

CONTRACEPTION AND CHOICES

Sexual function in Iranian women using different methods of contraception

Ghadirian Fataneh, Mardani H Marjan, Rezaee Nasrin and Taghavi Taraneh

Aims and objectives. To determine the sexual function in Iranian women using different methods of contraception.

Background. Failure in family planning programmes can lead to reduced quality of life and threaten the health of the families in developing countries. One of the major causes of failure in family planning methods could be due to complications of them. One of the major unpleasant side effects of these methods, as an important cause of the rejection, is sexual dysfunction.

Design. A case-control study.

Methods. In this study, samples included 608 married women aged 15–49 years from Shahin Shahr health centres in Isfahan. Stratified sampling method was used to determine entitlement to select health centres, and convenience sampling method was used for women selection. The selected samples, based on using contraceptive methods, were divided into case group ($n = 306$) and control group ($n = 302$). Data were collected using sexual function questionnaire in women using different methods of contraception. Data were analysed by descriptive statistic and ANOVA.

Results. Results of independent t -test showed significant difference in all domains of sexual function in two groups ($p < 0.05$). Most contraceptive methods in control group were natural methods (28.4%), and the least used was vasectomy (1.8%). Findings showed that the least sexual dysfunction in Iranian women was in condom use method, and the most was in vasectomy method. There was a significant difference between all domains of sexual function (except pain) in types of contraceptive methods ($p < 0.05$).

Conclusions. This study revealed that in family planning programmes, contraceptive methods in women that are more effective and have less sexual function impairments should be recommended.

Relevance to clinical practice. Knowledge and awareness of the healthcare professionals regarding the sexual problems should be increased. Management of sexual dysfunction in a holistic approach in the primary care services might improve the wellness and quality of life of the women.

Key words: contraceptive method, health, sexual function, women

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Introduction

One of the major problems in developing countries is the population growth, which led to the economic, cultural and

social problems. Developing countries must balance their population growth rates commensurate with their capabilities to achieve health and well-being (Mangeli *et al.* 2009). It is not possible unless there is an effective family planning

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programme. Women in Iran use natural and medical methods for contraception. 17.8% of Iranian women use natural methods, of which 17.5% use coitus interruption method as the predominant method. The relative frequencies of using medical methods of contraception in Iranian women include 29.9% tablets taking, 21.4% condom use, 4.4% tubal ligation, 2.3% intramuscular depot injection, 1.3% intrauterine device and 0.7% husband vasectomy. Due to not using reliable contraceptive method, prevalence of unwanted pregnancy in Iranian woman is high (24.4%) (Toorzani *et al.* 2010).

Failure in family planning programmes can lead to reduced quality of life and threaten the health of the families. For example, the incidence of unintended pregnancies in women can lead to serious problems in marital relationships (Gao *et al.* 2008).

One of the major causes of failure in family planning methods could be due to complications of them (Bolourian & Ganjloo 2007). Adverse effects could affect the acceptance rate and the success rate of contraceptive methods. One of the major unpleasant side effects of these methods, as an important cause of the rejection, is sexual dysfunction (Zahumensky *et al.* 2008). Sexual dysfunction or sexual malfunction is defined as difficulty during any stage (desire, arousal, orgasm and lubrication) of the normal sexual activity, which prevents the individual or couple from enjoying sexual activity. Reported frequencies of sexual dysfunction due to the use of contraceptive methods in Iranian women showed high amounts, for example in orgasm 37%, sexual desire 35% and arousal 30% (Safarinejad 2006). Researchers according to an Internet-based survey reported that frequencies of sexual dysfunction in Korean women were 49% in arousal, 37% in lubrication, 37% in satisfaction, 34.6% in pain and 32% in orgasm (Song *et al.* 2008).

Sexual dysfunction, in fact, due to a variety of contraceptive methods can lead to serious consequences such as depression, anger, prevalence of substance abuse and mental imbalance (Tountas *et al.* 2004). Following the disruption of sexual function, it may create physical problems, isolation, anxiety, fear, emotional instability and feelings of duality (Hoga & Manganiello 2007). All these items will impact on marital satisfaction, which is one of the factors affecting sexual health. Sexual health disorders can lead to disturbances in other areas of sexual function such as sexual desire, sexual pain, orgasm, vaginal lubrication, sexual arousal and sexual satisfaction (Litzinger & Gordon 2005).

In addition to the direct impact of contraceptive methods on sexual function, other factors such as anatomical, physiological and cultural factors are also involved in sexuality

(Vahidi *et al.* 2006). The results of a study on two groups of women in the United States showed that oral contraceptives as a safe, effective and reversible method of contraception increase sexual energy in one group of women and little change in another group (Davis & Castano 2004). The results of another study showed that decreased desire after using oral contraceptive pills is associated with decreased androgen levels (Warnock *et al.* 2006). The results of a study on sexual activity in women after tubal ligation showed increase in frequency of sexual relations and, after vasectomy in their spouse, revealed no significant difference in female sexual satisfaction (Shain *et al.* 1991). The different results of studies show that the relationship between using contraceptive methods and sexual function is a complex process influenced by multiple factors (Schaffir 2006).

Given this fact, there is a rapid increase in Iranian women using these methods, it is important to evaluate complications of contraceptive methods. For healthcare systems, recognition and diagnosis of sexual health of women using contraceptive methods is very important. Knowing the sexual problems in women might provide an opportunity for planning and serving education and care. Despite the importance of sexual health assessment in women, the studies concerning sexual problems in Iranian women are limited. Therefore, this study was conducted to assess sexual function in Iranian women using different methods of contraception.

Methods

Design and sample

The study was conducted as a descriptive approach. The study population included all married women who were 15–49 years of age and under the treatment of the public health centres of Shahin Shahr in Isfahan. The sample size was calculated by taking the 95% confidence interval and the 90% power to test. Stratified random sampling was used to select the public health centres and then quota for each centre to select the women. Finally, selected participants depending on the use of contraceptives were divided into case group ($n = 306$) and control group ($n = 302$). The case group consisted of 306 women using contraceptive methods. Subjects in control group did not use any contraceptive method. It is noteworthy that all methods of contraception, including contraceptive methods for men in this study, were considered. Pregnant women, women in menopause stage and women taking psychiatric drugs were excluded.

Data collection tool

A two-part questionnaire was used to collect data. The first part of the questionnaire includes demographic information, such as age, level of education, occupation and type of contraceptive method used by women. The second part of the questionnaire contains sexual function in women. This questionnaire is recognised as the Female Sexual Function Index (FSFI). The FSFI, a 19-item questionnaire, has been developed as a brief, multidimensional self-report instrument for assessing the key dimensions of sexual function in women. It is a well-accepted instrument for assessing sexual function in women throughout the world. The FSFI consisted of six domains. Four domains are related to the four major categories of sexual function: desire, arousal, orgasm and sexual pain disorder. The fifth domain assesses the quality of vaginal lubrication, and the sixth domain is related to global sexual and relationship satisfaction. Considered features in subscales are frequency and level in desire domain; frequency, level, confidence and satisfaction in arousal domain; frequency, difficulty, frequency of maintaining and difficulty in maintaining in lubrication subscale. In satisfaction, assessed properties include satisfaction with amount of closeness with partner, with sexual relationship and with sexual life. The features in pain domain are frequency during vaginal penetration, frequency following vaginal penetration and level during and following vaginal penetration.

The desire domain scores range from 1–5 contain two questions, the arousal and vaginal lubrication scales separately, each with 4 questions with scores range from 1–5; and each parts of orgasm, pain and sexual satisfaction with three questions have scores range from 0–5. Score is calculated by adding the scores for each section in each sector multiplied by the coefficient of each component. Coefficients for each section, respectively, include: desire 0.6; each of sexual arousal and vaginal lubrication sections 0.3; and each of orgasm, sexual pain, and satisfaction sections 0.4. Each subscale could have six as the highest score. Finally, the full FSFI scale score, which could be between 2–36, was obtained by adding the six domain scores. Higher scores indicate better function. Cut-off point for full FSFI scale is 28. Therefore, sexual function scores lower than 28 were considered as sexual dysfunction.

For the first time, FSFI was designed by Rosen, and its reliability was calculated as 0.82 (Rosen *et al.* 2000). In Iran, the reliability and validity of the questionnaire were confirmed (Zeyghami Mohamadi & Ghafari 2009). In this

study, the validity of FSFI was confirmed by content validity method. In this regard, several experts in the fields of psychiatry and obstetrics and also gynaecology specialists reviewed the instrument, and they finally confirmed the content. To assess reliability of the questionnaire, test–retest method was used. The questionnaire was given to 10 women who were eligible for inclusion in study, but they were not subjects of the study. These women received the questionnaire again 2 weeks later. Pearson's correlation coefficient was calculated as 0.88.

Procedure

Women who came to choose public health centres were selected based on inclusion and exclusion criteria. Then, the women depending on the use of contraceptive methods were divided into two groups. After verbal and written informed consent was obtained from the women who were willing to participate in the study, the Female Sexual Function Index was used by the researchers using face-to-face interview technique. The questionnaire was completed by the participants, and if subjects had low literacy or were illiterate, it would be conducted by trained interviewers in health centres. The data collection tools were completed within 20–30 minutes.

Ethical consideration

The women included in the study were informed about the study purpose, and their written consents were obtained as well. Subjects were ensured about the confidentiality of their responses.

Data analysis

The data of the study were analysed using SPSS, version 13 for Windows (SPSS Inc., Chicago, IL, USA). The dependent variable of the study was sexual function. Domains of sexual function assessed in this study include the libido, sexual pain, orgasms, vaginal lubrication, sexual satisfaction and sexual arousal. Independent variables include socio-demographic and method of contraception in women and their spouse. Dependent and independent variables of the study were analysed by descriptive statistics and inferential statistics (ANOVA, independent *t*-test and chi-square test). To reflect that the characteristics were compared between women with and without sexual problems, ANOVA test was used. The significant level was considered at $p < 0.05$.

Results

The majority of women using contraceptive methods (48.36%) were women aged 27–28 years and the minority (6.53%) were above 39 years (range: 15–47). Of all the women, 34.31% were primary or intermediate school graduates, 50.32% were high school (the majority) and 15.37% were university graduates. 90.84% were housewives and the rest were employed. Results demonstrated no significant difference between demographic variables in two groups ($p > 0.05$). Results from chi-square test did not show significant association between demographic variables and overall sexual function scores in two groups ($p > 0.05$). Therefore, the possible effect of confounding variables seems to be negligible. Table 1 shows the frequency distribution of contraceptive methods in case group.

According to cut-off point, all subjects in two groups had some levels of sexual dysfunction. The finding showed significant difference between overall sexual function in case group (18.1 ± 4.2) and overall sexual function in control group (26.5 ± 4.5) by independent t -test ($p < 0.05$). Also, results of independent t -test showed significant difference in all domains of sexual function in two groups ($p < 0.05$). Table 2 shows the mean and standard deviation scores for the domains of sexual function in two groups. Other results showed among the various methods of contraception used

Table 1 The distribution of contraceptive methods used in women and their spouses in case group

Contraceptive method	<i>n</i> (%)
Pills	82 (26.8)
Condom	78 (25.5)
IUD	31 (10.1)
Vasectomy	6 (1.8)
Tubal ligation	12 (4.1)
Natural	87 (28.4)
Ampule	10 (3.3)
Total	306 (100)

IUD, intrauterine device.

Table 2 Domains of sexual function in two groups

Domains	Case group	Control group	<i>p</i> -value
	Mean (SD)	Mean (SD)	
Sexual desire	3.6 (1.8)	4.3 (1)	0.01
Sexual arousal	3.3 (1)	4.4 (0.4)	0.02
Lubrication	3.5 (1.5)	5 (1.2)	0.01
Orgasm	2.9 (1.5)	4.6 (1)	0.02
Pain	2.2 (1.2)	3.6 (1.2)	0.04
Sexual satisfaction	2.6 (1.4)	4.6 (0.7)	0.01

by subjects in the case group, sexual function has the lowest disruption in condom use method (22.9 ± 4.5) and the highest disruption in method of vasectomy in husband (14 ± 4.1). Table 3 shows the mean and standard deviation scores of each domains of sexual function in different contraceptive methods used by subjects in the case group.

Except pain domain ($p = 0.34$), the results of ANOVA showed significant difference between domains of sexual function in different contraceptive methods. Significant levels of sexual function domains in different methods of contraception used by case group were as follows: desire 0.001, arousal 0.011, orgasm 0.005, sexual satisfaction 0.004 and lubrication 0.001.

Discussion

Results did not show significant difference between demographic variables and sexual function in women. In another research in Iran, it is reported that increase in prevalence of sexual malfunction is directly proportional to increase in women age (Safarinejad 2006). Findings of other worldwide studies do not come to an agreement about this issue. Song *et al.* (2008) showed sexual dysfunction was higher in older Korean women. In contrast, a study on 1311 Canadian women who used hormonal contraceptives showed sexual function impairment in younger women was more (Wiebe *et al.* 2011). Other researchers stated educated women had more sexual dysfunction (Safarinejad 2006, Wiebe *et al.* 2011). Another study reported better sexual function in educated women (Gulum *et al.* 2010).

In our study, results showed that sexual function in control group was better than in case group (26.5 ± 4.5 vs. 18.1 ± 4.2). Perhaps different contraceptives have had adverse effects on sexual function in women in Iran. Another study reported that German women using oral contraceptives had more undesirable sexual performance compared with women not using oral contraceptives (Wallwiener *et al.* 2010a). Results of another study in Iran showed there was no significant difference between using contraceptive method and sexual malfunction in women (Safarinejad 2006).

In this study, the most common method of contraception in Iranian women was natural method and the least reported was vasectomy technique. Perhaps accepting more natural methods is because of safety, health, accessibility and reversibility of this method. Rejection of vasectomy for contraception can be attributed to cultural beliefs in Iran.

Findings showed that the least sexual dysfunction in women was in condom use method (22.9 ± 4.5) and the most in vasectomy method (14 ± 4.1). It seems if

Contraceptive method	Sexual desire Mean (SD)	Sexual arousal Mean (SD)	Lubrication Mean (SD)	Orgasm Mean (SD)	Sexual pain Mean (SD)	Sexual satisfaction Mean (SD)
Pills	3.1 (1.4)	2.8 (0.8)	2.6 (1.4)	2.5 (0.8)	2.2 (1.5)	2.3 (1.3)
Condom	4.1 (1.6)	4.5 (1.2)	3.9 (1.1)	4.3 (1.1)	2 (1.7)	4.1 (1.1)
IUD	2.7 (1.5)	2.1 (0.7)	2.6 (1.2)	2.1 (1.1)	2.4 (1.5)	1.5 (0.8)
Vasectomy	4.2 (1.8)	4.6 (1.1)	1.8 (0.5)	1.1 (0.9)	1.1 (0.1)	1.2 (0.4)
Tubal ligation	1.2 (0.1)	1.4 (0.4)	4.4 (1.8)	2.1 (1.4)	1.5 (0.6)	2.4 (0.8)
Natural	3.1 (1.4)	1.8 (0.6)	3.2 (1.2)	3.8 (1.1)	2.6 (1.7)	2.2 (1.3)
Ampule	3.2 (1.7)	2.6 (1.6)	2.4 (1.5)	1.5 (0.4)	1.7 (0.4)	2.3 (1.4)

SD, standard deviation; IUD, intrauterine device.

contraceptive method is more reliable, less anxiety and consequently less sexual dysfunction will exist. Nevertheless, the results of this study showed the opposite. Other researchers examined the effects of vasectomy of husband on female sexual desire (Thonneau & D'isle 1990). Their results showed that after vasectomy, sexual desire and continuity of sexual relations in women increased. These results are not consistent with the present findings in this regard. Findings in another study in Iran showed that the use of tubal ligation in women, as a safe contraceptive method, did not increase sexual satisfaction (Toorzani *et al.* 2010), while the study on 361 women in Hong Kong showed the use of tubal ligation increased their sexual function (Li *et al.* 2004). Researches stated tubal ligation method, due to permitting sexual activity without pregnancy risk, had positive effects on sexual function (Shah & Hoffstetter 2010).

Oral contraceptives were one of the methods used by Iranian women. A study in Italy on sexual function in women taking contraceptive pills showed an increase in sexual performance in the areas of sexual satisfaction, sexual pain and orgasm and no change in sexual desire domain (Caruso *et al.* 2005). Another study showed contraceptive pills can increase sexual desire and reduce sexual energy in women (Bjelica *et al.* 2003). A study in 500 women using oral contraceptives in United States showed sexual malfunction in pain, lubrication and arousal domains of sexual function (Gracia *et al.* 2010).

Our findings showed using condom is associated with less sexual dysfunction in women. It can be argued that condoms have no physical or psychological side effects, do not cause interference between the stages of sexual response and also prevent the transmission of sexually transmitted diseases (Bianchi-Demicheli *et al.* 2001). These features of condom method are reasonable cause for making the lowest sexual impairment. Instead, findings showed vasectomy method has led to the most sexual dysfunction in Iranian women. It is assumed cultural beliefs about vasectomy in

men have had an impact on their sexual function, and it can, consequently, affect sexual function of their women.

Like condoms, IUDs have less psychological problems and sexual dysfunction, and IUDs are considered as a reversible method. Therefore, using the IUD is also more acceptable. The study findings also showed the lack of sexual dysfunction in this method. We can say features of IUD method can have an influence on female sexual pleasure and success and finally sexual satisfaction. Safarinejad (2006) stated women using IUDs have higher scores in sexual arousal and lubrication domains of sexual function in stages of sexual activity. A study for assessing sexual function in women who used IUD method in Poland showed that the use of IUDs had positive effects on sexual desire and arousal domains of sexual function (Skrzypulec & Drosdzol 2008). In contrast, one study in 104 Iranian women on association between the use of IUD and sexual satisfaction showed no relation (Toorzani *et al.* 2010). In another study in Hong Kong, it is reported that the use of IUD had no effects on sexual function in women (Li *et al.* 2004).

Unexpected result of the present study was that the most sexual dysfunction was seen in permanent contraceptive methods. For example, the most sexual impairment in sexual desire and sexual arousal domains was seen in tubal ligation, and the most dysfunction in other domains of sexual function was seen in vasectomy. Fear of pregnancy is an important factor in sexual dysfunction, while our results show quite the opposite. According to the present results, we can conclude that other factors can affect sexual function in Iranian women. For example, there is a belief that sexual function after tubal ligation cannot succeed. Bolourian and Ganjloo (2007) stated that surgery on female sexual organs in Iran has led to a significant decrease in sexual desire and sexual excitement, and it has increased dyspareunia in women.

Findings in natural method of contraception showed that the sexual dysfunction was minimal. Perhaps facility and availability of this method were causes of less sexual dysfunction in it. The results of this study showed the second

Table 3 Mean and standard deviation scores for sexual function domains of the types of contraceptive methods in case group

method that has low sexual dysfunction was oral contraceptives. Also, the most frequently used method of contraception, next to natural method, was oral contraceptive method in Iranian women. In fact, contraceptive tablets are a convenient, reliable and reversible method accepted by the majority of women in our society. A study on oral contraceptives reported that there are no credible reasons that indicate the biological effects of oral contraceptives on sexual function (Wallwiener *et al.* 2010b).

The results showed that sexual dysfunction has been associated with injection method of contraception. Schaffir (2006) stated the physical complications of injection method in contraception (such as obesity, spotting and delay in ability to pregnancy) can affect psychological factors influencing sexual activity. A study on sexual function in women in United States showed there was no significant difference among effects of injectable contraceptive method on sexual function in women using them (Schaffir *et al.* 2010).

There was not statistically significant difference between sexual pain area of sexual function with contraceptive methods. Maybe subjects attributed their pain to something other than contraceptive method used.

Conclusions and recommendations

This study revealed that the majority of Iranian women using different methods of contraception had sexual dysfunction. Therefore, in family planning programmes, use of contraceptive methods that were more effective and had less sexual function impairment should be recommended. The results of this study can help increase knowledge and awareness of healthcare professionals about sexual health in women using contraceptive methods. Healthcare

professionals might contribute to the protection and development of women's sexual health by health education and counselling services. It seems to plan and change false cultural beliefs about use of contraceptives are very important. Also, it is important to identify causes of difference in sexual health between Iranian women and women in other countries. One of the limitations of this study is its non-probability sampling. It is suggested further studies be carried out in this area for assessing the multiple factors related to sexual function in women using contraceptive methods. Samples can also include men.

Relevance to clinical practice

Sexual problem is a common condition in Iranian women. Management of sexual dysfunction in a holistic approach in the primary care services might improve the wellness and quality of life of the women. Therefore, the knowledge and awareness of the healthcare professionals regarding the sexual problems should be increased. Healthcare personnel can help in this area with advising, training and screening.

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Contributions

Study design: MHM, RN; data collection and analysis: MHM, RN, TLT and manuscript preparation: GF, MHM.

References

- Bianchi-Demicheli F, Perrin E, Lüdicke F, Bianchi P, Fert D, Bonvallat F & Campana A (2001) Sexuality, partner relations and contraceptive practice after termination of pregnancy. *Journal of Psychosomatic Obstetrics and Gynecology* **22**, 83–90.
- Bjelica Artur L, Aleksandra K & Milana MS (2003) Hormones and female sexuality. *Medicinski Pregled* **56**, 446–450.
- Bolourian Z & Ganjloo J (2007) Evaluation of sexual dysfunction and some related factor in women. *Journal of Reproduction and Infertility* **31**, 163–170.
- Caruso S, Agnello C, Intelisano G, Farina M, Di Mari L, Sparacino L & Cianci A (2005) Prospective study on sexual behavior of women using 30 µg ethinylestradiol and 3 mg drospirenone oral contraceptive. *Contraception* **72**, 19–23.
- Davis A & Castano P (2004) Oral contraceptives and libido in women. *Annual Review of Sex Research* **15**, 297.
- Gao W, Paterson J, Carter S & Iusitini L (2008) Intimate partner violence and unplanned pregnancy in the Pacific Islands Families Study. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics* **100**, 109.
- Gracia CR, Sammel MD, Charlesworth S, Lin H, Barnhart KT & Creinin MD (2010) Sexual function in first-time contraceptive ring and contraceptive patch users. *Fertility and Sterility* **93**, 21–28.
- Gulum M, Yeni E, Sahin M, Savas M & Ciftci H (2010) Sexual functions and quality of life in women with tubal sterilization. *International Journal of Impotence Research* **22**, 267–271.
- Hoga L & Manganiello A (2007) Male behaviours towards unplanned preg-

- nancy: experiences of Brazilian low-income women. *International Nursing Review* 54, 346–353.
- Li RHW, Lo SST, Teh DKG, Tong NC, Tsui MHY, Cheung KB & Chung TKH (2004) Impact of common contraceptive methods on quality of life and sexual function in Hong Kong Chinese women. *Contraception* 70, 474–482.
- Litzinger S & Gordon KC (2005) Exploring relationships among communication, sexual satisfaction, and marital satisfaction. *Journal of Sex and Marital Therapy* 31, 409–424.
- Mangeli M, Ramezani T & Mangeli S (2009) The Effect of Educating about Common Changes in Pregnancy Period and the Way to Cope with them on Marital Satisfaction of Pregnant women. *Iranian Journal of Medical Education* 8, 305–312.
- Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R & D'agostino R (2000) The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. *Journal of Sex & Marital Therapy* 26, 191–208.
- Safarinejad M (2006) Female sexual dysfunction in a population-based study in Iran: prevalence and associated risk factors. *International Journal of Impotence Research* 18, 382–395.
- Schaffir J (2006) Hormonal contraception and sexual desire: a critical review. *Journal of Sex & Marital Therapy* 32, 305–314.
- Schaffir JA, Isley MM & Woodward M (2010) Oral contraceptives vs injectable progestin in their effect on sexual behavior. *American Journal of Obstetrics and Gynecology* 203, 545.
- Shah M & Hoffstetter S (2010) Contraception and sexuality. *Minerva Ginecologica* 62, 331.
- Shain R, Miller W, Holden A & Rosenthal M (1991) Impact of tubal sterilization and vasectomy on female marital sexuality: results of a controlled longitudinal study. *American Journal of Obstetrics and Gynecology* 164, 763–771.
- Skrzypulec V & Drosdzol A (2008) Evaluation of quality of life and sexual functioning of women using levonorgestrel-releasing intrauterine contraceptive system—Mirena. *Collegium Antropologicum* 32, 1059–1068.
- Song SH, Jeon H, Kim SW, Paick JS & Son H (2008) The prevalence and risk factors of female sexual dysfunction in young Korean women: an internet-based survey. *The Journal of Sexual Medicine* 5, 1694–1701.
- Thonneau P & D'isle B (1990) Does vasectomy have long-term effects on somatic and psychological health status? *International Journal of Andrology* 13, 419–432.
- Toorzani ZM, Zahraei RH, Ehsanpour S, Nasiri M, Shahidi S & Soleimani B (2010) A study on the relationship of sexual satisfaction and common contraceptive methods employed by the couples. *Iranian Journal of Nursing and Midwifery Research* 15, 115.
- Tountas Y, Creatsas G, Dimitrakaki C, Antoniou A & Boulamatsis D (2004) Information sources and level of knowledge of contraception issues among Greek women and men in the reproductive age: a country-wide survey. *European Journal of Contraception and Reproductive Healthcare* 9, 1–10.
- Vahidi S, Ardalan A & Mohamad K (2006) Assessment of prevalence the primary infertility in Iran in the years of 2004–2005. *Journal of Reproduction and Infertility* 7, 243–251.
- Wallwiener CW, Wallwiener LM, Seeger H, Mück AO, Bitzer J & Wallwiener M (2010a) Prevalence of sexual dysfunction and impact of contraception in female German medical students. *The Journal of Sexual Medicine* 7, 2139–2148.
- Wallwiener M, Wallwiener LM, Seeger H, Mueck AO, Zipfel S, Bitzer J & Wallwiener CW (2010b) Effects of sex hormones in oral contraceptives on the female sexual function score: a study in German female medical students. *Contraception* 82, 155–159.
- Warnock J, Clayton A, Croft H, Segraves R & Biggs F (2006) Comparison of androgens in women with hypoactive sexual desire disorder: those on combined oral contraceptives (COCs) vs. those not on COCs. *Journal of Sexual Medicine* 3, 878.
- Wiebe E, Brotto L & MacKay J (2011) Characteristics of women who experience mood and sexual side effects with use of hormonal contraception. *Journal of Obstetrics and Gynaecology Canada* 33, 1234.
- Zahumensky J, Zverina J, Sottner O, Zmrhalova B, Driak D, Brtnicka H & Citterbart K (2008) Comparison of labor course and women's sexuality in planned and unplanned pregnancy. *Journal of Psychosomatic Obstetrics & Gynecology* 29, 159–165.
- Zeyghami Mohamadi Sh & Ghafari F (2009) Sexuality dysfunction and its relation with quality of life in women cancer patient. *Journal of Iran Women, Midwifery and Infertility* 12, 39–46.

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