



ORIGINAL ARTICLE

Comparison of Primary Dysmenorrhea, Anxiety, Depression, Sexual Experience, and Quality of Life in Women Receiving a Copper-containing and Levonorgestrel-releasing Intrauterine Device

Bakır İçeren ve Levonorgestrel Salgılayan Rahim İçi Araç Uygulanan Kadınlarda Primer Dismenore, Anksiyete, Depresyon, Cinsel Deneyim ve Yaşam Kalitesinin Karşılaştırılması

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Abstract

Objective: This study aimed to compare primary dysmenorrhea, anxiety, depression, quality of life, and sexual life in women who have inserted copper-containing intrauterine devices (TCu380A-IUD) and levonorgestrel-releasing intrauterine devices (LNG-IUD).

Method: This comparative, descriptive, cross-sectional study with a pretest-posttest design was conducted on 160 women, including 80 who received TCu380A-IUDs and 80 who received LNG-IUDs. Data were collected using the visual analog scale, spielberg state and trait anxiety, beck depression, short form (SF) 36-quality of life, and Arizona sexual experiences scale. The data were analyzed by number, percentage, mean, standard deviation, chi-square test, Fisher's exact test, and t-test for independent/dependent samples.

Results: The pain level of the LNG-IUD group was lower at the last follow-up. The levels of anxiety and depression were moderate in both groups. The posttest scores of the SF 36-quality of life scale of the TCu380A-IUD group were statistically significantly higher than those of the LNG-IUD group in physical function, physical and emotional role difficulty ($p<0.05$). Furthermore, the posttest measures of the LNG-IUD group's SF 36-quality of life scale were significantly higher than the pretest in pain, general health, energy/vitality, and mental health ($p<0.05$). It was noted that at the first follow-up, the Arizona sexual experiences scale scores were similar in both groups.

Conclusion: LNG-IUD insertion may be preferred in patients with increased pain and decreased quality of life. Health professionals should provide effective training and counseling services to women using IUDs.

Keywords: Anxiety, dysmenorrhea, intrauterine device, sexuality, women

Öz

Amaç: Bu çalışmada, bakır içeren rahim içi araç (TCu380A-RİA) ve levonorgestrel salınlımlı rahim içi araç (LNG-IUD-RİA) uygulanan kadınların primer dismenore, anksiyete/depresyon, yaşam kalitesi ve cinsel yaşantılarının karşılaştırılması amaçlandı.

Yöntem: Ön test-son test karşılaştırmalı tanımlayıcı ve kesitsel nitelikte olan bu araştırma TCu380A-RİA ($n=80$) ve LNG-RİA ($n=80$) uygulanan toplam 160 kadın ile tamamlandı. Veriler anket formu, görsel analog ölçeği, Spielberg durumluluk ve süreklilik anksiyete, beck depresyon, kısa form (SF)-36-yaşam kalitesi ve Arizona cinsel yaşantılar ölçeği kullanılarak toplandı. Verilerin analizinde sayı, yüzde, ortalama, standart sapma, ki-kare, Fisher's exact test ve bağımsız/bağımlı örneklem t-testi kullanıldı.

Bulgular: Araştırmada, son izlemde LNG-RİA grubunun ağrı düzeyinin daha düşük olduğu tespit edilmiştir. Her iki grubun durumluluk, süreklilik kaygılarının ve depresyonlarının orta düzeyde olduğu belirlenmiştir. TCu380A-RİA grubunun SF 36-yaşam kalitesi ölçeğinin son test puanları fiziksel fonksiyon, fiziksel ve emosyonel rol güçlüğü alanlarında LNG-RİA grubundan istatistiksel olarak anlamlı derecede daha fazladır ($p<0,05$). Bununla birlikte, LNG-RİA grubunun

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SF 36-yaşam kalitesi ölçeğinin son test ölçümleri, ön test ile karşılaştırıldığında ağrı, genel sağlık, enerji/canlılık/vitalite ve mental sağlık alanlarında önemli ölçüde daha yüksek olduğu belirlenmiştir ($p<0,05$). Her iki grubun ilk izlemlerinde Arizona cinsel yaşantılar ölçeği puanlarının benzer olduğu belirlenmiştir.

Sonuç: LNG-RIA uygulaması, artan ağrı ve azalan yaşam kalitesi gibi durumlarda tercih edilebilir. Sağlık profesyonellerinin ria kullanan kadınlara etkin olarak eğitim ve danışmanlık hizmetlerini sunmaları gerekmektedir.

Anahtar Kelimeler: Anksiyete, dismenore, rahim içi araç, cinsellik, kadın

Introduction

In the world and Turkey, intrauterine devices (IUDs) are among the most common contraceptive methods (1,2). The copper-containing IUD was developed as an IUD in 1960 (3). The copper-containing IUD (TCu380A-IUD) was first approved by the United States Food and Drug Administration (FDA) in 1984 (four) and 1994 (ten) years (3,4). The levonorgestrel-releasing intrauterine device (LNG-IUD-Mirena®- Leiras Shering A.G.) was manufactured in Finland in 1990. It came into use in the United Kingdom in 1995 and in the United States in 2000 with FDA approval (5). FDA approved a 13.5 mg LNG-IUD in 2013 and a new 52 mg LNG-IUD in 2015 (6,7).

Randomized clinical trials have found that LNG-IUD reduced dysmenorrhea (8,9). In several studies, LNG-IUD was shown to reduce dysmenorrhea faster and earlier than TCu380A (9,10). Another study found that dysmenorrhea significantly decreased in LNG-IUD users compared with the first month and 6 months after TCu380A and LNG-IUD insertion (11).

LNG-IUD also causes depression and mood swings. The rate of depression and anxiety (18%) increased after using LNG-IUD in women who did not have mental health problems before using LNG-IUD (12). In a systematic review study examining the relationship between progestin-containing contraceptive methods and depression, it is shown that there is an association between progestin-only birth control pills, IUDs, and depression (13). The study by Worly et al. (14) reported that depression scores in patients who underwent LNG-IUD insertion decreased at month six compared with baseline. In another study, the use of LNG-IUD and oral progestin in women diagnosed with depression and taking antidepressants was found to weakly increase the risk of depression (15).

In a prospective study evaluating the quality of life of women using the 52 mg levonorgestrel-releasing intrauterine device (LNG-IUD), it was reported that the quality of life increased in women using LNG-IUD after 12 months (16). Another

study found that LNG-IUD insertion was not associated with women's quality of life (17). In another study, it was stated that there was no significant difference in the quality of life of women who were inserted with LNG-IUD and TCu380A-IUD (11).

At the same time, we found that most women could enjoy sexual activities more because using the IUD reduced their risk of pregnancy (11). In one study, it was determined that there was no difference between the sexual life of women who underwent LNG-IUD and TCu380A- IUD insertion (18). It was also found that the utilization of LNG-IUD was not associated with changes in women's sexuality (17). LNG-IUD was associated with poorer sexual satisfaction and increased sexual problems in women with menorrhagia (19).

This study aimed to compare primary dysmenorrhea, anxiety, depression, quality of life, and sexual life among women who underwent TCu380A and LNG-IUD insertion. Considering the purpose of the research, answers were sought to the following:

- How does affect that the use of TCu380A-IUD of women's primary dysmenorrhea, anxiety, and depression, quality of life, and sexual life?
- How does affect that the use of LNG-IUD of women's primary dysmenorrhea, anxiety, and depression, quality of life, and sexual life?

Material and Method

Design

This research was descriptive, cross-sectional, with a pretest-posttest comparison.

Participants

The study included women who underwent TCu380A-IUD insertion at the gynecology outpatient clinic of the Caucasus College Health Research and Application Center between July 2019 and July 2021 and women who underwent LNG-IUD-RIA insertion at the Kars Central Community Health Center. The power analysis was performed using G Power 3.1 software. The power analysis calculated that at a significance level of 0.05, effect width of 0.05, and power of 80%, at least 64 people per group were required to participate. While calculating the power analysis, Ramazanzadeh et al. (10) compared IUDs was taken as basis. The total sample of the study included 160 women.

Main Points

- The levonorgestrel-releasing intrauterine devices group reported lower pain compared to the copper-containing intrauterine devices (TCu380A-IUD) group, particularly at the final follow-up.
- Both groups exhibited moderate levels of anxiety and depression.
- The TCu380A-IUD group had higher scores in certain aspects of quality of life, such as physical function and difficulty with emotional roles.
- The study found no significant difference in sexual function between the two groups.

The inclusion criteria were age 18 to above years, literate, having an IUD inserted and using it for at least 6 months, body mass index between 19 and 30, and volunteering to participate in research.

The exclusion criteria were current pregnancy or lactation, any psychiatric disorder, use of antidepressant medication, and any disease that may affect sexuality (cancer, sexually transmitted disease, etc.).

Data Collection Tools

Survey Form

This form consists of questions regarding the reason for the indication for TCu380A- IUD and LNG-IUD insertion, age, self-reported height/weight, obstetric history, menstrual duration, intensity and symptoms, menstrual life impairment, marital status, educational status, economic status, and sexual life, which were created by reviewing the relevant literature (20-22).

Visual Analog Scale (VAS)

This scale indicating painlessness at one end and most severe pain at the other, 0-10 or 0-100 is the most commonly used scale to quantify pain intensity, with "0" defining painlessness and "10" defining most severe pain. The VAS is more sensitive and reliable than other one-dimensional scales for measuring pain intensity. The person marks their pain on a scale. Measurements were taken in centimeters between the onset of pain relief and the point marked by the person. It is an easy-to-understand scale (23).

The State-Trait Anxiety Inventory (STAI)

This scale was adapted for the Turkish population by Öner and LeCompte (24). The STAI consists of 40 items and includes two separate scales. It was developed as a means to identify how an individual feels in general. The reliability coefficient determined by the alpha correlation was 0.83-0.87. The STAI is a scale that shows how an individual feels in a situation and in particular conditions. The reliability coefficient was 0.94-0.96. Öner and LeCompte (24) defined the normal anxiety level as between 36 and 42. Higher scores indicate higher levels of anxiety, whereas lower scores indicate lower levels of anxiety.

Beck Depression Inventory (BDI)

This form, which comprises 21 items on emotional, cognitive, behavioral, and physical indications, enables the comprehensive evaluation of depressive symptoms and cognitive status of individuals. It was developed by Beck in 1961 and is a self-assessment inventory. Each option has four questions and is scored from 0 to 3. If the total score is 9 or less, it is evaluated as "no depression", if it is between 10-16, it is evaluated as "mild depression". If it is between 17-23, it is "moderate depression" and 24 and higher score is accepted as "severe depression". This inventory was translated into Turkish by Hisli Sahin (25) in 1988.

Quality of Life Scale [Short Form (SF) 36]

Turkish validity and reliability studies on the SF-36 were performed by Koçyiğit et al. (26). The SF-36 consists of eight sub-parameters and 36 items. Scoring is performed over 100 points, and the scores are between 0 and 100 points for each sub-parameter (27). The eight multi-item scales are physical functioning, difficulty in coping, pain, general perception of health, energy/vitality, social functioning, difficulty in coping, and mental health. A high score indicates good quality of life. The total score can be calculated separately for each subdimension in the scale.

The Arizona Sexual Experience Scale

This form, developed by McGahuey et al. (2000), was adapted to Turkish by Soykan (28). It has separate forms for men and women. The form for women was used in this study. The scale is a 5-item, 6-grade Likert-type, self-assessment scale. The lowest score that participants obtained from the scale was 5, and the highest score was 30. The sum of the points obtained from the scale items constitutes the total scale score. Low scores on the scale indicate that sexual responses are strong, easy, and satisfying, whereas high scores indicate sexual dysfunction (28).

Data Collection

The data, a questionnaire prepared for an initial assessment prior to IUD insertion, the BDI, the STAI, the SF-36, the Arizona Sexual Experiences, and the VAS were applied to women who registered at the gynecology outpatient clinic and the Kars Central Community Health Center for LNG-IUD and TCu80A- IUD insertion. Six months after both types of IUD insertion, for evaluation, the women interviewed were invited to the center where the application was performed. The same measurement tools were applied again. Informal consent was obtained from all women.

Statistical Analysis

Data were analyzed using IBM Statistical Package for the Social Sciences 25.0. Means and percentages were calculated to evaluate descriptive data. The relationships between two independent categorical variables were tested using chi-square analysis. Fisher's exact test results were used in cases in which the expected value was not given in the chi-square analysis. The differences between the two independent groups were examined using the t-test. Differences between two dependent numeric variables were examined with the t-test for dependent samples.

Ethical Considerations

Ethical approval was initially obtained from the Non-interventional Research Ethics Committee of the Kafkas University Faculty of Health Sciences in Kars, Turkey (decision no: 2019/60, date: 31.05.2019). After the addition of a co-author, the committee was informed and renewed approval was given (decision no: 2023/6, date: 01.06.2023).

Results

The distribution of the TCu380A and LNG-IUD groups according to their demographic characteristics is presented in Table 1. The groups were homogeneously distributed in terms of demographic characteristics.

The post-test STAI scores of the TCu380A-IUD group were significantly higher than those of the LNG-IUD group ($p<0.05$). In the LNG-IUD group, the STAI scores in the posttest were statistically significantly decreased compared to the pretest ($p<0.05$). The pretest BDI scores of the LNG-IUD group were significantly higher than those of the TCu380A-IUD group ($p<0.05$). Posttest VAS and ASEX scores of the TCu380A-IUD group were significantly higher than those of the LNG-IUD group ($p<0.05$). ASEX scores were statistically significantly decreased compared to the pretest ($p<0.05$). In the LNG-IUD group, the VAS and ASEX scores were statistically significantly decreased in the posttest than in the pretest ($p<0.05$; Table 2).

Posttest physical function, physical, and emotional role difficulty scores of the TCu380A-IUD group were statistically significantly higher than those of the LNG-IUD group ($p<0.05$). Posttest Pain scores of the LNG-IUD group were significantly higher than those of the TCu380A-IUD group ($p<0.05$). Physical function and emotional role difficulty scores in the posttest in the TCu380A-IUD group were significantly decreased compared with the pretest ($p<0.05$). Pain, general health, and energy/vitality scores in the posttest in the TCu380A-IUD group increased significantly compared with the pretest ($p<0.05$). In the LNG-IUD group, the scores of physical function, physical, and emotional role difficulty in the posttest were statistically significantly decreased compared with the pretest ($p<0.05$). Pain, general health, energy/vitality, and mental health scores in the posttest in the LNG-IUD group increased statistically significantly compared with the pretest ($p<0.05$) (Table 3).

Discussion

The pain level was lower in the LNG-IUD group than in the TCu380A-IUD group at the posttest (Table 2). In a study examining the effect of copper and levonorgestrel IUDs on dysmenorrhea, LNG-IUD insertion was found to significantly reduce dysmenorrhea (29). Lockhat et al. (30) found that 29 women with endometriosis significantly reduced pain intensity and frequency using VAS pain scoring due to LNG-IUD. Fadiloglu et al. (31) investigated the relationship between bleeding and dysmenorrhea and ultrasound findings in patients undergoing TCu380A-IUD. In this study, 70 of 267 patients reported dysmenorrhea before the procedure, whereas 86 reported dysmenorrhea at 6-week follow-up.

The state and trait anxiety level results of the TCu380A-IUD and LNG-IUD groups were similar and moderate in the 6th month before and after the procedure (Table 2). In a cohort

study, women who underwent LNG-IUD insertion showed higher anxiety symptoms than those who underwent TCu380A-IUD (32). In a research examining copper IUD complications, LNG-IUD users had more anxiety and depressive symptoms than TCu380A-IUD users (31). In this research, it is suggested that anxiety levels were similar and moderate in both IUD users, which may be related to the fact that women in both groups experienced the effects and side effects (hormonal adverse effects, mood changes, nervousness) of the hormonal IUD to different degrees.

The TCu380A-IUD and LNG-IUD groups were moderately depressed (Table 2). Furthermore, this study found that the TCu380A-IUD group had higher depression scores at the final measurement (Table 2). LNG-IUD-inserted women experience symptoms of depression (17,33,34). LNG-IUD insertion in women in the postpartum period was associated with a lower risk of depression diagnosis (35). Keyes et al. (36) reported a decrease in depressive symptoms with LNG-IUD. Toffol et al. (37) did not find any relationship between LNG-IUD utilization and depression scores. Tazegul Pekin et al. (38) investigated depressive symptoms in women using LNG-IUDs that scored depression scores before and 6 months after LNG-IUD insertion in premenopausal women and found that LNG-IUDs had no effect on depression.

ASEX scores were similar between the TCu380A-IUD and LNG-IUD groups at the pretest (Table 2). The cohort study conducted by Ferreira et al. (39) found no difference in sexual dysfunction between TCu380A-IUD and LNG-IUD users. Koseoğlu et al. (40) investigated the sexual function of two groups of women using TCu380A-IUD was compared with that of women not using contraceptives, and it was found that the scores of those using TCu380A-IUD were lower than those of the control group; however, the difference between them was insignificant. Moreover, this study found that the ASEX score of the TCu380A-IUD group was significantly higher than that of the LNG-IUD group in the post-test. In addition, ASEX scores were statistically significantly lower in the posttest than in the pretest in both IUD groups (Table 2). In the studies performed, no significant difference was noted in sexual activity among women who underwent LNG-IUD insertion (24,25). Several studies have concluded that LNG-IUD insertion improves sexual function (18,41). In our study, comparing scores before and after IUD, sexual function was negatively affected. This suggests that IUD insertion negatively affects sexual function.

In this study, the TCu380A-IUD group's posttest scores on the SF-36 were statistically significantly higher than those of the LNG-IUD group in physical function, physical role difficulty, and emotional role difficulty ($p<0.05$; Table 3). Perelló-Capó et al. (42) found that the use of LNG13.5-IUD was associated with better quality of life compared with Cu380-IUD throughout the 3 years. Investigating the results of the research examining the effects of different IUDs on quality of life, the TCu380A-IUD group had a significantly lower score in physical health, environment, and overall quality of life than the LNG-IUD group. (39,43). Abul et al.

Table 1.
Distribution of Demographic Characteristics by Group

Traits	TCu380A-IUD (n=80)		LNG-IUD (n=80)		χ^2	p
	n	%	n	%		
Reasons for IUD use					15.342	0.000*
Menorrhagia	0	0.0	14	17.5		
Contraception only	80	100.0	66	82.5		
Age	Mean \pm SD = 31.10 \pm 5.40		Mean \pm SD = 30.08 \pm 4.71		2.731	0.435
18-23 years	6	7.5	6	7.5		
24-29 years	24	30.0	30	37.5		
30-35 years	30	37.5	32	40.0		
above 35	20	25.0	12	15.0		
Spouse age	Mean \pm SD = 34.13 \pm 5.4		Mean \pm SD = 32.39 \pm 4.78		0.929	0.629
22-30	26	32.5	31	38.8		
31-35	26	32.5	26	32.5		
Above 35	28	35.0	23	28.7		
Family type					0.914	0.339
Extended family	60	75.0	65	81.2		
Nuclear family	20	25.0	15	18.8		
Dependent parent					1.345 ^{FE}	0.443
Yes	5	6.2	2	2.5		
No	75	93.8	78	97.5		
Relationship with the spouse					0.953 ^{FE}	0.878
Very good	27	33.7	23	28.7		
Good	37	46.3	37	46.3		
Medium	14	17.5	18	22.5		
Bad	2	2.5	2	2.5		
Spouse employment status					8.421 ^{FE}	0.007*
Employed	72	90.0	80	100.0		
Unemployed	8	10.0	0	0.0		
Spouse educational status					4.378 ^{FE}	0.108
Literate	0	0.0	0	0.0		
Primary school	2	2.5	2	2.5		
Elementary school-high school	24	30.0	13	16.2		
University and above	54	67.5	65	81.3		
Health insurance presence					7.530	0.006*
Yes	20	25.0	7	8.8		
No	60	75.0	73	91.2		
Marital status					-	-
Married	80	100.0	80	100.0		
Single	0	0.0	0	0.0		
Marriage duration	Mean \pm SD = 6.38 \pm 4.48		Mean \pm SD = 3.86 \pm 1.93		5.702 ^{FE}	0.017*
1-5 years	48	60.0	62	77.5		
More than 5 years	32	40.0	18	22.5		

Table 1.
Continued

Traits	TCu380A-IUD (n=80)		LNG-IUD (n=80)		χ^2	p
	n	%	n	%		
	Mean \pm SD = 6.38 \pm 4.48		Mean \pm SD = 3.86 \pm 1.93			
Employment status					2.746	0.097
Yes	15	18.8	24	30.0		
No	65	81.2	56	70.0		
Educational status					7.837 ^{FE}	0.029*
Literate	1	1.2	0	0.0		
Primary school	9	11.3	3	3.7		
Elementary school-High school	42	52.5	34	42.5		
University and above	28	35.0	43	53.8		
Income status					2.665	0.257
Income more than expenses	3	3.7	8	10.0		
Income equals expenses	63	78.8	61	76.2		
Income less than expenses	14	17.5	11	13.8		
	Mean \pm SD		Mean \pm SD		t	p
Height	162.33 \pm 6.83		162.73 \pm 6.94		-0.367	0.714
Weight	66.73 \pm 11.23		65.81 \pm 8.82		0.571	0.569
BMI	25.28 \pm 3.68		24.87 \pm 3.14		0.760	0.448
t= Independent Sample t-test, ^{FE} = Fisher's exact test, *p<0.05, TCu380A= copper, LNG= levonorgestrel-releasing, IUD= intrauterine device, SD=standard deviation, BMI= body mass index						

Table 2.
Investigation of Differences in STAI, BDI, VAS, and ASEX Scores between and within Groups

	TCu380A-IUD (n=80)	LNG-IUD (n=80)	t ^a	p
	Mean \pm SD	Mean \pm SD		
SAI pretest	41.65 \pm 9.75	42.65 \pm 10.19	-0.634	0.527
SAI posttest	39.57 \pm 9.56	36.65 \pm 8.30	2.066	0.040*
t ^b ;p	1.733;0.087	4.480;<0.001*		
STAI pretest	47.54 \pm 8.06	46.54 \pm 7.69	0.803	0.423
STAI posttest	47.65 \pm 8.50	47.91 \pm 8.37	-0.197	0.844
t ^b ;p	-0.093;0.927	- 1.122;0.265		
BDI pretest	14.54 \pm 10.26	18.02 \pm 10.98	-2.076	0.039*
BDI posttest	16.79 \pm 10.72	15.30 \pm 9.54	0.927	0.355
t ^b ;p	-1.460;0.148	1.558;0.123		
VAS pretest	4.25 \pm 2.06	4.07 \pm 1.54	0.609	0.544
VAS posttest	3.16 \pm 1.33	1.89 \pm 0.76	7.455	<0.001*
t ^b ;p	5.073;<0.001*	13.490;<0.001*		
ASEX Pretest	12.75 \pm 4.07	12.79 \pm 4.31	-0.057	0.955
ASEX Posttest	10.95 \pm 2.52	8.59 \pm 2.04	6.530	<0.001*
t ^b ;p	5.076;<0.001*	10.281;<0.001*		

t^a= Independent Sample t-test; t^b= Dependent Sample t-test *p<0.05, TCu380A= copper, LNG= levonorgestrel-releasing, IUD= intrauterine device, SAI= state anxiety inventory, STAI= state-trait anxiety inventory, BDI= beck depression scale inventory, VAS= visual analog scale, ASEX= Arizona sexual experiences scale, SD=standard deviation

Table 3.
Investigation of Differences in SF-36 Sub-Dimension SF-36 Scores between and within Groups

Sub-dimensions	TCu380A-IUD (n=80)	LNG-IUD (n=80)	t ^a	p
	Mean ± SD	Mean ± SD		
Physical function test	70.13±14.41	66.94±15.56	1.344	0.181
Physical function posttest	25.94±10.10	15.81±7.00	7.370	<0.001*
t ^b ;p	24.171;<0.001*	26.656;<0.001*		
Physical role difficulty pretest	26.88±20.58	30.00±20.82	-0.955	0.341
Physical role difficulty posttest	24.69±22.32	1.88±6.63	8.762	<0.001*
t ^b ;p	1.068;0.289	13.369;<0.001*		
Pain pretest	62.31±15.60	60.15±16.22	0.859	0.391
Pain posttest	76.71±15.45	88.70	11.20±5.619	<0.001*
t ^b ;p	-8.737;<0.001*	-17.065;<0.001*		
General health perception test	47.43±11.81	46.62±11.17	0.440	0.660
General health perception test	56.66±8.25	57.09±6.70	-0.358	0.721
t ^b ;p	-7.707;<0.001*	-9.334;<0.001*		
Energy/vitality pretest	42.38±7.83	44.94±9.92	-1.813	0.072
Energy/vitality posttest	51.38±6.98	50.44±5.69	0.931	0.353
t ^b ;p	-9.903;<0.001*	5.160;<0.001*		
Social function pretest	45.47±25.80	43.75±26.08	0.419	0.676
Social function posttest	46.41±15.69	48.13±9.35	-0.842	0.401
t ^b ;p	-0.408;0.684	1.752;0.084		
Emotional role difficulty pretest	31.67±31.78	27.50±32.16	0.824	0.411
Emotional role difficulty in posttesting	24.58±30.81	0.00±0.00	7.137	<0.001*
t ^b ;p	2.763;0.007*	7.648;<0.001*		
Mental health pretest	55.95±6.99	53.55±9.64	1.803	0.073
Mental health posttest	57.05±6.19	57.65±5.12	-0.668	0.505
t ^b ;p	-1.448;0.152	-4.888;<0.001*		
t ^a = Independent Sample t-test, t ^b = Dependent Sample t-test, *p<0.05 TCu380A= copper, LNG= levonorgestrel-releasing, IUD= intrauterine device, SD=standard deviation				

(43) specialty thesis in medicine examined the effect of oral dydrogesterone and LNG-IUD treatment on quality of life in patients with abnormal uterine bleeding. When the sf-36 scores of the LNG-IUD group and the oral dydrogesterone group were compared after at least 6 months of treatment, no significant difference was found in seven of the eight subgroups, and the energy/liveliness/vitality score was found to be higher in the oral dydrogesterone group (43). Skrzypulec and Drosdzol (44) detected that LNG-IUD users had a higher quality of life score than TCu380A- IUD users (18). However, this research suggests that the reason for the higher quality of life of women using TCu380A- IUD compared with those using LNG-IUD may be related to the hormone release of LNG-IUD. Likewise, LNG-IUD may rarely cause water retention and bloating due to the progesterone it contains.

Thus, our study revealed that the LNG-IUD group had significantly higher scores in pain, general health, energy/

vitality, and mental health in the posttest measures of the SF-36 than the pretest (p<0.05; Table 3). These findings indicate that LNG-IUD insertion increases the women's quality of life when measured six months later. Güzel (21) noted a significant improvement in SF-36 points in the group with LNG-IUD (26). Studies have demonstrated that the use of LNG-IUD increases quality of life (18,28,43). In a study by Déa et al. (45) comparing women of reproductive age who used hormonal, nonhormonal, and no contraceptive methods, the quality of life domain was lower in women in the hormonal contraceptive group than in women in the non-hormonal contraceptive group, and women in the hormonal contraceptive group had lower sexual function satisfaction, reduced arousal, and heightened pain, as well as higher anxiety and depression levels, increased pain, and poorer overall health. Regarding contraceptive methods, women using copper IUDs had better sexual function, including higher rates of arousal and lower anxiety, than those using oral contraceptives (45).

Importance of Midwives and Nurses

Nurses and midwives know that whether IUDs are used as a birth control method or for therapeutic purposes, some unexpected or possible negative effects may occur. The use of contraceptive methods is an important issue that should be seriously addressed in all healthcare services, especially primary healthcare. Specifically, effective and long-term contraceptive methods, such as IUD insertion, require careful implementation and follow-up. Nurses and midwives should consider conditions, i.e. Dysmenorrhea history, anxiety and depression levels, quality of life, and sexual function/dysfunction of healthy/ill women when planning and implementing contraceptive education and counseling services. In primary healthcare institutions, midwives and nurses are the first health professionals that women consult regarding this issue. It is necessary to raise awareness among midwives and nurses who provide family planning services regarding this issue by creating training programs in the light of the literature on the effects of family planning methods on women's lives.

Study Limitations

The fact that only IUD use was compared is a limitation of the study. Further studies may be needed including comparisons of other family planning methods.

Conclusion

LNG-IUD insertion may be preferred in cases such as increased depression and pain and decreased libido. Therefore, health professionals should consider conditions i.e. dysmenorrhea history, anxiety and depression levels, quality of life, and sexual function/dysfunction of healthy/ill women when planning and implementing contraceptive education and counseling services. It is anticipated that the results obtained will contribute to the education and counseling services that health professionals will provide, particularly before and after using IUDs. In developing countries like Turkey, the use of both effective and cost-effective methods is of critical importance in terms of accessibility and economic sustainability in family planning services. For this purpose, health professionals must provide more comprehensive services and education about IUDs and help women make informed choices.

Ethics Committee Approval: Ethical approval was initially obtained from the Non-interventional Research Ethics Committee of the Kafkas University Faculty of Health Sciences in Kars, Turkey (decision no: 2019/60, date: 31.05.2019). After the addition of a co-author, the committee was informed and renewed approval was given (decision no: 2023/6, date: 01.06.2023).

Informed Consent: Informal consent was obtained from all women.

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Footnotes

Author Contributions: Surgical and Medical Practices – R.T.D., Conception – R.T.D., T.S., H.Ç., F.T.; Design – R.T.D., H.Ç., F.T.; Data Collection and/or Processing – R.T.D., H.Ç.; Analysis and/or Interpretation – R.T.D., T.S.; Literature Review – R.T.D., T.S.; Writing – R.T.D., T.S., H.Ç., F.T.

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