1% had experienced pain during urination at some point in their lives, and 34.5% had gone to the doctor while 65.5% had not taken any action. It was determined that 38.8% of the participants experienced unnatural odors and pain after sexual intercourse. About 31.4% of the women surveyed went to the doctor in case of pain and burning, while 68.6% took no action. The GHDE score was found to be significantly lower in women who had complaints of burning during voiding, use of common underwear, and had been educated on genital hygiene. The women who did not have complaints of pain or burning during voiding (81.608 ± 11.02), did not use common underwear (80.738 ± 10.94), had taken education about genital hygiene (84.198 ± 9.64) had a significantly higher average of GHDE scores than other women (Table 4).

DISCUSSION

Based on the prevalence and risks of women with genital infection, this study aimed to investigate and compare the genital hygiene behaviors of pregnant, nonpregnant, and postpartum women to determine risky genital hygiene behaviors. According to the responses to the GHDE questions consisting of 27 questions about genital hygiene behaviors, the frequency of positive behaviors was higher in women in the postpartum group than in the other

Table 3. Comparing the participants' genital hygiene behavior score

	Non-pregnant Mean±SD	Pregnant Mean±SD	Postpartum women Mean±SD	Total Mean±SD	p
GHDE score averages	78.55±11.93	80.37±10.57	82.49 ±10.81	80.45±11.14	0.056
*Comparison of GHDE score averages of participants according to socio-demographic variables					
	n	%	GHDE score		p
Education					
Primary school	209	68.8	80.11±11.18		
High school	52	17.1	79.33±11.93		0.137
University	43	14.1	83.51±9.59		
Profession/work					
Housewife	211	69.4	79.33±11.51		
Working	93	30.6	83.01±9.83		0.008
Education of husband					
Primary school	84	27.6	76.71±11.98		
Secondary school	71	23.4	80.32±11.36		
High school	102	33.6	80.85±9.83		0.001
University*	47	15.5	86.49±9.31		
Work of husband					
Officer	49	16.1	82.45±9.63		
Free	106	34.9	80.30±11.34		0.380
Worker	149	49.0	79.91±11.45		
Income status					
Good	45	14.8	84.27±10.67		
Medium	216	71.1	81.00±10.25		0.001
Bad*	43	14.1	73.69±13.19		
Family type					
Nuclear family	252	82.9	81.53±11.20		
Extended family	52	17.1	75.27±9.30		0.001
Social security					
Yes	264	86.8	81.13 ±11.13		
No	40	13.2	76.05±10.32		0.007
Longest living spot					
Village	40	13.2	78.08±12.25		
District	98	32.2	78.34 ±10.70		0.007
Province*	166	54.6	82.28 ±10.85		

GHDE: Genital hygiene behavior inventory; SD: Standard deviation; p-value presented the ANOVA and Student's t-test results; *Significant differences were found by the Scheffe post-doc test

groups. According to the answers given by the pregnant, non-pregnant, and postpartum women included in the study, similarly determined features in the data, such as their education, the education of their husbands, the time spent living at one residence, family type, abortion and curettage conditions, attention to the cleanliness of the sexual area, hygiene practices before and after toilet use, common use of underwear with other family members at home, and education about genital hygiene were identified. In our study, it was found that there was a significant difference be-

tween the educational level of the spouse, income level, core family structure, where they lived, and the GHDE scale point average ($p < 0.05$). It was revealed that the mean GHBI scores of women who were employed, had a spouse with university-based education level, perceived their income level as good and medium, had lived with a nuclear family, and were presently living in a city were higher than the scores of other women ($p < 0.05$). One of the vital determinants of using hygienic method was socio-economic status of the women. Education, economic status, and social status are

Table 4. Participant's individual habits and practices related to genital hygiene and the relationship between genital hygiene behavior score averages

	n	%	p*
Vaginal douche during genital cleansing			
Yes	228	75.3	0.844
No	75	24.7	
Pain-burning complaints during voiding			
Yes	125	41.1	0.031
No	179	58.9	
Practices for this			
Nothing	199	65.5	0.101
Go to the doctor	105	34.5	
Malodorous discharge and intercourse pain after sexual			
Yes	118	38.8	0.057
No	186	61.2	
Practices for this			
Nothing	208	68.6	0.231
Go to the doctor	95	31.4	
Common use of underwear			
Yes	6	2.0	0.002
No	298	98.0	
Bath and toilet water supply			
Transport water	9	3.0	0.882
Tap water	295	97.0	
The way laundry is washed			
Washing machine	299	98.4	0.608
Handwashing	5	1.6	
Education about genital hygiene			
No	218	71.7	0.001
Yes	86	28.3	

*Student t test was used

decisive in use of hygienic methods (13). Other studies have shown that in women living in rural areas of Turkey, there were significant differences between genital hygiene behaviors and women's education, marital status, work status, income, and their husbands' work and education (14, 15). Erbil et al. (2013) found that the education level, occupation, level of income, and number of children are effective factors for determining the GHDE scale point regarding the socio-demographic characteristics (16). Also, another study reported that women who did not have health insurance, were unemployed, and were living in large crowded families had lower GHBI scores (17). Hamed (2015) emphasized that 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 (18). Similarly, another study found that the hygiene behavior may not depend on the woman's reproductive period, since it is mostly affected by socio-economic

conditions, which further depend on social environment and better health and economic conditions of women, which in turn positively affect their genital hygiene behavior (14, 19). It is an expected outcome that women's higher level of education, adequate family income, and working status positively affect their attitudes and actual health behaviors, increase their awareness of health protection, and promote health-seeking behavior.

When the averages of the GHDE scores are compared according to the level of education of women and their husbands, 27.6% of his/her husband are lower than those of the other GHDE scores. At the same time, the level of education and GHDE score are seen to increase linearly. Similarly, when the level of education of the women and their husbands increases, the average GHDE score of the woman being surveyed was found to increase (7). In Kisa and Taskin's (2009) study, cases of vaginal infection diagnosis were found to vary according to the level of education of the women's husbands (20). According to the results of the analysis, a statistically significant relationship was found between the educational level of the women's husbands and the risk of acquiring a vaginal infection. Women whose partners had their primary school degrees had a higher risk of getting vaginal infections, i.e., were 3.3 times more likely than women whose partners were university graduates. The results also showed a significant correlation between genital hygiene and the educational status of women and their partners, and it was evident that the lack of education was significantly associated with genital hygiene among women, whereas certain studies also support these findings (3, 14, 21).

The GHDE scale score used in the study was 78.5 ± 11.9 for non-pregnant women, 80.4 ± 10.6 for pregnant women, and 82.5 ± 10.8 for postpartum women. As a result of the statistical analyzes performed, there was no significant difference between the groups in terms of the average of the total scale score ($F=2.900$, $p=0.056$). Similarly, in Kavlak et al.'s (2010) study, the mean score of the pregnant women's GHDE was 81.68 ± 11.79 (22); in Ege and Eryilmaz's (2005) study of nonpregnant women with GHDE, the mean scale score was 77.7 ± 12.8 (10). Erbil et al. (2013) studied married women and found that the GBHI mean score was found to be 80.28 ± 10.82 (16). Whether the woman is pregnant or not, we can link a lack of education on genital hygiene to a reduced focus and sensitivity to the issue. For this reason, we think that midwives and nurses should provide education and counseling about genital hygiene before and after pregnancy.

It is hygienic that underwear should be changed every day under normal conditions and especially during the period when the vaginal discharge is concentrated; ideally, it should be changed more than once during the day (23). According to the studies of Yagmur (2007), Kisa (2007), Ocaktan et al., (2010), the rate of women changing underwear every day is 60% or less. Similarly, our data showed that 60.2% regularly change their underwear daily (2, 24, 25). Regarding the ironing of underwear; Hadımlı (2012) found that 24% of women iron their underwear (26). In our study, similarly, this percentage was determined as 24.7%. This finding suggests that ironing of underwear in our country is not common, as a result of which here is an increased risk of being exposed to genital infection and that adequate hygiene is not achieved.

Literature studies suggest that choosing cotton underwear instead

of synthetic or nylon underwear reduces the risk of vaginal infection (27). Since nylon and synthetic underwear do not absorb perspiration as much as cotton, the perineum remains humid and is at an increased risk of genital tract infections (18). Previous studies have shown that the vast majority of women (approximately 80–90%) use cotton underwear (8, 24). In our study, the rate of wearing cotton linen was found to be as low as 42.8% in each evaluation. Again, these results showed that women have a very low level of education of genital hygiene (28%) and are unable to be adequately educated on the matter further.

In studies examining vaginal douches, it was observed that the frequency of women's vaginal showering was between 38.5% and 66.6%. The idea of a hygienic vaginal appetite was shown to increase toward the advanced ages. This rate was 53.5% for people under 35 years old and 79.2% for those over 55 years old (8, 24). Performing a vaginal douche depends on cultural and religious beliefs (14). As a part of personal hygiene, Turkish women report frequent vaginal douches for the purpose of worship or ghusl (full-body ritual purification) after menstruation, whereas women in other countries often consider vaginal douching as a part of female hygiene (14, 28). However, this incorrect hygiene practice has caused health problems in women, leading to an increased risk of disruption of the vaginal flora, chronic colonization of bacteria and enhancement of their emigration into the upper genital tract, and an increase in the occurrence of BV, HIV, and PID (14). Unfortunately, in this study, vaginal shower application was found to be quite high (75.2%). In addition, 41.1% of women were suffering from pain during urination at some point in their life. About 34.5% of women visited a doctor but 65.5% did not take any action. It was determined that 38.8% of the women had an offensive vaginal odor and that they experienced pain after sexual intercourse. About 31.3% went to the doctor complaining of pain and burning but 68.4% did not take any action. These results show that most women tend to avoid going to a doctor during the early stage of the infection. However, early diagnosis and treatment is critical and can improve the quality of life and minimize the risk of complications and permanent dysfunction (29). This situation is undoubtedly related to the lack of information on the subject, which depends on the level of education of women.

This research shows that the average scores of genital hygiene behavior of women in all three groups are not very high. There was no statistically significant difference in terms of genital hygiene behaviors of pregnant, nonpregnant, and postpartum women. However, only one-third of the women were found to have been educated in proper genital hygiene practices, which is why some incorrect practices are still continued. We are of the opinion that increasing the public education for all women on this subject is extremely important. Nurses play an important role in the prevention, early diagnosis, and treatment of genital infections. Midwives and nurses, especially those working in primary health care institutions, have great responsibilities in terms of making the appropriate diagnosis and formulating treatment approaches. It is also clear that public education needs to be increased in order to reach women of all age groups to raise awareness of genital hygiene.

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Ethics Committee Approval: Necessary permits were obtained from the Ethics Board of the Ege University Nursing Faculty (ethics committee approval: 2015-73) and the Gynecology and Obstetrics Department of the Ege University Hospital for conducting this study.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: GE, HK, and RO conceived and designed the study. RO and HK were involved in the data collection and analyzes. All the authors were involved in the writing, review of the manuscript, and approved the final version of this manuscript.

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