ORİJİNAL MAKALE / ORIGINAL ARTICLE

Balıkesir Sağlık Bilimleri Dergisi / BAUN Sağ Bil Derg
Balıkesir Health Sciences Journal / BAUN Health Sci J
ISSN: 2146-9601- e ISSN: 2147-2238
Doi: https://doi.org/10.53424/balikesirsbd.1376483

Evaluation of Genital Hygiene Behaviors and Vaginal Douching Practices of Married Women Aged 15-49 in Fertile Period

Aytül HADIMLI[1], Mahide DEMİRELÖZ AKYÜZ[1], Serap ÇETİNTAŞ ÖNER[2], Birsen KARACA SAYDAM[1], Esin ÇEBER TURFAN[1], Neriman SOĞUKPINAR[1]

[1] Ege University, Faculty of Health Sciences, Department of Midwifery
[2] Hakkari University, Faculty of Health Sciences, Department of Midwifery

Geliş Tarihi / Received:*16.10.2023,* ***Kabul Tarihi / Accepted:*** *30.11.2023*

ABSTRACT

Objective: Analyzing the genital hygiene behaviors and vaginal douching practices of married women aged 15-49 in the fertile period. **Materials and Methods:** Married women aged 15-49 in the fertile period (N: 142) registered to the Family Health Center No 11 in Bornova District of İzmir province constituted the universe of the study, while 120 women accepting to participate in the study constituted its sample. Data were collected through the "Women's Descriptive Features Questionnaire" and "Genital Hygiene Behavior Inventory (GHBI)". The t-test, Kruskal-Wallis H test, and Mann-Whitney U test were used in independent samples with percentage calculations in evaluating data, while the correlation between variables was assessed with the chi-squared test. **Results:** The mean GHBI score of women is 78.36±9.3. A statistically significant difference between women's educational background, income status, family type, vaginal douching, and complaints about a malodorous vaginal discharge experience among their socio-demographic features, and their mean GHBI score ($p<0.05$). **Conclusion:** The total score that the women obtained from the inventory reflects a mid-level genital hygiene behavior on their part. It can be suggested that training sessions be organized for their necessities and awareness on the issue be raised for them to earn correct genital hygiene behaviors.

Keywords: Women's Health, Genital Hygiene, Vaginal Douching.

Doğurganlık Dönemindeki 15-49 Yaş Evli Kadınların Genital Hijyen Davranışlarının ve Vajinal Duş Uygulamalarının Değerlendirilmesi

ÖZ

Amaç: Doğurganlık dönemindeki 15-49 yaş arası evli kadınların genital hijyen davranışlarının ve vajinal duş uygulamalarının incelenmesi. **Gereç ve Yöntemler:** İzmir ili Bornova ilçesi 11 No'lu Aile Sağlığı Merkezi'ne kayıtlı 15-49 yaş arası doğurgan dönemdeki evli kadınlar (N: 142) araştırmanın evrenini, araştırmaya katılmayı kabul eden 120 kadın ise örneklemini oluşturmuştur. Veriler "Kadının Tanıtıcı Özellikleri Anketi" ve "Genital Hijyen Davranış Envanteri (GHBE)" ile toplanmıştır. Verilerin değerlendirilmesinde yüzde hesaplamaları ile bağımsız örneklemlerde t-testi, Kruskal-Wallis H testi ve Mann-Whitney U testi kullanılırken, değişkenler arasındaki korelasyon ki-kare testi ile değerlendirilmiştir. **Bulgular:** Kadınların ortalama GHBI skoru 78.36±9.3'tür. Kadınların sosyo-demografik özelliklerinden eğitim durumu, gelir durumu, aile tipi, vajinal duş yapma ve kötü kokulu vajinal akıntı şikayeti ile GHBI puan ortalamaları arasında istatistiksel olarak anlamlı bir fark bulunmuştur ($p<0.05$). **Sonuç:** Kadınların envanterden aldıkları toplam puan orta düzeyde bir genital hijyen davranışını yansıtmaktadır. Doğru genital hijyen davranışları kazanmaları için ihtiyaçlarına yönelik eğitimler düzenlenmesi ve bu konuda farkındalık yaratılması önerilebilir.

Anahtar Kelimeler: Kadın Sağlığı, Genital Hijyen, Vajinal Duş.

Sorumlu Yazar / Corresponding Author: Mahide DEMİRELÖZ AKYÜZ, Ege University, Faculty of Health Sciences, Department of Midwifery, İzmir, Türkiye.
E-mail: mahide.demireloz@ege.edu.tr

Bu makaleye atıf yapmak için / Cite this article: Hadımlı, A., Demirelöz Akyüz, M., Çetintaş Öner, S., Karaca Saydam, B., Çeber Turfan, E., & Soğukpınar, N. (2024). Evaluation of genital hygiene behaviors and vaginal douching practices of married women aged 15-49 in fertile period. *BAUN Health Sci J, 13*(1), 67-74. https://doi.org/10.53424/balikesirsbd.1376483

INTRODUCTION

The 15-49 age interval, the fertile period of women, is a period in which reproductive health problems occur. Urogenital infection is one of the most common reasons for women in the fertile period to visit gynecology policlinics. Every year, approximately one million women in the world, at least 75% of whom have genital infection history, are diagnosed with urogenital system infection (Calik et al., 2020). Factors leading to genital infection in women are varied. The fact that the urethra, vagina, and anus are anatomically close to one another is an important predisposing factor for genital infections. Also, factors such as low-level educational background, incorrect genital hygiene practices, vaginal douching, and improper perineum cleaning in the toilet are effective in the genital infection development (Hadımlı et al., 2012; Calik et al., 2020). In regional studies carried out in Turkey, genital infections and risky hygiene behaviors that could lead to vaginal infections have been stated to be common (Koştu and Taşçı, 2009; Yaman et al., 2016). One of the most important of these risky behaviors is vaginal douching. Maintaining its existence among women with different cultures throughout the world, vaginal douching (VD) is defined as the act of washing the vagina with water, soap, or other chemical products (Okumuş and Demirci, 2014; Martino and Vermund, 2002). Vaginal douching behavior is a complicated issue affected by psychological, social, and cultural determinants (Martino and Vermund, 2002). McKee et al. (2009) base the reasons for women to practice vaginal douching on two conceptual models, namely, the cosmetic model and infection control model (McKee et al., 2009). Women douche to feel themselves to be clean during/after menstruation or after sexual intercourse within the context of the cosmetic model, and to eliminate itching and odor and prevent sexually transmitted diseases or vaginal infections within the context of the infection control model (Okumuş and Demirci, 2014; Martino and Vermund, 2002; Cottrell, 2003). Apart from the aforementioned models, it is stated in studies done in Muslim countries that women practice vaginal douching as part of their ghusl ablution, which is a ritual act of washing the whole body so that there is no dry area on the body after intercourse. Although no such requirement is specified in religious sources, many women believe that they will not be clean if they do not douche during their ghusl ablution (Arslantas et al., 2010; Sunay et al., 2011; İlmihal, 2014; Yaman et al., 2016). In a study carried out by the Turkish Ministry of Health in 2014, 96.2% of women were expressed to douche for hygiene, while 52.8% and 12.7% were stated to practice it for religious reasons and to prevent pregnancy, respectively (Directorate-General for Health Research, 2014).

Throughout the world, it has been determined that more than 25% of women douche regularly, while 73% have practiced VD in one period of their lives (Ekpenyong et al., 2014). According to the National Survey of Family Growth (NSFG) carried out in the US, the percentage of douching women 15-49 years of age was 15.8% in 2017 (National Survey of Family Growth, 2019). There are also studies demonstrating VD practice to be common in African and Far East countries. The percentage of VD practice has been stated to be as high as 79.2% in Nigeria, 89.6% in Indonesia, and 76.7% in Cambodia (Ekpenyong et al., 2014). The frequency of VD practice ranges from 22.5% to 80.6% in different regions in Turkey (Sunay et al., 2011; Yaman et al., 2016; Guzel et al., 2011; Orak and Canuygur, 2014; Coşkun et al., 2017; Yanıkkerem and Yasayan, 2016).

Vaginal douching leads to important changes in vaginal flora. The pH level of the vagina is disrupted, and the quantity and quality of lactobacilli change, leading to them being replaced by pathogenic microorganisms (Martino et al., 2002; Wan and Jacobs, 2018; Luong et al., 2010). Gynecological problems scientifically proven to be related to VD are namely increased chlamydia and bacterial vaginosis prevalence and vaginal infection history (Martino et al., 2002; Arslantas et al., 2010; Wan and Jacobs, 2018; Yıldırım et al., 2020). A pelvic inflammatory disease caused by infection is one of the most common reasons for ectopic pregnancy and infertility (Martino et al., 2004). In addition, vaginal douching causes chronic bacterial colonization within the uterus and stimulates preterm labor with the inflammatory response (Luong et al., 2010; Fiscella, 2002). In a study analyzing the genital hygiene habits of women with and without genital infection in Turkey, 52.4% of the women with genital infection were stated to have performed VD (Süt, 2016).

A common reproductive health problem, genital tract infections are closely related to a woman's personal hygiene besides various factors. Perceiving the reality of VD, performed by women for genital hygiene, and the risks caused by genital hygiene practices are extremely crucial. Health personnel's knowledge on the ways of and the reasons for women to perform genital hygiene is one of the essential points in providing health training and planning care and treatment in case of a disease. In this regard, the genital hygiene behaviors and vaginal douching practices of married women aged 15-49 in the fertile period have been analyzed in this study.

MATERIALS AND METHODS

Study type

This study is a cross-sectional study designed to evaluate the genital hygiene behaviors and vaginal douching practices of married women aged 15-49 in the fertile period.

Study group

This research is a cross-sectional study planned to evaluate the genital growth and normal douche application status of married women of reproductive age between the ages of 15-49. In the region where the research was conducted, all married women of reproductive age (N: 142) between the ages of 15-49, registered to the Family Health Center No. 11, which is at a medium socio-economic level in the region of XXXX District of Izmir province, were created, but they were not systematically examined; The purpose of

recruitment was explained to all women and they were invited to participate, and a total of 120 women participated in the study (participation rate 84.50%).

Procedures

Created by the researchers in light of the related literature, 11 questions regarding the descriptive features of the women and 17 questions regarding their obstetric and gynecological features (the number of pregnancies and births, live birth history, abortion status, the family planning method used, the existence of complaints regarding urinating, the existence of post-sexual intercourse complaints, the existence of malodorous discharge, features of the discharge, and the status of seeking medical advice) were included in the questionnaire used in the study. The "Genital Hygiene Behavior Inventory" (GHBI), developed by Ege and Eryılmaz in 2005, was used to determine the participating women's genital hygiene behavior status. Each statement in this Likert-type scale is scored with 1 to 4 points. For the positive questions, 1 point, 2 points, 3 points, and 4 points were assigned to the responses of "never", "sometimes", "frequently", and "always" respectively. The lowest score to be obtained from the GHBI is 27, while the highest is 108. The genital hygiene behavior level is reflected to be more satisfactory as the score obtained from the inventory gets higher. The research data was collected via the face-to-face interview method.

Statistical analysis

The data were analyzed by regarding their significance level as $p<0.05$ in the SPSS 16.0 software package. The correlation between the number and percentage distribution of the results regarding the women's socio-demographic features and the GHBI points obtained by them, and their urogenital system symptoms were evaluated with the t-test, the Kruskal-Wallis H test, and the Mann-Whitney U test, while the correlation between the categorical variables was assessed with the chi-squared test.

Ethical considerations

Necessary permits were obtained with the protocol no 111-2017 numbered 02/58 from Ege University Scientific Research and Publication Ethics Committee to conduct the study, which was supported under Ege University Scientific Research Projects. Besides, to carry out the study, the application permit from the Turkish Ministry of Health Public Health Board, and the informed consent from the women participating in the study were obtained.

RESULTS

The mean age of the women participating in the study is 29.21 ± 7.18. Of these participants, 40.8% are elementary school graduates, 90.9% are homemakers, and all of them have health coverage. Their mean age upon marriage is 20.4 ± 3.4, while their mean age upon the first pregnancy is 21.06 ± 3.38, and 75.7% have been pregnant for at least two times and their mean pregnancy number is 2.77 ± 1.69. 37.8% of the women have had at least one natural miscarriage, and 27.7% have undergone an abortion. 40.3% of the women have been utilizing a family planning method, and 10% among these use the conventional method, while the remaining 90% use the modern method. 32.5% of women use vaginal douche. All of those who do vaginal douche stated that they use it for cleaning and ghusl ablution.

The mean total GHBI score of the women participating in the study is 78.36 ± 9.3 (min: 58, max: 108). The highest and lowest scores obtained in this study from the GHBI, from which the lowest score to be obtained is 27 and the highest is 108, were found to be 108 and 58 respectively. The fact that 60.8% of the women responded positively in the inventory (8.3%: sometimes, frequently: 7.5%, always: 45%) to the statement "I wash from the region where I have my bowel movement towards the area where I urinate in the toilet", which is an indicator of an incorrect genital hygiene behavior, demonstrates that two out of every three women have incorrect hygiene habits (Table 1).

Table 1. The Results from the Genital Hygiene Behavior Inventory (GHBI).

Genital Hygiene Behavior Inventory	Never		Sometimes		Frequently		Always	
	N	%	N	%	N	%	N	%
1. I participate in educational meetings conducted on issues regarding sexual health.	86	71.7	27	22.5	2	1.7	5	4.2
2. I monitor the genital area carefully with regard to diseases symptoms.	24	20.0	22	18.3	24	20.0	50	41.7
3. I follow the news published on written and visual media about sexual health.	39	32.5	36	30.0	15	12.5	30	25.0
4. I obtain information from health personnel about genital area hygiene.	49	40.8	37	30.8	9	7.5	25	20.8
5. I visit a gynecologist regularly.	37	30.8	33	27.5	27	22.5	23	19.2
6. I care about genital area hygiene.	1	0.8	5	4.2	21	17.5	93	77.5
7. I daily change my underwear.	4	3.3	10	8.3	19	15.8	87	72.5
8. I iron my underwear.	58	48.3	26	21.7	5	4.2	31	25.8
9. My underwear is made of cotton.	7	5.8	22	18.3	11	9.2	80	66.7

Table 1. (Continued) The Results from the Genital Hygiene Behavior Inventory (GHBI).

10. I use hygenic pads during my period.	15	12.5	6	5.0	6	5.0	93	77.5
11. I take a shower during my period.	24	20.0	22	18.3	12	10.0	62	51.7
12. I request my partner to use a condom when I experience malodorous discharge.	57	47.5	17	14.2	11	9.2	35	29.2
13. I dry with toilet paper after cleaning my genital area with water.	10	8.3	8	6.7	8	6.7	94	78.3
14. I visit a doctor when I experience malodorous discharge.	9	7.5	15	12.5	13	10.8	83	69.2
15. I visit a doctor when I have itching in the genital area.	13	10.8	14	11.7	13	10.8	80	66.7
16. I visit a doctor when I experience pain or bleeding during sexual intercourse.	18	15.0	9	7.5	13	10.8	80	66.7
17. I use a piece of cloth during my period.	83	69.7	12	10.0	7	5.8	18	15.0
18. I wash my hands before changing my pad.	24	20.0	16	13.3	11	9.2	69	57.5
19. I wash my hands after changing my pad.	1	0.8	2	1.7	4	3.3	113	94.2
20. I wash my hands before sexual intercourse.	32	26.7	17	14.2	11	9.2	60	50.0
21. I wash my hands after sexual intercourse.	3	2.5	5	4.2	5	4.2	107	89.2
22. I wash my genital area before sexual intercourse.	37	30.8	10	8.3	5	4.2	68	56.7
23. I wash my genital area after sexual intercourse	8	6.7	-	-	8	6.7	104	86.7
24. I wash my hands before going to the bathroom.	43	35.8	27	22.5	6	5.0	44	36.7
25. I wash my hands after going to the bathroom.	1	0.8	-	-	7	5.8	112	93.3
26. I wash from the region where I have my bowel movement towards the area where I urinate in the toilet.	46	38.3	10	8.3	9	7.5	54	45.0
27. I always use a piece of cloth.	59	49.2	29	24.2	11	9.2	21	17.5

The difference between the educational background, income status, and family type among the women's socio-demographic features and their mean total GHBI score was detected to be statistically significant ($p<0.05$), while their employment status was not found to create any difference in the total GHBI score (Table 2).

32.5% of the women stated that they performed vaginal douching, while 42.5%, 47.5%, and 49.2% expressed that they experienced dysuria, post-coital pain/soreness, and malodorous vaginal discharge respectively in the recent year. A significant difference was found between the women's total GHBI scores and vaginal douching practices, and whether they experienced malodorous vaginal discharge in the recent year ($p<0.05$) (Table 3).

Table 2. The correlation between the total Genital Hygiene Behavior Inventory (GHBI) scores and the socio-demographic features.

	N	%	X± SD	Test	p
Educational background					
Illiterate	13	10.8	78.07 ± 8.94	$X^2 = 12.48$*	**0.01**
Elementary school	49	40.8	77.28 ± 9.52		
Middle school	24	20.0	75.08 ± 9.92		
High school	27	22.5	82.59 ± 8.62		
University	7	5.9	84.85 ± 6.61		
Income status					
Income less than expense	44	36.7	76.04 ± 11.09	$X^2 = 6.28$*	**0.04**
Income and expense equal	70	58.3	79.92 ± 8.40		
Income more than expense	6	5.0	81.16 ± 10.30		
Employment status					
Employed	10	8.3	80.90 ± 6.87	U = 431.00**	0.25
Unemployed	110	91.7	78.35 ± 9.88	Z = -1.13	
Family type					
Nuclear family	92	76.7	79.80 ± 9.80	U = 879.50**	**0.01**
Extended family	28	23.3	74.50 ± 8.13	Z = -2.53	

*Kruskal-Wallis H Test **Mann-Whitney U Test

Table 3. The correlation between the total Genital Hygiene Behavior Inventory (GHBI) scores and the urogenital system results.

	N	%	X± SD	t	p
Vaginal Douching Practice					
Yes	39	32.5	76.05 ± 8.10	-2.001	**0.04**
No	81	67.5	79.77 ± 10.17		
Dysuria complaints in the recent year					
Yes	51	42.5	77.21 ± 8.80	-1.319	0.19
No	69	57.5	79.56 ± 10.22		
Post-coital pain/soreness complaints in the recent year					
Yes	57	47.5	78.08 ± 9.03	-.514	0.60
No	63	52.5	79.00 ± 10.27		
Malodorous vaginal discharge in the recent year					
Yes	59	49.2	76.67 ± 9.03	-2.13	**0.03**
No	61	50.8	80.39 ± 10.20		

Upon being asked what they did to get rid of their complaints, 86.3% of the ones with dysuria complaints, 49.1% of the ones with post-coital pain/soreness complaints, and 62.7% of the ones with malodorous vaginal discharge stated that they visited their doctors. 32.5% of the women stated that they had a vaginal douche, 42.5% complained of dysuria in the last year, 47.5% complained of postcoidal pain, and 49.2% complained of foul-smelling vaginal discharge. Among the women having experienced discharge, 44.1% stated their discharge to be white and sticky, while 45.8% expressed the discharge to be malodorous. A statistically significant difference was detected in the comparison between vaginal douching practices and whether there were any complaints about malodorous vaginal discharge ($p<0.05$) (Table 4)

.

Table 4. The valuation of the correlation between vaginal douching practices and urogenital symptoms.

	Vaginal Douche Practice		Test	
	Practices It	Does not practice it		
Urogenital symptoms	**n (%)**	**n (%)**	**X^2**	**p**
Dysuria complaints in the recent year				
Yes	21 (41.2)	30 (48.8)	3.044	0.081
No	18 (26.1)	51 (73.9)		
Post-coital pain/soreness in the recent year				
Yes	23 (40.4)	34 (59.6)	3.050	0.081
No	16 (25.4)	47 (74.6)		
Malodorous vaginal discharge in the recent year				
Yes	27 (45.8)	32 (54.2)	9.306	**0.002**
No	12 (19.7)	49 (80.3)		

DISCUSSION

Urogenital infections are the most frequently encountered infections throughout the world. Genital hygiene has an important role in being protected against genital infections (Calik et al., 2020). In this study, the mean GHBI score of the participating women is 78.36±9.3. If evaluated within the context of the minimum and maximum scores to be obtained from the inventory, these women can be said to have mid-level genital hygiene behaviors. The mean GHBI scores were found to be 77.7±12.8 in the study carried out by Ege and Eryılmaz in which they analyzed genital hygiene, 77.41±9.05 in the study done by Çalık et al., 80.90±10.54 in the study done by Orak and Canuygur, and 78.96±11.65 in the multicenter study of Apay et al. in which seven provinces from seven geographical regions of Turkey were included in the sample (Ege and Eryılmaz, 2006; Çalik et al., 2020; Orak and Canuygur, 2014; Apay et al., 2014). The fact that the scores obtained from the scale are close to each other in numerous studies in which the same inventory was used puts forth the interactively learned aspect of genital hygiene applications socially.

More than half of the women responded "never" to the statements of *"I participate in educational meetings conducted on issues regarding sexual health" (71.7%), "I obtain information from health personnel about the genital area hygiene"* (40.8%), and *"I request my partner to use a condom when I*

experience malodorous discharge" (57.5%), and *"always"* to the statement *of "I wash from the region where I have my bowel movement towards the area where I urinate in the toilet"* (45.0%). Even though these genital hygiene applications are thought to be efficient when evaluated with a scale tool, it is possible to say that some incorrect behaviors have turned into a habit. After the planned genital hygiene training organized by Ege % Eryılmaz for women aged 15-49 who were diagnosed with genital infection, a significant increase was detected in the women's mean GHBI score (Ege and Eryılmaz, 2006). This is important in that it demonstrated the effects of health training on behavioral changes.

Among the women participating in the study, the ones with an educational background of high school or higher, a high status of income, and living within a nuclear family were detected to have better genital hygiene behaviors. In numerous studies carried out, educational background and income status, and genital hygiene have been found to be correlated (Koştu and Beydağ, 2009; Orak and Canuygur, 2014; Oner and Turfan, 2020). It can be stated that as people have higher educational backgrounds, they become more knowledgeable regarding hygienic issues and their behaviors develop more positively, and as they have a higher income status, they can afford hygienic products more easily. On the other hand, these results are assessed to be important in that they show the effects of the extended family type on passing down incorrect conventional applications. It is crucial to focus on this field in structured training to break this chain.

A harmful practice for women's health done throughout the world and especially in Asia and Africa, the vaginal douching rate was found to be 32.5% in this study. The total GHBI scores of the women who douche and have vaginal discharge complaints are significantly lower ($p<0.05$). In various studies conducted in Turkey, vaginal douching has been stated to be extremely common among women. 22.5% of the women in a study done in a training and research hospital in Istanbul (Orak and Canuygur, 2014), 47.7% of the women in a study conducted in Eskisehir (Arslantas et al., 2010), 59.4% of the women in a study done in Ankara (Sunay et al., 2011), and 80.6% of the women in a study carried out in rural settlement in the Southeastern Anatolia Region of Turkey (Guzel et al., 2011) have all been detected to douche. All these studies were carried out in different geographical regions. In rural settlements, vaginal douching is more common due to conventional and extended family types. Determinants such as education, culture, religious belief, and economy which vary regionally in Turkey can be stated to have an impact on vaginal douching practices. This can also suggest that women may be reluctant to talk about their vaginal douching practices.

Incorrect genital hygiene and vaginal douching are demonstrated to be among the most important reasons for genital infections (Ekpenyong and Davis, 2013; Yanıkkerem and Yasayan, 2016; Calik et al., 2020; Felix et al., 2020). While no significant difference was observed in a study analyzing the correlation between vaginal douching and vaginal bacterial colonization, it was also stated that women who douched had more vaginal infection history (Yıldırım et al., 2020). In studies analyzing the correlation between VD and sexually transmitted diseases, HPV and HIV infections were stated to occur more in women who douched (Luo et al., 2016; Esber et al., 2016). The significant difference between vaginal douching and malodorous vaginal discharge complaints and the decreased mean total GHBI scores of these women in our study, in which we have ascertained two out of every three women to practice vaginal douching, support the literature.

Limitations of Study

This study was conducted in İzmir province and cannot be generalized to other provinces and regions.

CONCLUSION

It has been observed that those who do vaginal douche have incorrect genital hygiene behaviors and attitudes such as "It makes me feel clean", "I want to be protected from sexually transmitted infections" and "I need to do vaginal douche during ablution". Especially in these women, there was a significant difference in the frequency of complaints of foul-smelling discharge in the last year. Giving up on conventional methods that are practiced in our country just as in many other cultures and have turned into a habit can only be solved by raising women's awareness. Education on genital hygiene practices starts during the childhood period and is provided by families. Therefore, incorrect practices become a habit in childhood and persist in later periods. Structured training with explanations based on cause-effect relationships should be organized on VD, which is regarded to be a part of genital hygiene and religious practices in Muslim societies.

Primarily, professional health personnel working in preventive health services should explain that washing the inside of the vagina is an incorrect practice along with its consequences while monitoring those aged 15-49, reasons behind vaginal douching should be examined, and the issue should be assessed from every aspect. Problems raised by this cultural but incorrect habitual practice can only be effectively solved with the help of multidisciplinary cooperation of a team formed by gynecologists, midwives, nurses, sociologists, teachers, and religious experts and the inclusion of the non-governmental organizations of the aforementioned professions.

Acknowledgement
The authors would like to extend their sincere thanks to anyone who contributed to this study.

Conflict of Interest
The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions
Plan, design: AH, MDA; **Material, methods and data collection:** AH, MDA, SÇÖ, BKS, EÇT, NS; **Data analysis and comments:** AH, MDA, SÇÖ; **Writing and corrections:** AH, MDA, SÇÖ, BKS, EÇT, NS.

Funding
This study was supported by Ege University Scientific Research Projects Coordinator.

REFERENCES

Apay, S., E., Özdemir, F., Nazik, E., Potur, D., C., Hadımlı, A., Tanrıverdi, D., Alaca, C. (2014). Determination of the genital hygiene behaviours of women in seven different provinces: a multicentred cross-sectional study. *Journal of Anatolia Nursing and Health Sciences*, *17*(4), 245-252. https://doi.org/10.17049/ahsbd.05569

Arslantas, D., Karabagli, H., Koc, F. (2010). Vaginal douching practice in Eskisehir in Turkey. *Journal of Public Health and Epidemiology, 2*(9), 245-250.

Calik, K., Y., Erkaya, R., İnce, G., & Yildiz, N., K. (2020). Genital hygiene behaviors of women and their effect on vaginal infections. *Clinical and Experimental Health Sciences, 10*(3), 210-216. https://doi.org/10.33808/clinexphealthsci.565845

Coşkun, A.,M., Yakıt, E., Karakaya, E. (2017). Evaluation of the use of vaginal tampons and vaginal douche practices among women. *Journal of Human Sciences*, *14*(1), 74-88. doi: https://doi.org/10.14687/jhs.v14i1.4308

Ege, E., Eryılmaz, G. (2006). The effect of planned education given to women on genital hygiene behaviors. *Journal of Anatolia Nursing and Health Sciences*, *9*(3), 8-16.

Ekpenyong, C.,E, Davies, K.,G. (2013). Associations between vaginal douching practice and lower genital tract symptoms and menstrual disorders among young women: a search for risk modulating factors. *Advances in Sexual Medicine*, *3*(4), 76-84. https://doi.org/10.4236/asm.2013.34012

Ekpenyong, C.,E, Daniel, N.,E., Akpan, E.,E. (2014). Vaginal douching behavior among young adult women and the perceived adverse health effects. *Journal of Public Health and Epidemiology*, *6*(5), 182-191. https://doi.org/0.5897/JPHE2014.0622

Esber, A., Rao, N., Norris, A., Reese, P. C., Kandodo, J., Nampandeni, P., ... & Turner, A. N. (2016). Intravaginal practices and prevalence of sexual and reproductive tract infections among women in rural Malawi. *Sexually transmitted diseases, 43*(12), 750. https://doi.org/0.1097/OLQ.0000000000000531

Felix, T., C., de Araújo, L., B., de Brito Röder, D., V., D., & dos Santos Pedroso, R. (2020). Evaluation of vulvovaginitis and hygiene habits of women attended in primary health care units of the family. *International Journal of Women's Health, 12*, 49. https://doi.org/0.2147/IJWH.S229366

Fiscella, K., Franks, P., Kendrick, J., Meldrum, M., Kieke, B. (2002). Risk of preterm birth that is associated with vaginal douching. *Am J Obstet Gynecol, 186*, 1345–1350. https://doi.org/10.1067/mob.2002.122406

Guzel, A.,I., Kuyumcuoglu, U., Celik, Y. (2011). Vaginal douching practice and related symptoms in a rural area of Turkey. *Arch Gynecol Obstet, 284*, 1153–1156. https://doi.org/10.1007/s00404-010-1805-6

Hadımlı, A., Öztürk Can, H., Soğukpınar, N., Demirel Bozkurt, Ö., Baykal Akmeşe, Z., Çakır Koçak, Y., Sarıcan, E. S., & Karaca Saydam, B. (2012). Do women make vaginal lavage with the aim of genital hygiene?. *e-Journal of New World Sciences Academy*, *7*(3), 16-27.

İlmihal (2014). TC. Diyanet İşleri Başkanlığı Kütüphanesi. Retrieved from https://kutuphane.diyanet.gov.tr/Files/document/%C4%B0lmihal,%20Diyanet%20Vakf%C4%B1.pdf.

Koştu, N., & Taşçı, K. (2009). Determination of 15-49 year old married women's protecting attitude their reproductive health. *Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi*, *12*(1), 91-97.

Luo, L., Xu, J. J., Wang, G., X., Ding, G., W., Wang, N., & Wang, H., B. (2016). Vaginal douching and association with sexually transmitted infections among female sex workers in a prefecture of Yunnan Province, China. *International Journal of STD & AIDS*, *27*(7), 560-567. https://doi.org/10.1177/0956462415589044

Luong, L., Libman, M., Dahhou, M., Chen, M.F., Kahn, S.R., Goulet, L., Séguin, L., Lydon, J., McNamara, H., Platt, R.,W., Kramer, M.,S. (2010). Vaginal douching, bacterial vaginosis, and spontaneous preterm birth. *Journal of Obstetrics and Gynaecology Canada*, *32*(4), 313-32. https://doi.org/10.1016/S1701-2163(16)34474-7

Martino, J.,L., Vermund, S.,H. (2002). Vaginal douching: Evidence for risks or benefits to women's health. *Epidemiol Rev*., *24*(2), 109–124. https://doi.org/10.1093/epirev/mxf004

Martino, J.,l., Youngpaıroj, S., Vermund, S.,H. (2004). Vaginal douching: personal practices and public policies. *Journal of Women's Health*. *13(*9), 1048-1065. https://doi.org/10.1089/jwh.2004.13.1048

McKee, M.,D., Baquero, M., Anderson, M.,R., Alvarez, A., Karasz, A. (2009). Vaginal douching among latinas: practices and meaning. *Maternal and Child Health Journal*, *13*(1), 98-106. https://doi.org/10.1007/s10995-008-0327-3

National Survey of Family Growth - D Listing (2019). Retrieved from https://www.cdc.gov/nchs/nsfg/key_statistics/d_2015-2017.htm

Okumuş, F., Demirci, N. (2014). The reality of vaginal douche in Turkey. *Florence Nightingale Journal of Nursing, 22*(1), 53-62.

Oner, S., Turfan, E.,Ç. (2020). The effect of planned education given to the pregnant women on genital hygiene behaviour and the symptoms of urinary tract ınfection. *Van Saglik Bilimleri Dergisi, 13*(1), 10-18.

Orak, N.,Ş., Canuygur, A. (2014). Investigation of the genital hygiene behavior of the hospitalized patients in department of gynecology. *Balikesir Saglik Bil Derg, 3*(3), 130-134. https://doi.org/10.5505/bsbd.2014.21043

T.R. Ministry of Health Health Women Health Survey, ISBN: 978-975-590-491-7, Ankara.

Sunay, D., Kaya, E., Ergün, Y. (2011). Vaginal douching behavior of women and relationship among vaginal douching and vaginal discharge and demographic factors. *Journal of the Turkish Society of Gynecology and Obstetrics,* *8*(4), 264-71. https://doi.org/10.5505/tjod.2011.57805

Süt, H. (2016). Investigation of Relationship between Genital Infection and Genital Hygiene Behaviors in Women Aged 18-49 Years. *Journal of Duzce University Graduate School of Health Sciences, 6*(1), 8-13.

Wan, B., P., & Jacobs, C., K. (2018). Does vaginal douching cause bacterial vaginosis? *Evidence-Based Practice,* *21*(6), 13. https://doi.org/10.1097/01.EBP.0000545159.00070.00

Yaman, H.,E., Aygün, M., Tosun, H. (2016). Traditional genital hygiene practices in Turkey. *Indian Journal of Traditional Knowledge*, 15(2), 214-218.

Yanikkerem, E., Yasayan, A. (2016). Vaginal douching practice: Frequency, associated factors and relationship with vulvovaginal symptoms. *J Pak Med Assoc, 66*(4), 387-92.

Yıldırım, R., Vural, G., & Koçoğlu, E. (2020). Effect of vaginal douching on vaginal flora and genital infection. *Journal of the Turkish German Gynecological Association, 21*(1), 29-34. https://doi.org/10.4274/jtgga.galenos.2019.2018.01