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Effects of Combined Oral Contraceptives on Women's Sexual Function, Eje Cafetero, Colombia, 2016-2020

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ABSTRACT

Introduction: The sexual function of women could be affected by the use of combined oral contraceptives.

Objective: To evaluate the sexual function of women users of combined oral contraceptives and to know the adverse events.

Materials and methods: Cross-sectional study in 224 women over 18 years of age, sexually active, users of combined oral contraceptives (Estradiol Valerate/Dienogest: VE₂/DNG, ethinylestradiol/levonorgestrel: EE₂/LNG and ethinylestradiol/drospirenone: EE₂/DSP), who attended three university clinics in the Coffee Region (Colombia); between 2016 and 2020. The Female Sexual Function Index (FSFI) instrument was used. Descriptive statistics were applied.

Results: The mean age of all the participants was 25.81 ± 3.79 years. At twelve months of follow-up, the FSFI score was higher with VE₂/DNG (29.07 ± 1.27), and lower with EE₂/DSP (26.62 ± 1.16) ($p < 0.05$); observing a better score in the desire domain (4.85 ± 1.13 and 4.16 ± 1.16 , respectively); EE₂/LNG showed a neutral effect. The frequency of weekly sexual relations with VE₂/DNG increased from 2 (at the beginning) to 5 (at the end), the range varied between 3 and 15. In the EE₂/DSP users, the frequency increased from 2 to 3, presenting the lowest rank of the three groups (1 to 9). VE₂/DNG users reported higher frequency of sexual thoughts and fantasies compared to EE₂/DSP and EE₂/LNG.

Conclusions: The VE₂/DNG combination achieved the highest scores, both in the desire domain and in the total score of the FSFI; and greater increase in the frequency of weekly sexual relations. It is essential to know the sexual health of women before choosing a hormonal contraceptive.

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Introduction

Typically, combined oral contraceptives (COCs) contain an estrogen and a progestin; estrogens stabilize the endometrium, regulate vaginal bleeding, reduce follicle development by inhibiting follicle-stimulating hormone (FSH) secretion; For its part, the progestogen inhibits the function of the luteinizing hormone (LH), with the subsequent inhibition of ovulation [1,2].

It is known that among women of childbearing age who do not want to get pregnant, 90% use some contraceptive method; In Colombia, this figure is 78.24%, with hormonal methods being the most used (69.12%) [3,4].

Emotional and sexual adverse events have been reported as the best predictors of interruption/change of oral contraceptives [5].

In fact, the effect of COCs on women's sexual function has been a constant topic of discussion for the last four decades [6].

In their systematic review Zlatko et al., which included 36 studies published between 1975 and 2011, with a total of 13,673 women, 85% reported an increase or no change in libido, and 15% reported a decrease [7]. Other authors have reported that, in oral contraceptive users, three out of seven domains of sexual function were negatively affected [8].

Endogenous androgen levels have been proposed to be independent but significant determinants of sexual behavior in women; hence it follows that COCs, by inhibiting LH, also decrease ovarian production of androgens, affecting the modulation of women's sexual response [9-11]. Despite all this, the truth is that the possible side effects of hormonal contraceptives on women's sexual function remain unknown to many patients and are even doubtful to certain doctors [12].

In general, all COCs have antiandrogenic activity, although some are more so than others, depending on the progestin that accompanies the combination. In the medical literature, for several years, it has been promoted that the frequency of sexual activity and enjoyment are positively correlated with contraceptive satisfaction; however, the reality is that there are no controlled clinical trials, with adequate methodology, where the sexual function of women users of COCs is evaluated; in such a way that the current lack of knowledge in this regard is quite high [12-15]. This could reflect the limited interest of the pharmaceutical industry to carry out placebo-controlled studies, as well as the considerable financial costs to carry out large-scale trials [4,8].

Given the lack of evidence of the true impact of COCs on women's sexual function, as well as contradictory data on their role as risk factors for female sexual dysfunction, this study aimed to assess the sexual function of women women users of combined oral contraceptives and knowing the adverse events, in women from the Coffee Region, Colombia [7].

Materials and methods

Design and population. Observational, descriptive, cross-sectional study, which included 224 women over 18 years of age, sexually active, users of combined oral contraceptives (Estradiol Valerate/Dienogest: VE₂/DNG, ethinylestradiol/levonorgestrel: EE₂/LNG and ethinylestradiol/drospirenone: EE₂/DSP), who attended the Family Planning program in three private clinics; university institutions and reference centers of a high level of complexity, which serve the population belonging to the contributory regime of workers and subsidized by the State in the general system of social security in health in Colombia, in the Coffee Region (Armenia, Pereira and Manizales), Colombia; between January 9, 2016 and December 28, 2020. Breastfeeding women, score on the Index of Female Sexual Function (IFSFI) ≤ 26.55 , history of sexual dysfunction, body mass index ≥ 30 kg/m², smoking, cognitive limitation or disability, mental illness, chronic metabolic pathologies, antihypertensive users, those who moved from the Coffee Region (Quindío, Risaralda and Caldas), those who did not complete the four follow-up controls and those who did not wish to participate. The Female Sexual Function Index (IFSFI) was used as an instrument. Convenience sampling was performed, and the sample size was not calculated.

Procedure

A professional nurse approached the women at the exit of the Family Planning program consultation, invited them to participate and evaluated the inclusion and exclusion criteria. For those who met the criteria, the objective of the study was explained to them, pointing out the ethical aspects and facilitating the reading of the informed consent. Once signed, in a private area, another professional nurse, accompanied by a psychologist specializing in sexual health, applied a questionnaire to obtain information on sociodemographic characteristics, as well as the evaluation instrument. Efforts were made to control information bias, facilitating a warm, trusting and private environment to avoid eventual alterations in memory and/or embarrassment due to questions about their sexual behavior.

Intervention

Participants were divided into three groups: Estradiol Valerate/Dienogest (VE₂/DNG), Ethinylestradiol 30 µg / Levonorgestrel 150 µg / (EE₂/LNG) and Ethinylestradiol 30 µg / Drospirenone 3 mg (EE₂/DSP). Each one underwent five follow-ups: initial or baseline, at three, six, nine and twelve months. In each control, the IFSFI instrument was evaluated and the weekly sexual frequency,

masturbation, the frequency of sexual thoughts or fantasies and the frequency to reach orgasm were investigated.

The Index of Female Sexual Function (IFSFI) is a questionnaire made up of 19 items, which evaluates six domains: Desire (items 1 and 2), Arousal (items 3 to 6), Lubrication (items 7 to 10), Orgasm (items 11 to 13), Satisfaction (items 14 to 16), and Pain (items 17 to 19). This instrument has been used previously in other investigations in Colombia [16,17]. The higher the overall score, the better sexual function, and the lower the score, the greater the risk of sexual dysfunction. It is considered that there is a risk of sexual dysfunction if the total score is ≤ 26.55 , or if one of the domains is less than 3.6 [16].

Measured variables

Sociodemographic (age, race, academic level, marital status, occupation, socioeconomic status, origin, affiliation to the General Social Security System of the departments of Quindío, Risaralda and Caldas (Colombia), religion); weight, height, body mass index (BMI); sexual and reproductive health variables (age at menarche, age of onset of sexual life, number of sexual partners, parity); sexual behavior variables (sexual orientation, recurrence of masturbation, vaginal or anal intercourse, average frequency of weekly sexual intercourse, frequency of reaching orgasm, use of erotic toys, frequency of sexual fantasies or thoughts). The questions and scores of the domains of the Female Sexual Function Index (IFSFI) instrument were evaluated.

Statistical analysis

The qualitative variables are described with absolute and relative frequencies, and the quantitative ones through measures of central tendency and dispersion according to their distribution; the comparison between the groups of patients is made by means of the X² test. A statistical significance of 0.05 was used. Statistical analysis was performed with SPSS software. (Version 15.0.1, SPSS Inc., Chicago, IL, USA).

Ethical aspects

The study was approved by the Research Ethics Committee. The signature of the informed consent was requested to include the women in the study; the privacy and confidentiality of the information was guaranteed.

Results

In the follow-up period, a total of 3579 women were treated in the Family Planning program in the three clinics; 2117 (59.15%) chose hormonal contraceptive methods [(combined oral contraceptives: 53.8% (n=1139/2117), progestin only: 14.92% (n=316/2117), levonorgestrel intrauterine device (IUD -LNG): 8.73% (n=185/2117), subdermal implant: 11.95% (n=253/2117), vaginal ring: 5.47% (n=116/2117), patches: 3, 16% (n=67/2117) and intramuscular injection (IM): 1.93% (n=41/2117)]; 398 (11.12%) decided on the intrauterine device (T-Cu IUD), 814 (22.74%) opted for a definitive method (laparoscopic tubal sterilization), 103 (2.87%) preferred the use of condoms and 47 (1.31%) preferred natural methods.

Of the 1,139 women who chose combined oral contraceptives (COCs), 341 (29.93%) reported a BMI ≥ 30 kg/m², 162 (14.22%) were smokers, 34 (2.98%) had limited or cognitive disability, 68 (5.97%) suffered from mental illness, 59 (5.17%) had chronic metabolic pathologies, 46 (4.03%) were users of antihypertensives, 39 (3.42%) moved from the Coffee Region, 29 (2.54%) did not complete the four follow-up controls and 137 (12.02%) did not wish to participate, so that in the end there were 224 (19.66%)

women left for the final analysis, which were divided into three groups: VE₂/DNG (n=75), EE₂/LNG (n=73), and EE₂/DSP (n=76).

The mean age of all the participants was 25.81 ± 3.79 years (minimum: 18 and maximum 39). Regarding origin, 87.94% came from the urban area, 86.16% belonged to the contributory regime in the General Social Security System (Colombia), and 88.83% professed the Catholic religion. The sociodemographic characteristics are described in Table 1. It was evidenced that the three groups did not show statistically significant differences ($p>0.05$).

Table 1: Sociodemographic characteristics of women who use combined oral contraceptives, Coffee Region, Colombia, 2016-2020

Variables	VE ₂ /DNG (n=75)	EE ₂ /LNG (n=73)	EE ₂ /DSP (n=76)	p
Age (years), mean $\pm$ SD	26,93 $\pm$ 4,56	27,35 $\pm$ 2,98	24,97 $\pm$ 3,25	>0,05
Size (mts)	164,72 $\pm$ 8,13	162,15 $\pm$ 7,48	163,95 $\pm$ 6,74	>0,05
Weight (kg)	65,13 $\pm$ 3,27	63,21 $\pm$ 4,57	64,58 $\pm$ 5,17	>0,05
IMC	23,91 $\pm$ 2,75	24,35 $\pm$ 1,89	24,56 $\pm$ 3,18	>0,05
Raza				
Hispanic	43 (57,33 %)	41 (56,16 %)	45 (59,21 %)	>0,05
Afro-Colombian	29 (38,66 %)	28 (38,35 %)	27 (35,52 %)	>0,05
Natives	3 (4,00 %)	4 (5,47 %)	4 (5,26 %)	>0,05
Academic level				
primary	4 (0,05 %)	5 (0,06 %)	7 (0,09 %)	>0,05
High school	13 (17,33 %)	15 (20,54 %)	14 (18,42 %)	>0,05
Technique	35 (46,66 %)	32 (43,83 %)	36 (47,36 %)	>0,05
University	23 (30,66 %)	21 (28,76 %)	19 (25,00 %)	>0,05
Civil status				
Married	25 (33,33 %)	27 (36,98 %)	29 (38,15 %)	>0,05
Free Union	26 (34,66 %)	24 (32,87 %)	25 (32,89 %)	>0,05
Single	12 (16,00 %)	12 (16,43 %)	9 (11,84 %)	>0,05
divorced or widowed	12 (16,00 %)	10 (13,69 %)	13 (17,1 %)	>0,05
occupation				
Housewives	29 (38,66 %)	26 (35,61 %)	30 (39,47 %)	>0,05
Employees	24 (32,00 %)	25 (34,24 %)	20 (26,31 %)	>0,05
Unemployed	17 (22,66 %)	19 (26,02 %)	20 (26,31 %)	>0,05
Pensions	5 (6,66 %)	3 (4,1 %)	6 (7,8 %)	>0,05
Socioeconomic				
Alto	28 (37,33 %)	25 (34,24 %)	27 (35,52 %)	>0,05
Means, medium	41 (54,66 %)	41 (56,16 %)	40 (52,63 %)	>0,05
Under	6 (8,00 %)	7 (9,58 %)	9 (11,84 %)	>0,05

The mean age at menarche was 11.39 ± 2.61 years; the mean age of onset of sexual intercourse was 15.39 ± 3.74 years. The number of sexual partners had a median of 5 (range between 3 and >20). The median frequency of weekly sexual relations, in the total population, was 2 (range between 0 and 3).

Sexual orientation, in the total population, is predominantly heterosexual (81.25%). The least common sexual practice is anal intercourse (33.48%) and the most frequent is vaginal intercourse (100%); masturbation is considered a frequent practice in 74.55% of the total number of participants. 38.83% confirmed the use of erotic toys in their sexual life.

The initial IFSF score, in the total population, was 27.95 ± 4.61 (minimum: 26, 74 and maximum: 31.42) and at the end of 28.83 ± 3.76 (minimum: 27 .91 and maximum: 32.89) (Table 2).

Table 2: Score on the IFSF in women who use combined oral contraceptives, Coffee Region, Colombia, 2016-2020

Variables	Follow-up time					Average
	Start/ Baseline	Three months	Six months	Nine months	sweet months	
VE ₂ /DNG						
Desire	4,26 ± 1,09	4,37 ± 1,04	4,53 ± 1,25	4,61 ± 1,12	4,85 ± 1,13	4,52 ± 1,13
Excitement	4,35 ± 1,28	4,39 ± 1,15	4,41 ± 1,36	4,59 ± 1,43	4,62 ± 1,47	4,47 ± 1,34
Lubrication	4,58 ± 1,34	4,63 ± 1,27	4,67 ± 1,18	4,73 ± 1,17	4,77 ± 1,52	4,68 ± 1,30
Orgasm	4,67 ± 1,42	4,72 ± 1,31	4,78 ± 1,59	4,82 ± 1,42	4,89 ± 1,08	4,78 ± 1,36
Satisfaction	4,84 ± 1,57	4,91 ± 1,46	4,95 ± 1,24	4,97 ± 1,35	4,99 ± 1,16	4,93 ± 1,36
Pain	4,72 ± 1,15	4,83 ± 1,59	4,89 ± 1,03	4,91 ± 1,15	4,95 ± 1,27	4,86 ± 1,24
Total score	27,42 ± 1,31	27,85 ± 1,30	28,23 ± 1,27	28,63 ± 1,27	29,07 ± 1,27	28,24 ± 1,25
EE ₂ /LNG						
Desire	4,31 ± 1,04	4,35 ± 1,03	4,42 ± 1,08	4,47 ± 1,01	4,52 ± 1,07	4,41 ± 1,05
Excitement	4,39 ± 1,12	4,46 ± 1,17	4,49 ± 1,15	4,55 ± 1,08	4,63 ± 1,25	4,50 ± 1,15
Lubrication	4,52 ± 1,23	4,63 ± 1,09	4,66 ± 1,01	4,69 ± 1,11	4,71 ± 1,13	4,64 ± 1,11
Orgasm	4,64 ± 1,44	4,71 ± 1,22	4,73 ± 1,24	4,78 ± 1,09	4,84 ± 1,06	4,74 ± 1,21
Satisfaction	4,83 ± 1,51	4,92 ± 1,35	4,94 ± 1,12	4,95 ± 1,17	4,97 ± 1,19	4,92 ± 1,27
Pain	4,75 ± 1,05	4,87 ± 1,18	4,88 ± 1,39	4,92 ± 1,21	4,94 ± 1,08	4,87 ± 1,18
Total score	27,44 ± 1,23	27,94 ± 1,17	28,12 ± 1,16	28,36 ± 1,11	28,61 ± 1,13	28,08 ± 1,16
EE ₂ /DSP (n=76)						
Desire	4,36 ± 1,01	4,23 ± 1,05	4,21 ± 1,02	4,18 ± 1,07	4,16 ± 1,16	4,23 ± 1,06
Excitement	4,35 ± 1,26	4,31 ± 1,11	4,34 ± 1,15	4,27 ± 1,14	4,25 ± 1,17	4,30 ± 1,17
Lubrication	4,57 ± 1,32	4,52 ± 1,09	4,49 ± 1,21	4,41 ± 1,08	4,39 ± 1,25	4,48 ± 1,19
Orgasm	4,61 ± 1,25	4,51 ± 1,23	4,52 ± 1,37	4,49 ± 1,05	4,47 ± 1,03	4,52 ± 1,19
Satisfaction	4,89 ± 1,17	4,79 ± 1,14	4,77 ± 1,23	4,68 ± 1,13	4,72 ± 1,15	4,77 ± 1,16
Pain	4,83 ± 1,13	4,68 ± 1,15	4,69 ± 1,09	4,65 ± 1,19	4,63 ± 1,21	4,70 ± 1,15
Total score	27,61 ± 1,19	27,04 ± 1,12	27,02 ± 1,17	26,68 ± 1,11	26,62 ± 1,16	27,00 ± 1,15

At six months, the IFSF score was found to be ≤ 26.55 in 18.42% (n=14/76) of women in the EE₂/DSP group, followed by the EE₂/LNG combination group with 10.95% (n=7/73); at twelve months, it was observed that the score ≤ 26.55 was present in 26.73% (n=21/76) of women using EE₂/DSP and in 15.06% (n=11/73) of the EE₂/LNG users, while in the VE₂/DNG group there was none throughout the follow-up.

In the women of the EE₂/DSP group, a decrease in the arousal and lubrication domain score was observed at nine months, with 15 (19.73%) women having a score of ≤ 3.6 in both domains, the which increased to 23.68% (n=18/76) at twelve months; this did not occur in any of the women in the other two groups.

At twelve months of follow-up, the IFSF score was higher in the VE₂/DNG group, and lower in the EE₂/DSP group ($p < 0.05$); Observing a higher score in the desire domain with 4.85 ± 1.13 , compared to 3.61 ± 1.04 in the EE₂/DSP group. In the EE₂/LNG group, a neutral effect was detected, as few differences were found in the score by domains and in the total score of the IFSF (Table 3).

At the 12-month follow-up, vestibulodynia/superficial pain during intercourse was detected in 11.84 (n=9/76) of women in the EE₂/DSP group, followed by 8.21% (n=6 /73) of women users of the EE₂/LNG combination, a situation that was not detected among women users of VE₂/DNG.

The frequency of weekly sexual relations in the VE₂/DNG users increased from 2 (at the beginning) to 5 (at the end of the study), with a range that varied between 3 and 15 weekly sexual relations; while in the users of the EE₂/DSP combination, the frequency of weekly sexual intercourse increased from 2 to 3, presenting the lowest range among the three groups (1 to 9) (Table 3). Women in the VE₂/DNG group reported higher frequency of sexual thoughts and fantasies compared to EE₂/DSP, while women in the EE₂/LNG group were neutral.

VE₂/DNG users reported improvement in delivery, sexual enjoyment, and with sexual activity in general, as well as in the frequency of achieving orgasm, which was not documented in the other two groups.

Table 3: Weekly frequency of sexual intercourse in women who use combined oral contraceptives, Eje Cafetero, Colombia, 2016-2020

Contraceptive	Start / Baseline	Three months	Six months	Nine months	sweet months
VE ₂ /DNG	2 (range: 0-4)	2 (range: 1-7)	4 (range: 1-9)	5 (range: 4-12)	5 (range: 3-15)
EE ₂ /LNG	2 (range: 1-4)	2 (range: 1-6)	3 (range: 1-10)	4 (range: 3-11)	4 (range: 3-12)
EE ₂ /DSP	2 (range: 0-5)	2 (range: 0-7)	2 (range: 0-6)	3 (range: 1-8)	3 (range: 1-9)

At the end of the study, in the evaluation of the frequency of masturbation, there were differences between the groups, since the practice of masturbation, in the total of the participants of the VE₂/DNG group, rose from 74.66% to 86, 66%; those of the EE₂/LNG group went from 71.23% to 81.82% and those of the EE₂/DSP group from 72.23% to 78.94%. On the other hand, the use of erotic toys in the VE₂/DNG group increased from 26.66% to 37.33%, those in the EE₂/LNG group increased from 24.65% to 30.13% and those in the EE₂/ DSP decreased from 28.94% to 18.42% (p<0.01).

In adverse events, a statistically significant difference was observed in the appearance of acne between women in the VE₂/DNG and EE₂/LNG groups (p<0.03), with amenorrhea being more frequent in the VE₂/DNG group compared to the others. Two groups (table 4).

Table 4: Adverse events in women using combined oral contraceptives, Coffee Region, Colombia, 2016-2020

Adverse Events	VE ₂ /DNG (n=75)	EE ₂ /LNG (n=73)	EE ₂ /DSP (n=76)
	n (%)	n (%)	n (%)
Acne	4 (5,33 %)	16 (21,91 %)	8 (10,52 %)
Amenorrhea	31 (41,33 %)	5 (6,84 %)	6 (7,89 %)
Depressive Mood	2 (2,66 %)	10 (13,69 %)	7 (9,21 %)
Weight Gain	4 (5,33 %)	14 (19,17 %)	5 (6,57 %)

Discussion

In the present investigation, it was observed that, at the end of the study, the score in the Female Sexual Function Index (IFSF) was ≤26.55 in 26.73% of the users of the EE₂/DSP combination, followed by the group of EE₂/LNG with 15.06%; undetected finding with VE₂/DNG combination throughout follow-up. At nine months, the women in the EE₂/DSP group showed a decrease in the score for the arousal and lubrication domains (19.73%), which increased (23.68%) at the end of the study. At twelve months, the IFSF score was higher in the VE₂/DNG group, and lower in the EE₂/DSP group (p<0.05), with a higher score in the desire domain. The VE₂/DNG combination reported the highest frequency of weekly intercourse.

Regarding the effects observed with the combination VE₂/DNG and EE₂/LNG, both treatments showed a beneficial effect on the sexual function of the users, and were associated with improvements in the domains of the IFSF, with no significant differences between the two groups, which is consistent with the results published by Davis et al. [18]. For their part, Espitia et al. Reported that the VE₂/DNG combination resulted in less aggressive therapy in altering the sexual response cycle of users, while the EE₂/DSP combination significantly affects desire and arousal with lower IFSF scores [12]. In a single-institution, prospective, randomized study, 80 healthy women with a monogamous partner and an active sex life were randomized into two groups over a 3-month period. The authors conclude that contraception with EE₂/DSP increased the likelihood of worse sexual function in the desire domains (odds ratio [OR] 2.47, 95% confidence interval [CI] 1.22, 4.98; p = 0.01) and arousal (OR: 2.85; 95% CI: 1.34-5.93; p=0.005) as well as in the total IFSF score (OR: 2.01; 95% CI: 1.45-2.79; p<0.001) (19). This could be explained because combined oral contraceptives (COCs) increase serum levels of sex hormone-binding globulin (SHBG), which would result in a decrease in free testosterone, although it could also depend on the fact that women show flexibility in their autonomous and subjective stimulation [11,12].

In opposition to the aforementioned, Oranratanaphan et al. reported that oral contraceptive containing EE₂/DSP does not show unfavorable effects on sexual response and libido [12]. Which is similar to the findings of Skrzypulec et al., when they state that women using the EE₂/DSP combination functioned better sexually, particularly with regard to sexual arousal (p<0.006) [21].

In light of the discrepant results about the effect of COCs on women's sexual function, it is clear that the findings are inclined to affirm that the negative effect is more common with contraceptives containing antiandrogenic progestins compared to those containing antiandrogenic progestogens. androgenic progestogens; however, the true importance of changes in androgen levels on women's sexual function remains obscure, and this possible relationship is still unclear; although it is prudent to believe that some women are more or less susceptible than others to variations in androgen levels [18,20].

In the scenario of the findings of the present investigation, we dare to infer that the acceptability and continuation of an oral contraceptive method, which is used for contraceptive purposes, due to alterations in sexual relations, would become crucial points for its acceptability. And compliance, in which we align with the conclusions of Sabatini et al. [22]. However, understanding that female sexuality is complex and multifactorial, which is the result of the interaction of a series of external and internal factors, including physical, emotional, psychosocial and cultural determinants; it is prudent to understand that the negative effect attributed by different researchers to COCs, on the sexual function of women, as a consequence of their effect on androgens, is just one more of infinite factors involved; understanding that the leading role of endogenous testosterone in women's sexuality should be explored more thoroughly and carefully [16,17,21-24]. In their research Alexander et al. showed that plasma free testosterone levels in women taking oral contraceptives were strongly and positively associated with sexual desire, sexual thoughts, and anticipation of sexual activity [25]. These results are

consistent with the hypothesis that free testosterone can improve cognitive aspects of sexual behavior in women. Which is similar to that described by Abler et al., who conclude that female sex hormones can modulate more subtle aspects of sexual arousal and behavior involved in sexual expectation [26].

At the 12-month follow-up, superficial pain/vestibulodynia during intercourse was observed in 11.84% of the women in the EE₂/DSP group vs. 8.21% of the EE₂/LNG consuming women, a condition that was not detected in female VE₂/DNG users; This may be because the relative risk of superficial pain/vestibulodynia is higher when the contraceptive is of high progestin or androgenic potency, or low estrogen potency [27]. The reality is that the evidence for or against an eventual association between the use of oral contraceptives and vulvodynia/vestibulodynia has been controversial; to date, the data remain inconsistent [27-29].

It is relevant to determine the type of hormonal contraceptive to choose in a woman, due to the possible negative consequences for her sexuality, since it could enhance the presence of sexual dysfunctions, affecting her quality of life and sexual performance; therefore, it is essential that said prescription be carefully evaluated, in order to choose the most favorable option, where not only the contraceptive efficacy and safety of the product are combined, but also its potential effect on sexual function.

In the strengths of the study we highlight the number of participants included and the prospective nature of the controls; on the other hand, it makes an approach to a little explored aspect of hormonal contraception, such as its influence on the sexual function of women. In the limitations, the biases of a cross-sectional study stand out and that blood controls of the hormonal levels of androgens were not carried out. It is essential to produce more and better research evaluating the effect of hormonal contraceptives on women's sexual function.

Conclusions

The Estradiol Valerate/Dienogest (VE₂/DNG) combination achieved the highest scores, both in the desire domain and in the total score of the Female Sexual Function Index (FSFI); as well as a greater increase in the frequency of weekly sexual relations. It is essential to know the sexual health of the patients, before choosing a hormonal contraceptive, in order to evaluate the selection of the one that generates less affectation to their sexual function.

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Conflict of interest

None declared.

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