

Use of Herbal Products for Alleviating Gynecological Complaints by Turkish Women: A Survey of 1329 Subjects

Türk Kadınlarında Jinekolojik Şikayetleri Azaltmak İçin Bitkisel Ürün Kullanımı: 1329 Kişinin Taranması

Servet HACİVELİOĞLU,^a
Gülşen VURUR,^a
Ahmet UYSAL,^a
Meryem GENCER,^a
Ayşenur ÇAKIR GÜNGÖR,^a
Emine COŞAR^a

^aDepartment of Obstetrics and Gynecology,
Çanakkale Onsekiz Mart University
Faculty of Medicine, Çanakkale

Geliş Tarihi/Received: 20.09.2013
Kabul Tarihi/Accepted: 22.01.2014

This study was presented as an oral presentation at the 11th Congress of Turkish Society of Obstetrics and Gynecology, 15-19 May 2013, Antalya, Turkey.

Yazışma Adresi/Correspondence:
Servet HACİVELİOĞLU
Çanakkale Onsekiz Mart University
Faculty of Medicine,
Department of Obstetrics and Gynecology,
Çanakkale,
TÜRKİYE/TURKEY
servetozden@comu.edu.tr

ABSTRACT Objective: The aim of this study was to explore the prevalence of the use of herbal products for various gynecological complaints among a sample of Turkish women. **Material and Methods:** A total of 1329 women attending our outpatient clinic with various gynecological complaints were interviewed. Data were collected through face-to-face interviews, using a pre-structured questionnaire that included demographic features of the participants and specific questions on herbal use. **Results:** Two hundred and twenty-eight participants (17.2%) reported that they had taken at least one of the 23 different herbal products named in the questionnaire for their current gynecological complaints. The most frequently consumed products were onion extract (43.9%) and parsley (14.9%). The use of herbal products had most commonly been recommended by family or friends (50.4%). Among the users, 90.8% and 88.6% believed the products to be potentially beneficial and safe, respectively. Moreover only 6.6% of the women discussed using herbal products with their physicians. **Conclusion:** This research shows that although there is a lack of clear scientific evidence regarding the safety and benefits of herbal products, their use in treating various gynecological complaints is relatively common among Turkish women; nearly one in six interviewers used at least one herbal product.

Key Words: Complementary therapies; herbals; herbal medicine; phytotherapy; gynecology

ÖZET Amaç: Bu çalışmanın amacı Türk kadınlarında farklı jinekolojik şikayetler için bitkisel ürün kullanım sıklığını ortaya koymaktır. **Gereç ve Yöntemler:** Çeşitli jinekolojik şikayetlerle polikliniğimize başvuran toplam 1329 hasta ile görüşme yapıldı. Veriler yüz yüze görüşme ile elde edildi. Görüşmede katılımcılara ait demografik özellikler ve bitkisel ürün kullanımına yönelik spesifik sorular içeren, çalışma öncesi hazırlanmış anket formu kullanıldı. **Bulgular:** Katılımcılardan 228'i (%17,2) anket formunda yer alan 23 değişik bitkisel üründen en az birisini şu anki jinekolojik şikayetlerine yönelik kullandıklarını belirtti. En sık kullanılan ürünler soğan ekstresi (%43,9) ve maydanoz (%14,9) idi. Bitkisel ürün kullanımı en sık olarak aile/arkadaşlar (%50,4) tarafından tavsiye edilmişti. Kullanıcıların %90,8'i ve %88,6'ı ürünlerin potansiyel olarak sırasıyla faydalı ve güvenli olduklarına inanıyorlar. Ayrıca kadınların sadece %6,6'ı bitkisel ürün kullandıklarını doktorlarına bildirdiler. **Sonuç:** Bu araştırma bitkisel ürünlerin güvenlik ve faydaları ile ilgili olarak net bir bilimsel kanıt olmamasına rağmen, kullanımlarının Türk kadınları arasında çeşitli jinekolojik şikayetlerin tedavisinde nispeten sık olduğunu göstermiştir. Görüşme yapılan yaklaşık her altı kişiden birisi en az bir bitkisel ürün kullanmıştır.

Anahtar Kelimeler: Tamamlayıcı tedaviler; bitkiler; bitkisel tıp; fitoterapi; jinekoloji

Türkiye Klinikleri J Gynecol Obst 2014;24(2):90-7

The use of complementary and alternative medicines (CAM) continues to increase worldwide; a recent survey showed an increase in the use of CAM from 34% in 1990 to 42% in 1997.¹ The prevalence of CAM

in developing countries is often linked to cultural beliefs and practices that lead to self-care, home remedies, or consultation with traditional healers.²⁻⁴ Herbal medicine, described as the use of plants that are consumed for their claimed health benefits, is considered one of the diverse CAM categories. In addition, among the CAM categories, herbal remedies were found to be the most common modality used in obstetrics and gynecological problems.⁵

There is a long history of using herbal therapies to treat diseases, and their use is widespread in developing countries. Currently, herbal therapies are often promoted as “natural” and “safe” alternatives to conventional drugs. However, only a small number of herbal products that are complementary or alternative to medical treatments have been studied, to various extents, in different countries. These studies have reported a wide range in prevalence, due to cultural and regional differences.⁵⁻⁷ Despite their widespread use, herbal products used to treat diseases are not currently subject to the same regulations as conventional drugs.

Women may choose this type of therapy because they consider herbal treatments to be natural and safer compared to conventional drugs, despite the lack of clear scientific evidence of their benefits or safety. Moreover, the current stage of knowledge is still inadequate to inform clinicians, researchers, and the population sufficiently regarding the benefits or potential risks.

Some previous studies have evaluated the effectiveness of herbal therapies in gynecological complaints such as premenstrual syndrome (PMS) or dysmenorrhea, with conflicting outcomes.^{5,6,8,9} Recently, the effects of epigallocatechin gallate (EGCG), an extract of green tea, on cultured human leiomyoma cells (HuLM) was investigated by Zhang et al. and found that EGCG inhibits the proliferation of HuLM cells and induces apoptosis. The authors concluded that EGCG may be a potential anti-uterine leiomyoma agent acting through multiple signal transduction pathways.¹⁰ Studies have also revealed increasing evidence of the use of herbal medicine during pregnancy.¹¹⁻¹³ However, the data regarding the use of herbal product in gynecology practice is very scant.

The aim of the present study, therefore, was to investigate how common the use of herbal products is for various gynecological complaints among a sample of Turkish women. The study was purposely designed to explore the main sources of information advising the use of these products.

MATERIAL AND METHODS

The participants in the study were women who presented with various gynecological complaints at the outpatient clinic of Onsekiz Mart University, Canakkale, Turkey, between April 2013 and August 2013. A total of 1,350 consecutive patients were enrolled in the study (age range, 17-75 years). Inclusion criteria for the study included the presence of any gynecological complaints. The exclusion criteria were ages older than 75 years and younger than 17 years and lack of cooperation in the interview. The institutional review board of Onsekiz Mart University, Canakkale, Turkey, approved the study. All of the women received verbal information before entering the study, and written consent was obtained from each participant.

The definition of herbal compound, as explained to each participant before the interview, was accepted as “any kind of remedy, such as a tablet, a mixture, an ointment, or herbal teas that are produced from an herb or herbs with the intent to cure or prevent illness, alleviate symptoms, or acquire better health.” The questionnaire was piloted using a sample of subjects chosen from the outpatient clinic who were not part of the final study. After the pilot study, corrections to the questionnaire were made where appropriate.

The pre-structured questionnaire, which was administered to all participants, included questions about the basic clinical and demographic data of the patients in the first part and details related to their usage of herbal products in the second part. Data were collected through a face-to-face interview performed by a specially trained nurse (G.V.) in a separate room at the gynecology outpatient clinic. The reason for preferring the face-to-face interview approach was the consideration that

data from an interviewer-administered questionnaire would produce information that was more reliable and complete than a self-administered questionnaire would. Each interview lasted 10-15 minutes.

The basic clinical and demographic data included main gynecologic complaint; age; height; weight; number of cigarettes smoked per day; level of education; occupation; place of residence; gravidity, parity, and dilatation & curettage (D&Cs); and the presence of any chronic illness and medication use. Body mass index (BMI) was calculated as weight in kilograms divided by the square of height in meters.

The second part of the questionnaire was anonymous and has been used in previous studies.^{14,15} The 18 questions (Appendix 1) were designed to obtain information regarding the type(s) of herbal products consumed (a list of the herbal products known to be commonly purchased in Turkey was provided); the reasons for preferring herbal products; details about the usage (formulation and route of administration); complaints or reasons for consumption; place of purchase; relationship and communication with health care providers; general product information regarding quality, type of use, and risks; source of information; presence of satisfaction; and adverse reactions experienced.

The frequency of each response was investigated in the questionnaire. The “users group,” which included the women who used any herbal products, and the “non-users group,” which included the women who did not use the products, were compared in terms of demographic and clinical characteristics.

Data analysis was performed with SPSS version 20 (IBM, Armonk, NY). Descriptive analyses were presented using means \pm standard deviation (SD) or n (%). Student's t test was used to compare numerical variables between the user and non-user groups. The categorical variables were assessed using cross tabulations, and the Chi-square test was used to compare the proportions in the two groups. $p < 0.05$ was considered to be statistically significant.

APPENDIX 1: The items included in the pre-structured questionnaire (second part).

1. Have you taken any herbal products for your current gynecological complaints?
2. How long have you taken these products?
3. For which health problems or complaints?
4. Which plant/herb have you taken (see list)?
5. With which formulation and route of administration?
6. Do you consider this kind of therapy as useful?
7. Do you consider this kind of therapy as safe?
8. Have you used any herbal product for your previous problems or complaints in the past?
9. For which health problems or complaints?
10. Where did you purchase the herbal product?
11. Who introduced you to the herbal therapy?
12. In case of choice without a medical prescription/ advice, did you communicate it to your physician afterwards?
13. Why did you choose an herbal product rather than a traditional drug?
14. Did you receive information about quality, risks and instructions about the consumption of an herbal product?
15. If yes, who provided them?
16. Did you perceive benefits from taking this kind of therapy?
17. Did you observe side-effects?
18. If yes, which?

RESULTS

A total of 1,350 women were enrolled in the study, with a response rate of 98.4% (21 women refused to participate). Thus, 1,329 participants were interviewed. As shown in Table 1, the mean age of the women in the study population was 35.6 ± 12.3 (17-75 years).

There were no significant differences ($p > 0.05$) between the user and non-user groups in sociodemographic and clinical features related to status of employment, place of residence, education level, BMI, number of previous D&Cs, smoking habit, regular use of medicine, or chronic disease. Mean age and mean number of gravidity and parity were greater in the non-user group ($p < 0.05$) (Table 1). In addition, subjects older than 40 years used the products less frequently than subjects 26-40 years of age did ($p < 0.001$).

The data regarding product use by the interviewed women are presented in Table 2. Of the

TABLE 1: Sociodemographic and clinical features of the women, according to herbal product consumption.

	Total (n=1329)	Users (n=228)	Non-users (n=1101)	p
Age (years)	35.6 ± 12.3	33.7 ± 10.3	36.0 ± 12.9	0.002
<26	309 (23.2)	49 (21.5)	260 (23.6)	<0.001*
26-30	240 (18.1)	51 (22.4)	189 (17.2)	
31-35	185 (13.9)	42 (18.4)	143 (13.0)	
36-40	166 (12.5)	38 (16.7)	128 (11.6)	
>40	429 (32.3)	48 (21.0)	381 (34.6)	
BMI** (kg/m ²)	26.1 ± 5.7	25.8 ± 5.3	25.9 ± 5.7	0.369
Underweight (<18.5)	35 (2.6)	6 (2.6)	29 (2.6)	0.566
Normal (18.5–24.9)	600 (45.2)	109 (47.8)	491 (44.6)	
Overweight (>24.9)	416 (31.3)	73 (32.0)	343 (31.2)	
Obese (>29.9)	278 (20.9)	40 (17.6)	238 (21.6)	
Gravidity (n)	1.9 ± 1.7	1.5 ± 1.6	1.7 ± 1.7	0.006
Parity (n)	1.3 ± 1.2	0.9 ± 1.1	1.2 ± 1.2	<0.001
D&C (n)	0.4 ± 0.9	0.3 ± 0.8	0.3 ± 0.8	0.06
Employment				0.144
Yes	328 (24.7)	65 (28.5)	263 (23.9)	
No	1001 (75.3)	163 (71.5)	838 (76.1)	
Residence				0.096
Rural	710 (53.4)	110 (48.2)	600 (54.5)	
Urban	619 (46.6)	118 (51.8)	501 (45.5)	
Education				0.217
<High school	668 (50.3)	103 (45.2)	565 (51.3)	
High school completed	306 (23.0)	55 (24.1)	251 (22.8)	
>High school	355 (26.7)	70 (30.7)	285 (25.9)	
Smoking habit				0.672
Non-smokers	1007 (75.8)	171 (75.0)	836 (75.9)	
<10 daily	158 (11.9)	31 (13.6)	127 (11.6)	
≥ 10 daily	164 (12.3)	26 (11.4)	138 (12.5)	
Parity				0.009
Nullipar	466 (35.1)	98 (43.0)	368 (33.4)	
At least one prior child	863 (64.9)	130 (57.0)	733 (66.6)	
Medicine taken regularly				0.301
Yes	58 (4.4)	13 (5.7)	45 (4.1)	
No	1271 (95.6)	215 (94.3)	1056 (95.9)	
Chronic disease				0.929
Present	217 (16.3)	38 (16.7)	179 (16.3)	
Absent	1112 (83.7)	190 (83.3)	922 (83.7)	

BMI: Body mass index.

Data presented as mean ± standard deviation (SD) or n (%).

*The Chi-square test was used to compare the groups. Multiple comparisons showed that the women older than 40 years of age used the herbal products less frequently than the women in the 26–30, 31–35, and 36–40 age groups; the Bonferroni correction was used to adjust the P value for multiple testing.

**Calculated as weight in kilograms divided by the square of height in meters.

1,329 subjects, 228 (17.2%) reported that they had taken at least one of the 23 different herbal products named in the questionnaire for their current gynecological complaints. The most frequently

consumed products were onion extract (43.9%) and parsley (14.9%). The five products used most commonly thereafter were fennel, green tea, chamomile, royal jelly, and sage tea. The other 16

TABLE 2: Comments about the use of herbal products by the interviewed women (n=228).

	n	%
Use of herbal product		
Yes	228	17.2
No	1101	82.8
Length of consumption		
<1 week	12	5.3
1 week-1 month	108	47.4
1-2 months	63	27.6
2-6 months	30	13.1
>6 months	15	6.6
Name of herbal products		
Onion Extract (<i>Allium cepa</i>)	100	43.9
Parsley (<i>Petroselinum hortense</i>)	34	14.9
Fennel (<i>Foeniculum vulgare</i>)	16	7.0
Green tea (<i>Camellia sinensis</i>)	16	7.0
Chamomile (<i>Anthemis nobilis</i>)	15	6.6
Royal jelly (<i>Apis mellifera</i>)	12	5.3
Sage tea (<i>Salvia officinalis</i>)	8	3.5
Others	27	11.8
Route of administration		
Orally (tea, oral solution, or syrup)	214	93.9
Others	14	6.1
Where purchased		
Bazaar	121	53.0
Herbalist	101	44.2
Pharmacy	3	1.4
Internet	3	1.4
Advised to use by		
Family/friends	115	50.4
Television	84	36.8
Internet	27	11.8
Others	2	1.0
Reporting the use of herbal products to physician		
Yes	15	6.6
No	213	93.4
Gathering information on products		
Yes	49	21.5
No	179	78.5
Source of information on products		
Television	112	49.1
Internet	65	28.5
Family/friends	44	19.3
Others	7	3.1
Did you perceive benefits from taking herbal products?		
Yes	83	36.4
No	145	63.6
Any side effects experienced		
Yes	8	3.5
No	220	96.5

products were mentioned by the users; however, none had more than four users (<1.8%).

The most frequent gynecological reasons for herbal product use were vaginal discharge (n=65, 28.5%), infertility (n=53, 23.2%), menstrual disturbances (n=43, 18.9%), all kinds of pelvic masses (n=29, 12.7%), all kinds of pelvic pains (n=20, 8.8%), urogynecologic complaints (n=6, 2.6%), menopausal complaints (n=4, 1.8%), and other complaints (n=8, 3.5%) (Figure 1).

Of the users, 207 (90.8%) and 202 (88.6%) thought the products were potentially beneficial and safe respectively. The most common belief (n=172, 75.4%) for using these products was that the respondents did not consider them to be harmful to their bodies.

Thirty-seven women (16.2%) in the users group and 42 women (3.8%) in the non-users group reported that they had also used herbal products for previous gynecological complaints in the past.

Reports of side effects related to herbal supplementation were rare; only eight (3.5%) of the users reported any. The only side effect reported was mild nausea.

DISCUSSION

This exploratory study provides preliminary knowledge that the use of herbal products for several gynecological complaints was relatively common among Turkish women. Almost one in six interviewees used at least one herbal product for their current gynecological complaints.

In terms of sociodemographic characteristics, our sample of 1,329 women has to be considered representative of the regional population, as the majority of the variables evaluated in the study were similar between the users and the non-users. The only statistically significant differences were in relation to age and numbers of gravidity and parity; the use of herbs was less common among women over 40 years of age and those with higher numbers of gravidity and parity.

The proportion of herbal product use among women for their gynecological complaints has not been previously explored in detail. In our study

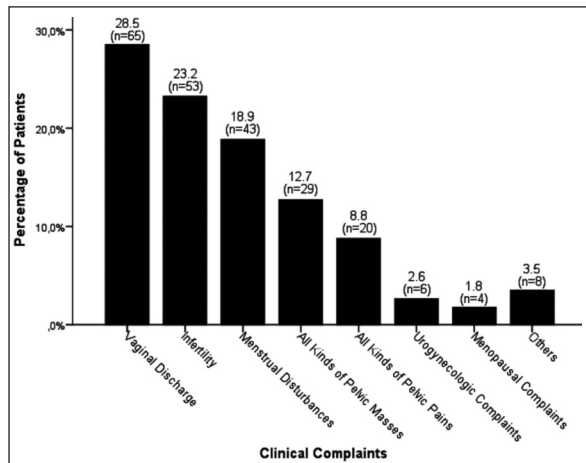


FIGURE 1: Distribution of the women by percentage according to gynecological complaints for which herbal products were used (n=228).

sample, 17.2% (n=228) of participants reported that they had taken at least one herbal product for their current gynecological complaints. A recent study by Harrigan found that the proportion of herbal product use among 2,673 women seeing obstetricians and gynecologists was 19.5%, which is in agreement with our results.⁷ However, that study also contained an obstetric patient population, whereas ours did not.

Our search of the literature revealed few papers examining the use of herbal products among gynecological patients. Therefore, we mainly compared our results with CAM use, which has various categories, including herbal therapy. Nevertheless, there seem to be broad differences regarding the types of herbal products used for gynecological problems among geographical regions. Onion extract, parsley, and fennel were found to be the most frequently consumed products in the present study. In a study conducted in the US, the most frequently used herbal products among CAM modalities used for obstetrics and/or gynecological problems were evening primrose (13.1%), ginger (3.1%), and black cohosh (2.9%), which are very different from the ones found in the present study.⁵ This discrepancy can be explained by cultural and belief differences between regions.

The most frequent gynecological reasons for herbal consumption in the present study were vaginal discharge (28.5%), infertility (23.2%), and men-

strual disturbances (18.9%) (Table 2). A common situation in which gynecologists might encounter patients using alternative therapies is vaginal discharge. In 1997, a study examining the use of CAM in chronic vaginitis reported that 41.9% of the patients had used an alternative remedy in the preceding years.¹⁶ The same authors reported another recent paper describing a much larger percentage (64.9%) of patients using CAM treatments for chronic vaginitis.¹⁷ Therefore, we can conclude that vaginal discharge, a symptom related to vaginitis, is relatively common, and alternative treatments might be commonly sought by patients for its treatment.

Despite the common use of alternative therapies in infertile patients, there is little evidence that herbal therapies are effective for female infertility. In our study sample, 23.2% used herbal products for their infertility. A recent Turkish study investigating CAM use in infertile patients found that 29.3% had used herbal products to treat infertility.¹⁸ It is obvious that more scientific data are needed in order to recommend these herbal products to infertile couples.

Various sources of information regarding herbal therapies are available to consumers. The most common sources of information in the present study were found to be family and friends, in 50.4% of the users. This proportion is higher than what was found in other studies. In a study⁵ investigating the use of CAM in obstetrics and gynecological problems, the most commonly cited source of CAM information was through family and friends (36.2%). These types of non-scientific sources raise concerns, as there is no reason to believe that these persons are competent enough to give advice on herbal therapy to women for their gynecological complaints.

Correct and scientific knowledge about the usage of herbal products should be available and provided to the users. The degree of information about herbal products provided to women by various sources was found to be low (21.5%) in the present study, and this could contribute to misuse or potentially harmful use. The guidelines in gynecology may suggest the physicians to counsel their patients about their motivation for and use of CAM,

and to provide knowledge on its safety and effectiveness. In this regard, health care providers could have a role in supporting patients with scientific information related to the use of these products.

Although it is relatively common, the majority of women do not report herbal product use to their physicians. In the present study, there was great concern in finding that 93.4% of the women reported that they did not inform their physicians that they used the herbal products. This proportion, unfortunately, is quite high. This percentage varies among other studies, between 51.9% and 63.0% among CAM users.^{5,7} The use of herbal medicine without informing the physician could result in significant risks to the patient, including delay or avoidance in having the appropriate conventional treatments, wrong diagnosis, interference with the mechanism of action of a prescribed medication, and adverse reactions from the consumed substances. Therefore, self-reporting by patients needs to improve, so the physicians can seek advice on the safety of the herbal product on the patient's behalf, and prevent interactions with prescribed medicines.

The results require consideration with respect to our study's limitations. One limitation is that the questionnaire for this study was modified from previously published studies.^{14,15} In addition, our sample is representative of a regional rather than national reality, as the use of herbal products can greatly vary among the regions of our country, due to cultural differences. However, the major strength of the study is that, to the best of our knowledge, it is the first attempt to explore herbal use in Turkish women with various gynecological complaints, on the basis of data obtained from a questionnaire completed during face-to-face interviews. Moreover, the results of the study, with a 98.4% response rate, could mostly eliminate response bias and be well generalized for the regional population.

In conclusion, the results of the present study demonstrated that the products most frequently consumed by women with various gynecological complaints were onion extract and parsley. Unfortunately, consumption of herbal products by these women is relatively common, despite the fact that their potential benefits or harm to the body have not been adequately studied scientifically. Therefore, further well-designed and controlled studies are clearly necessary to identify and evaluate both the effectiveness and potential harmful effects of these products.

This relatively common practice is particularly worrisome because many of these compounds are taken on the advice of family, friends, or media, rather than with an expert physician's medical recommendation, and the consumers are often not supported by adequate scientific knowledge. Consequently, healthcare providers should not ignore the relatively frequent use of herbal products among women, and they should discuss the use of these products with their patients with a goal of providing responsible, evidence-based advice to optimize patient care. In addition, without a discussion about herbal therapies, a patient's medical record is incomplete, and the possibility of medical risks cannot be addressed. Furthermore, in order to offer better consultation on the patient's behalf regarding the safety of herbal medicine, and to prevent interactions with medicine prescribed by the physician, self-reporting of consumption of herbal products by patients needs to improve.

Finally, the frequency and types of herbal products used for gynecological complaints in the present study should be generalized for the rest of Turkey in a cautious manner, keeping in mind the limitations noted above. A nationwide survey would be invaluable to obtain a complete picture.

REFERENCES

- Eisenberg DM, Davis RB, Ettner SL, Appel S, Wilkey S, Van Rompay M, et al. Trends in alternative medicine use in the United States, 1990-1997: results of a follow-up national survey. *JAMA* 1998;280(18):1569-75.
- Azaizeh H, Saad B, Cooper E, Said O. Traditional Arabic and Islamic Medicine, a Re-emerging Health Aid. *Evid Based Complement Alternat Med* 2010;7(4):419-24.
- Shaikh BT, Hatcher J. Complementary and Alternative Medicine in Pakistan: Prospects and Limitations. *Evid Based Complement Alternat Med* 2005;2(2):139-42.
- Abu-Irmaileh BE, Afifi FU. Herbal medicine in Jordan with special emphasis on commonly used herbs. *J Ethnopharmacol* 2003;89(2-3):193-7.
- Furlow ML, Patel DA, Sen A, Liu JR. Physician and patient attitudes towards complementary and alternative medicine in obstetrics and gynecology. *BMC Complement Altern Med* 2008;8:35. doi: 10.1186/1472-6882-8-35.
- Von Gruenigen VE, White LJ, Kirven MS, Shwalter AL, Hopkins MP, Jenison EL. A comparison of complementary and alternative medicine use by gynecology and gynecologic oncology patients. *Int J Gynecol Cancer* 2001;11(3):205-9.
- Harrigan JT. Patient disclosure of the use of complementary and alternative medicine to their obstetrician/gynaecologist. *J Obstet Gynaecol* 2011;31(1):59-61.
- Khoo SK, Munro C, Battistutta D. Evening primrose oil and treatment of premenstrual syndrome. *Med J Aust* 1990;153(4):189-92.
- Kotani N, Oyama T, Sakai I, Hashimoto H, Muraoka M, Ogawa Y, et al. Analgesic effect of a herbal medicine for treatment of primary dysmenorrhea--a double-blind study. *Am J Chin Med* 1997;25(2):205-12.
- Zhang D, Al-Hendy M, Richard-Davis G, Montgomery-Rice V, Rajaratnam V, Al-Hendy A. Antiproliferative and proapoptotic effects of epigallocatechin gallate on human leiomyoma cells. *Fertil Steril* 2010;94(5):1887-93.
- Forster DA, Denning A, Wills G, Bolger M, McCarthy E. Herbal medicine use during pregnancy in a group of Australian women. *BMC Pregnancy Childbirth* 2006;6:21.
- Nordeng H, Havnen GC. Use of herbal drugs in pregnancy: a survey among 400 Norwegian women. *Pharmacoepidemiol Drug Saf* 2004;13(6):371-80.
- Conover EA. Herbal agents and over-the-counter medications in pregnancy. *Best Pract Res Clin Endocrinol Metab* 2003;17(2):237-51.
- Facchinetti F, Pedrielli G, Benoni G, Joppi M, Verlato G, Dante G, et al. Herbal supplements in pregnancy: unexpected results from a multicentre study. *Hum Reprod* 2012;27(11):3161-7.
- Cuzzolin L, Francini-Pesenti F, Verlato G, Joppi M, Baldelli P, Benoni G. Use of herbal products among 392 Italian pregnant women: focus on pregnancy outcome. *Pharmacoepidemiol Drug Saf* 2010;19(11):1151-8.
- Nyirjesy P, Weitz MV, Grody MH, Lorber B. Over-the-counter and alternative medicines in the treatment of chronic vaginal symptoms. *Obstet Gynecol* 1997;90(1):50-3.
- Nyirjesy P, Robinson J, Mathew L, Lev-Sagie A, Reyes I, Culhane JF. Alternative therapies in women with chronic vaginitis. *Obstet Gynecol* 2011;117(4):856-61.
- Edirne T, Arica SG, Gucuk S, Yildizhan R, Kulusari A, Adali E, et al. Use of complementary and alternative medicines by a sample of Turkish women for infertility enhancement: a descriptive study. *BMC Complement Altern Med* 2010;10:11. doi: 10.1186/1472-6882-10-11.