



Research Article

Psychosexual Implications of Tubal Ligation in a Sample of Iraqi Women

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Abstract

Background: Tubal ligation, recognized as a surgical intervention that ensures permanent contraception, has established itself as an option for women seeking a definitive solution for family planning. **Objective:** To assess the psychosexual implications of tubal ligation in a sample of women in Baghdad, Iraq. **Methods:** A prospective cohort study was conducted in a teaching hospital for 2 years, from the first of January 2022 to the end of December 2023, in which 203 women who underwent tubal ligation were included. **Results:** In the present study, we found that 158 (77.8%) had no depression, mild depression presented in 27 (13.3%), and moderate depression in only 15 (7.4%). While 163 (80.3%) of women did not suffer from anxiety, 32 (15.8%) had mild to moderate anxiety, and only 8 (3.9%) were presented with severe anxiety. 27 (13.3%) have changed in coital frequency this week. 49 (24.2%) have a change in sexual desire, a change in pleasure, and 37 (18.2%) suffer from a change in orgasm. **Conclusions:** The current study concluded that there are noticeable psychosexual effects of tubal ligation in women.

Keywords: Iraqi women, Psychosexual implications, Tubal ligation.

الآثار النفسية الجنسية لربط البوق في عينة من النساء العراقيات

الخلاصة

الخلفية: ربط البوق المعترف به كتدخل جراحي يضمن منع الحمل بصورة دائمة، أثبت نفسه كخيار للنساء اللواتي يبحثن عن حل نهائي لتنظيم الأسرة. **الهدف:** تقييم الآثار النفسية الجنسية لربط البوق في عينة من النساء في بغداد، العراق. **الطريقة:** أجريت دراسة أترابية مستقبلية في مستشفى تعليمي لمدة عامين، من الأول من يناير 2022 إلى نهاية ديسمبر 2023، حيث تم تضمين 203 امرأة خضعن لربط البوق. **النتائج:** وجدنا أن 158 (77.8%) لم يكن لديهن اكتئاب، والاكتئاب الخفيف في 27 (13.3%)، والاكتئاب المعتدل في 15 (7.4%). في حين أن 163 (80.3%) من النساء لم يعانين من القلق، فإن 32 (15.8%) يعانين من قلق خفيف إلى معتدل، و 8 فقط (3.9%) يعانين من قلق شديد. 27 (13.3%) سجلن تغيرات في تواتر الجماع خلال الأسبوع الواحد. 49 (24.2%) لديهم تغير في الرغبة الجنسية، وتغيير في المتعة، و 37 (18.2%) عانين من تغير في الوصول إلى النشوة الجنسية. **الاستنتاجات:** خلصت الدراسة الحالية إلى أن هناك تأثيرات نفسية جنسية ملحوظة لربط البوق لدى العينة المستهدفة من النساء العراقيات.

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INTRODUCTION

Multiple biological and psychological factors influence sexual health, such as relationships, body image, and sociocultural context. The term female sexual dysfunction refers to conditions such as low sexual desire or interest, decreased arousal, difficulties achieving orgasm, and dyspareunia. There are some medical and gynecological conditions that can predispose to this dysfunction; however, it is difficult to separate them from other psychological factors such as economic problems, religious beliefs, trauma, or physical or sexual abuse [1,2]. Since 1951, Williams and his group have

described the association between female surgical sterilization and alterations in the pattern of the menstrual cycle, increased bleeding volume, and intermittent bleeding. Following this, the term "post-tubectomy syndrome" emerged, encompassing the aforementioned changes along with pelvic pain, dysmenorrhea, and dyspareunia. However, the specific alterations that characterize this syndrome remain unspecified [3]. In 1998, a systematic review on increased menstrual bleeding, pelvic pain, and dysmenorrhea concluded that performing surgical sterilization after age 30 did not lead to an increase in these symptoms. However, for some authors, this

syndrome also includes changes in sexual behavior and emotional health [4]. A different study from 2021, done in Turkey on women aged 25 to 43, looked at what happened to their menstrual and hormonal cycles and whether surgical sterilization with the Pomeroy technique during a cesarean section affected problems like dysmenorrhea and dyspareunia. The study included 220 women, 110 of whom had surgical sterilization and 110 of whom did not. This study did not show statistically significant differences, except for irregularities in the menstrual cycle, which were greater in women with sterilization. This study suggests that the surgical sterilization technique is an important factor in the severity of vascular damage, and considers that the Pomeroy technique is the most appropriate [5]. Sexual dysfunctions have an impact on women's quality of life and remain taboo in various countries. Inadequate sexual education, the interpretation of some religious and cultural codes, and a sense of shame can all have an impact on sexuality. Sexual dysfunction and the impact on quality of life after female surgical sterilization have been topics of discussion for decades [6,7]. Some studies report an improvement in sexual function following the reduction of pregnancy-related anxiety, while others suggest a decline due to a lack of desire and a perception of sexuality solely for procreation [8,9]. In a prospective study carried out in India and published in 1975, they evaluated sexual and psychological changes in 374 women between 20 and 42 years old, before and after surgical sterilization. They found that 65% of women decreased their sexual desire, and 29% had an alteration in orgasm. Paradoxically, 92% reported satisfaction after surgery [10]. Dyspareunia has a multifactorial cause. Vaginismus, inadequate lubrication, endometriosis, and genital infections are some of the causes. The reported prevalence is 8–21%. Proposals suggest that surgical sterilization may impact not only the nerve fibers but also the terminal branches of the uterine and ovarian arteries. It is important to understand that every surgical procedure causes tissue trauma, and the recovery process involves the formation of scars [11]. Everything seems to indicate that surgical sterilization is a risk factor for depression and anxiety, reported 2.34 to 2.88 times more after the procedure [9]. In their cross-sectional study (2021), Ashrafi et al. looked at sexual function (defined as ≤ 23 points on the IFSF), body image, quality of life (measured by the SF-questionnaire 12), and the prevalence of anxiety and depression (measured by the HADS questionnaires) in 600 women in Iran. The women were split into three groups: those who couldn't have children, those who had surgery to sterilize their uterus more than a year ago, and those who used condoms. They found that women with sterilization had the lowest IFSF scores, with a prevalence of sexual dysfunction of 88.5% (22.4 ± 5.3) compared to infertile women of 73.6% (24.7 ± 4.7) and condom users of 57.5% (28.03 ± 3.29). The group of women with tuberculosis recorded the

highest HADS scores for anxiety and depression, and the lowest scores for quality of life were statistically significant [9]. This study aims to assess the psychosexual implications of tubal ligation in a sample of women in Baghdad, Iraq.

METHODS

Study design and setting

This prospective cohort study was conducted in a teaching hospital for a 2-year duration, from the first of January 2022 to the end of December 2023. 341 women who underwent tubal ligation were included in the study but only 203 women continued to follow up. Data were collected using the Zung Self-Rating of Depression and Anxiety Scale, in addition to a question about demographic status, post-operation regret, and psychosexual function, from all women included in the study.

Ethical aspects

In this study, the techniques used involved human subjects and adhered to the ethical criteria set by the institutional (Al-Kindy College of Medicine) and the National Research Committee, as well as the updated version of the Helsinki Declaration about clinical research or equivalent ethical standards. Each participant provided a written consent before enrollment in the study.

RESULTS

This study included 203 women who underwent tubal ligation within the mean age of 34.12 ± 4.7 years at the time of sterilization; the mean husband age was 36.6 ± 3.4 years; the mean BMI was 28.7 ± 4.8 kg/m²; the mean parity was 4.3 ± 0.72 ; secondary or above educational level was presented in 35.5% of women; and only 23.6% were employed (Table 1).

Table 1: Demographic characteristics of participants

Variables	Value
Age (year)	34.12±4.7
Husbands age (year)	36.6±3.4
BMI (kg/m ²)	28.7±4.8
Parity	4.3±0.72
Educational level (2ndary or above)	72(35.5)
Employed	48(23.6)

Values are expressed as frequencies, percentages, and mean±SD.

The decision to undergo tubal sterilization was made as follows: The decision to undergo tubal sterilization was made by 112 (55.2%) women, 48 (23.6%) by husbands, and only 43 (21.2%) by medical professionals (Figure 1). According to the Zung Self-Rating of Depression and Anxiety Scale for the patients in the present study, we found that 158 (77.8%) had no depression, 27 (13.3%) had mild depression, and only 15 (7.4%) had moderate depression. While 163 (80.3%) of women did not suffer from anxiety, 32 (15.8%) had mild to moderate anxiety, and only 8 (3.9%) had severe anxiety (Tables 2 and 3).

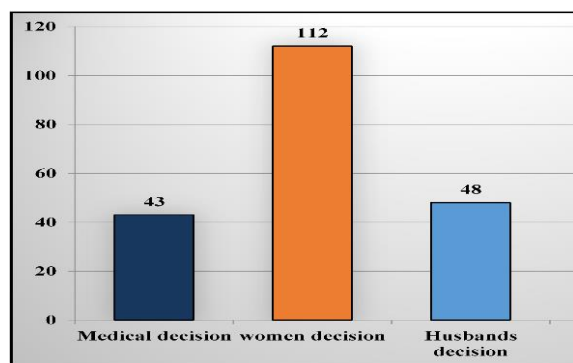


Figure 1: Decision-maker for tubal sterilization

Table 2: Distribution of patients according to depression levels post sterilization

Depression Score	Value
No depression	158(77.8)
Mild	27(13.3)
Moderate	15(7.4)
Severe	3(1.5)
Total	203(100)

Values are expressed as frequencies and percentages.

Table 3: Distribution of patients according to anxiety levels post sterilization

Anxiety score	Value
None	163(80.3)
Mild to moderate	32(15.8)
Sever	8(3.9)
Total	203(100)

Values are expressed as frequencies and percentages.

As shown in Table 4, 176 (86.7%) of women mentioned that there is no change in coital frequency per week, while 27 (13.3%) have a change in coital frequency per week. 154 (75.8%) show no change in sexual desire, while 49 (24.2%) have it. 157 (77.3%) reported no change in pleasure, whereas 46 (32.7%) reported a change in pleasure. Regarding the presence of orgasm, 166 (81.8%) women reported no change in orgasm, while 37 (18.2%) suffered from a change in orgasm.

Table 4: Distribution of patients according to sexual changes post sterilization

Change in Sexual aspects	No change n(%)	Change (decrease or increase) n(%)
Coital frequency/week	176(86.7)	27(13.3)
Sexual desire	154(75.8)	49(24.2)
Pleasure	157(77.3)	46(32.7)
Presence of orgasm	166(81.8)	37(18.2)

Values are expressed as frequencies and percentages.

DISCUSSION

For several decades, the hypothesis of the association between surgical sterilization and female sexual dysfunction has been proposed and its importance in women's quality of life has been recognized. In some studies, no changes in sexual health were found after surgical sterilization [7,8,12,13]. In other studies, surgical sterilization was linked to positive changes in sexual health. These studies posited that the use of a safe contraceptive method reduces anxiety and inhibition related to pregnancy fear, and that women who use this method typically have more stable

relationships and higher levels of education [14]. The majority of studies revealing negative changes in women's sexual health following the procedure have been conducted in traditional societies, where women's sexuality plays a crucial role. In these societies, sexual encounters are not viewed as interpersonal relationships, but rather as a passive role, with the woman's primary role being her fertility and capacity for motherhood. Therefore, limiting this function can bring about feelings of guilt, shame or other negative social perceptions. It is difficult to establish surgical sterilization as the only causal link [8,9]. In their prospective survey, carried out in the United States and published in 2002, which included 4,576 women between 18 and 44 years old with a follow-up of two years, Costello *et al.* reported that 80% did not experience changes in sexual interest, 18.3% had an increase, and 1.7% had a decrease. Regarding sexual pleasure, 81.7% reported no changes, 17.2% an increase and 1.1% a decrease [12]. Positive changes were 10 to 15 times more frequent than negative ones in those who experienced them. Remorse about the procedure led to negative changes in 3.2% of women, with 12.5% reporting a decrease in sexual interest and 16% reporting a decrease in pleasure [12]. Simonelli *et al.* conducted a study in Australia between 2004 and 2005, involving 2,721 women aged 16 to 64, which evaluated their sexual satisfaction, relationship satisfaction, and sexual pleasure. The study reported that 16.4% of women underwent surgical sterilization and found no association with sexual problems. When age and other sociodemographic factors were taken into account, they discovered that women who had surgical sterilization had less loss of sexual desire compared to women who had not had the procedure. They also had shorter times to reach orgasm (OR = 0.69) and were less likely to be unhappy with their sexual relationship compared to women who had not had the procedure. On the contrary, these women concluded that they had greater advantages in their sexual lives [11]. Regret about the procedure is the main factor associated with sexual dysfunction, depression, anxiety, and alterations in quality of life [12,15,16].

Conclusion

Tubal ligation has noticeable psychosexual effects on Iraqi women, and we strongly recommend a larger sample and more comprehensive future studies.

Conflict of interests

No conflict of interests was declared by the authors.

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Data sharing statement

Supplementary data can be shared with the corresponding author upon reasonable request

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