

Effect of Core Stability Training on Postpartum Mother's Sexual Desire

Abstract

Background: Women may experience different problems in every aspect of their sexual life throughout their lives; therefore, it is essential to check women's sexual health and try to improve it. The present research aims to assess core stability trainings on postpartum mothers' sexual desire. **Materials and Methods:** This quasi-experimental research was conducted by random sampling on 72 mothers who referred to comprehensive health centers in Isfahan in 2019 in postpartum period. The samples were divided into experimental and control groups by random placement method (blocking). Core stability exercises were performed in the experimental group for 24 sessions. The demographic questionnaire and Female Sexual Function Index (FSFI) were filled out in two stages (before and one month after the intervention) by the samples, and the data were analyzed by Mann-Whitney, independent t-test, paired t-test, Chi-square. **Results:** The result of this study showed that the average score of the sexual desire after intervention in the experimental group was significantly higher than that in the control group ($p = 0.03$). The average score of the sexual desire after the intervention in the experimental group was significantly higher than that before the intervention ($p < 0.001$). The average scores of the sexual desire before and after the intervention in the control group were not significantly different ($p = 0.40$). **Conclusions:** Eight weeks of core stabilization exercises can improve endurance of the pelvic floor muscles and the central part of the body, subsequently promoting females' sexual desire. The findings of this study can be considered in the fields of education, health, clinical, and policy.

Keywords: Iran, libido, muscle stretching exercises, postpartum period

Introduction

A healthful sexual function is necessary to establish a mutual joy between couples, help interact with life problems, and ultimately, experience a happy and successful marriage.^[1] Sexual function is composed of four stages: sexual desire, sexual arousal, orgasm and breaking down; and occurrence of these stages in the body needs appropriate physiological capacity.^[2] Sexual desire is a mental sense of sexual excitement and pleasure from sexual arousal.^[2] It is the result of positive interactions between internal cognitive processes (thoughts, fantasies, imaginations, and daydreaming), physical-neural mechanisms (central arousal) and emotional components (temperament and levels of emotion) whose biological basis and fundamentals in humans are still unknown.^[3] In many countries, sexual problems are considered a taboo that can have a negative effect on the quality of

life, and can cause mental disorders.^[4] Low quality of life, anxiety, low self-esteem, introversion, nervousness, underlying pain and inability to concentrate and even disability in doing routine tasks are common consequences of failing to satisfy sexual instincts.^[5] The results of a study showed that 67% of divorces were due to sexual problems.^[6] Among divorce applicants in Iran, 66.7% of men and 68.4% of women were dissatisfied with their spouses' sexual life.^[7] Prevalence of sexual disorders increases during pregnancy and postpartum. Studies have shown that 91.3% of women suffer from sexual problems in the postpartum period.^[4,8,9] About two-thirds of women experience at least one sexual problem such as decreased sexual desire, lack of orgasm, intercourse pain, and vaginal dryness during this period. In one study, among Iranian women three to six months after childbirth, 31.25% lacked sexual desire, 33.13% lacked orgasm and 42% had pains during intercourse.^[8] In recent years, researchers have used a variety

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of interventions including methods based on psychological approaches, mechanical and physical methods (Kegel exercise), surgical treatments and chemical and herbal medicines, and traditional medicines (Hypnosis)^[1] to improve performance and sexual satisfaction in women. In physical and mechanical approaches to solving sexual problems, increasing exercises in pelvic tonicity can be pointed out because pelvic floor muscles play an important role in women's sexual function through their voluntary and regular contractions and intensification of sexual desire.^[1,9] In recent years, one of the most common exercise methods in the rehabilitation and promotion of sexual function in various patients has been core stabilization exercises.^[10] The main role of these muscles is to help stabilize the spine and pelvis in basic and functional movements. Therefore, their functional strengthening can improve the muscular and nervous system and support the spinal cord, especially in the lumbar spine.^[11] Women with strong pelvic floor muscles have a higher rating in sexual function (sexual desire, sexual arousal, orgasm, etc.). In addition, strengthening the pelvic floor muscles increases the sexual desire in the individual.^[12] Having a healthy pelvic floor muscle is very important in satisfying the sexual desire and orgasm.^[13] Other benefits of strengthening the pelvic floor muscles include preventing uterine prolapse, especially after childbirth, and in postmenopausal women, facilitating labor, and reducing labor pain in pregnant women, helping to reduce conditions such as urinary and fecal incontinence, especially in postpartum period and during menopause.^[14] In addition, the results of some studies have shown that one of the well-known exercises for core stability exercises is Kegel exercises that help strengthen the vulva and perineal muscles and pelvic floor muscles, prevent pelvic floor muscle relaxation syndrome, and improve pelvic blood flow.^[7,15] Since more core muscles are trained in core stabilization exercises and the muscles are in a state of contraction for a longer period of time, doing these exercises can be more effective than other exercises (Kegel).^[14]

Due to the fact that this method is low cost, non-invasive and non-pharmacological and that there is limited research in this field in the postpartum period in Iran, and since the positive effects of Kegel exercise on improving postpartum sexual function have been proved and core stability exercises work almost identically on the target muscles in Kegel exercises, this study investigates the effect of core stability exercises on sexual desire in postpartum period.

Materials and Methods

The present twogroup, twostage quasi-experiment was conducted in 2019. It was performed on women who had referred to selected health centers (four health centers were selected out of the health centers of Isfahan that were easily accessible for sampling) for postpartum care in Isfahan,

Iran. The study inclusion criteria consisted of personal consent to participate in the study, being married (living with a spouse), no medical condition under medical treatment, no history of pregnancy complications in recent pregnancy such as hypertension, intrauterine fetal death, psychological complications, sick child needing special care (a child that needs special care) and generally not having any problems that expose pregnancy at high risk, lack of sexual dysfunction disorder before pregnancy and at the moment, the absence of sexual problems in the spouse treated by a physician, having proper facilities for proper sexual intercourse, such as a separate room from the family members, the physical health of the mother to the extent that she can do the intended exercises, absence of drugs that affect sexual function by the spouse (A. Blocking H2 receptors, such as Cimetidine, B. hypnotic drugs, such as Alprazolam, C. Cardiovascular and antihypertensive drugs, Digoxin, D. Anticonvulsants, Carbamazepine, E. Opioid drugs, Heroin, F. Antihistamines, diphenhydramine, G. Anti-cancer drugs, Busulfan and other drugs, such as Bromocriptine, Danazole, Amantadine, Indo Metacins, Progesterones. The study exclusion criteria included absence of more than one session per week, failure to exercise properly (three sessions one hour per week for two months), incidence of disorder in inclusion criteria, and sexual inactivity in two weeks before completing the questionnaire. The participants were selected by random placement (blocking) in the experimental and control groups. The sample size was calculated using statistical formulas and based on a similar study with about 32 participants.^[16]

Taking into account the possible loss of samples, 36 people were selected for each group, in which the Z1 was the Confidence Interval (CI) that was considered to be 95%, and Z2 was test power that was 80%. The least difference between the mean of changes in sexual desire score between the groups was considered to be 0.70. The researcher first visited the health centers and checked the patients' documents and recorded their contact numbers. Then, they were contacted by phone, and after introducing and explaining the research goals, the samples were invited to enter the research. Demographic (including: the client's age, spouse's age, the client's job, client's education, spouse's education, duration of marriage, number of children, infant age) and Female Sexual Function Index (FSFI)^[17] questionnaires were completed by the samples before and one month after the intervention.^[18] Both experimental and control groups were evaluated according the instruments for measurement in order to evaluate homogeneity. The FSFI questionnaire consists of 19 questions that assess all aspects of female sexual function, but part of these 19 questions are related to the assessment of female sexual desire; hence, this tool was used in this study to assess sexual desire. The validity ($p < 0.001$) and

reliability (≤ 0.70) of this questionnaire in Iran were evaluated by Mohammadi *et al.* The experimental group was divided into two groups of 18 people. Each group performed the core stabilization exercises three days a week, one hour a day for two months (each session had seven types of exercises and each exercise was repeated 3-10 times) under the supervision of an instructor and in the sport hall of Isfahan University of Medical Sciences. Each session included 10 minutes of in-body warm-up, 40 minutes of core stabilization exercises and 10 minutes of body-cooling through stretching exercises. In the

control group, a training session was held to teach general exercises (other than the core stabilizer) and to deliver a sports CD for training at home according to the checklist and previous planning. The control group was followed up by telephone and video call. In case of any of the exclusion criteria, the sample was excluded from the study. Independent T-test, Mann-Whitney, Chi-square, and paired T-tests were used for statistical analysis, and SPSS software version 16 (SPSS Inc., Chicago, IL, USA, SPSS) was used for data analysis.

Table 1: Comparison of frequency distribution of demographic characteristics between experimental and control groups

Variable	Experimental group	Control group	Mann-Whitney	
	(n%)	(n%)	Z	p
Mother's age (year)				
20-25	2 (6.20)	4 (12.50)	0.01	0.99
26-30	10 (31.20)	9 (28.10)		
31-35	15 (46.90)	11 (34.40)		
36-40	3 (9.40)	7 (21.90)		
40-45	2 (6.20)	1 (3.10)		
Spouse's age (year)				
26-30	6 (18.80)	7 (21.90)	0.67	0.50
31-35	13 (40.60)	15 (46.90)		
36-40	10 (31.20)	7 (21.90)		
40-45	1 (3.10)	3 (9.40)		
More than 45	2 (6.20)	0 (0)		
Mother's education level				
High School Diploma	3 (9.40)	4 (12.50)	0.83	0.41
Associate Degree	0 (0)	3 (9.40)		
Bachelor's Degree	15 (46.90)	14 (43.80)		
Master's Degree	12 (37.50)	7 (21.90)		
PhD	2 (6.90)	4 (12.50)		
Spouse's education level				
High School Diploma	2 (6.20)	2 (6.20)	1.07	0.28
Associate Degree	2 (6.20)	4 (12.50)		
Bachelor's Degree	14 (43.80)	15 (46.90)		
Master's Degree	7 (21.90)	8 (25)		
PhD	7 (21.90)	3 (9.40)		
Duration of marriage (years)				
1-5	20 (62.50)	16 (50)	1.09	0.29
6-10	8 (25)	9 (28.10)		
11-15	2 (6.20)	4 (12.50)		
16-20	2 (6.20)	3 (9.40)		
Number of children				
1	21 (65.60)	19 (59.40)	0.68	0.49
2	11 (36.40)	11 (36.40)		
More than 2	0 (0)	2		
Infant's age (months)				
2-3	5 (15.60)	4 (12.50)	0.32	0/75
3-4	9 (28.10)	10 (31.20)		
4-5	2 (6.20)	2 (6.20)		
5-6	12 (37.50)	10 (31.20)		
6-8	4 (12.50)	6 (18.80)		

Table 2: Comparison of mean score of sexual desire in the experimental and control groups before and after the intervention

	Before intervention	After intervention	Paired <i>t</i> -test		
	Mean (SD)	Mean (SD)	<i>t</i>	df	<i>p</i>
Sexual desire					
Experimental group	3.12 (0.70)	3.82 (0.79)	5.67	31	<0.001
Control group	3.37 (1.14)	3.30 (1.14)	0.85	31	0.40

Table 3: Comparison of mean sexual desire score before and one month after intervention? between the experimental and control groups

	Experimental group	Control group	paired <i>t</i> test or independent <i>t</i> test ?		
	Mean (SD)	Mean (SD)	<i>t</i>	df	<i>p</i>
Sexual desire					
Before intervention	3.12 (0.70)	3.37 (1.14)	1.06	62	0.29
After intervention	3.82 (0.79)	3.30 (1.14)	2.14	62	0.03

Ethical considerations

Informed consent form was obtained from patients. The right to anonymity and confidentiality of information and the right to leave the investigation at any desired time were also preserved (Ethical code: IR.MUI.RESEARCH.REC.1398.395).

Results

Totally, 72 women met the study inclusion criteria and were randomly allocated to either the intervention ($n = 36$) or control group ($n = 36$). A total of eight mothers (four in the intervention group and four in the control group) did not complete the program due to their busy schedule or other unknown reasons. No statistically significant differences were observed between the two groups in terms of mean scores of mothers' demographic variables ($p > 0.05$) and the groups were almost the same in terms of the demographic characteristics [Table 1]. The independent *t*-test revealed that there were no significant differences between the groups in the average score of the sexual desire before the intervention. The paired *t*-test indicated that mean score of sexual desire index after the intervention was significantly higher than that before the intervention for experimental group $p < 0.001$ [Table 2]. Moreover, after one month of intervention, there was a significant difference between the experimental and the control groups in sexual desire index score (0.03) [Table 3].

Discussion

The present study aims to determine the effect of core

stability exercises in the postpartum period on maternal sexual function. The results of the present study showed that core stabilization exercises significantly improved and enhanced sexual desire in mothers in the postpartum period. It also showed significant positive changes in sexual desire in the experimental group after the intervention. In addition, the amount of sexual desire in the experimental group compared to that in the control group increased significantly. This increase in sexual desire in mothers can be due to strengthening the pelvic floor muscles, increasing blood flow to these muscles and the genital area, followed by increased sympathetic nerve activity and secretion of catecholamine. To support this finding, the results of the same studies can be applied. This finding is in line with that of the study conducted by NK Beji,^[19] who showed that improvements in sexual desire, performance during coitus and achievement of orgasm were observed in women who received pelvic floor muscle rehabilitation.^[19] Nazarpour *et al.*^[20] reported that postmenopausal women who did pelvic floor strengthening exercises had better sexual performance. According to Sacomori *et al.*,^[12] women with good" muscle function (able to maintain contraction under examiner's resistance) had significantly better indexes of sexual desire, excitement, lubrication, and orgasm than those with weak/poor function; however, the results of the present study were not in line with that of da Silva Lara *et al.*^[21] In this study, physical exercise and pelvic floor muscle exercises were able to reduce stress and anxiety and strengthen the pelvic floor muscles in postmenopausal women, but did not improve their sexual function. The reason for this difference may be the long duration of the intervention, the difference in the age of the subjects and the use of different tools to assess women's sexual function. The main difference is about the age of the samples, which was postmenopausal women in the above study and women in the postpartum period with an average age of 30 years in the present study, which could have made a difference in the results of the study.^[21] In general, the present study was effective in improving the sexual desire of mothers in the experimental group in the postpartum period. Despite the results of conflicting studies,^[21] most of the studies in question have shown that performing core stabilizing exercises improves sexual desire in women. In addition to the results desired by the researcher, performing these exercises had an effect on the abdominal muscles and other muscles of the body, and this shows that apart from the target muscles of the study, improvements were seen in other muscles. Therefore, the results of this research can be considered in the fields of education, clinical, research, policy-making, and in institutions such as comprehensive health centers and health networks. Limitations of this study include lack of a proper emotional relationship between husband and wife that impedes sexual function, as well as the existence of negative beliefs and attitudes toward speaking about and examining individuals' sexual function. In addition, some

subjects may not have enough concentration and precision to perform the movements and contraction of the muscle despite the trainer's efforts; nevertheless, these methods need to be used in addition to their prophylactic treatment; moreover, the effectiveness should be investigated in this area in order to reach better maternal condition in our country.

Conclusion

The study showed that the suggested exercises improved women's sexual desire; therefore, these exercises can improve the sexual health of mothers in the postpartum period, and they have changed and improved their lifestyle in this period, which can improve other aspects of people's lives to some extent. These results can be used by service providers of mothers and planners of target groups and they can be a basis for further research.

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Conflicts of interest

Nothing to declare.

References

1. Ahmadnia E, Haseli A, Karamat A. Therapeutic interventions conducted on improving women's sexual satisfaction and function during reproductive ages in Iran: A systematic review. *J Mazandaran Univ Med Sci* 2017;27:146-62.
2. Hsiao S-M, Lin H-H. Impact of the mid-urethral sling for stress urinary incontinence on female sexual function and their partners' sexual activity. *Taiwan J Obstet Gynecol* 2018;57:853-7.
3. Corona G, Petrone L, Mannucci E, Ricca V, Balercia G, Giommi R, *et al.* The impotent couple: Low desire. *Int J Androl* 2005;28:46-52.
4. Rezaei N, Janani F, Sharifi N, Omid F, Azadi A. Sexual function and quality of life among postpartum women: A cross-sectional study. *Int J Womens Health Reprod Sci* 2018;6:307-12.
5. Zenouzi A, Asghari M. A review of women's sexual dysfunction during postpartum. *SSU_Journals*. 2018;25:940-50.
6. Ranjbaran M, Chizary M, Matory P. Prevalence of female sexual dysfunction in Iran: Systematic review and meta-analysis. *J Sabzevar Univ Med Sci* 2016;22:117-1125.
7. Modarres M, Rahimikian F, Booriaie E. Effect of pelvic muscle exercise on sexual satisfaction among primiparous women. 2013.
8. Tork Zahrani S, Banaei M, Ozgoli G, Azad M. Investigation of the postpartum female sexual dysfunction in breastfeeding women referring to healthcare centers of Bandar Abbas. *Iran J Obstet Gynecol Infertil* 2016;19:1-12.
9. López-Lapeyrere C, Serna-Gómez N, Hernández-López AB, Pérez-García MF, Tejada-Esteban A, Solís-Muñoz M. The development and validation of a new postpartum sexual function and dyspareunia assessment tool: The Carol scale. *Midwifery* 2018;58:27-36.
10. Kibler WB, Press J, Sciascia A. The role of core stability in athletic function. *Sports Med* 2006;36:189-98.
11. Moradi B, Shojaedin SS. The relationship between core stability muscles isometric strength and endurance with the postural control and walking endurance in patients with multiple sclerosis. *J Sport Biomech* 2018;4:43-52.
12. Sacomori C, Virtuoso JF, Kruger AP, Cardoso FL. Pelvic floor muscle strength and sexual function in women. *Fisioterapia em Movimento* 2015;28:657-65.
13. Sobhghol SS, Priddis H, Smith CA, Dahlen HG. Evaluation of the effect of an antenatal pelvic floor muscle exercise programme on female sexual function during pregnancy and the first 3 months following birth: Study protocol for a pragmatic randomised controlled trial. *Trials* 2019;20:1-11.
14. Hoseinkhani M, Taghian F. Effects of Kegel, central, and combined stability exercises on the central muscle endurance and quality of life of primiparous women after episiotomy. *Iran J Obstet Gynecol Infertil* 2018;21:60-8.
15. Mahmoodi F, Mobaraki A. Assessment of effects of kegel exercises on reduction of perineal pain after episiotomy in primiparous women. *Iran J Obstet Gynecol Infertil* 2014;17:18-25.
16. Hajisadeghian R, Ghezelbash S, Mehrabi T. The effects of a psychosocial support program on perceived stress of family caregivers of patients with mental disorders. *Iran J Nurs Midwifery Res* 2021;26:47-53.
17. Wiegel M, Meston C, Rosen R. The female sexual function index (FSFI): Cross-validation and development of clinical cutoff scores. *J Sex Marital Ther* 2005;31:1-20.
18. Hosseini SS, Asl AK, Rostamkhany H. The effect of strength and core stabilization training on physical fitness factors among elderly people. *World Appl Sci J* 2012;16:479-84.
19. Beji NK, Yalcin O, Erkan HA. The effect of pelvic floor training on sexual function of treated patients. *Int Urogynecol J* 2003;14:234-8.
20. Nazarpour S, Simbar M, Majd HA, Tehrani FR. Beneficial effects of pelvic floor muscle exercises on sexual function among postmenopausal women: A randomised clinical trial. *Sex Health* 2018;15:396-402.
21. da Silva Lara LA, Montenegro ML, Franco MM, Abreu DCC, de Sá Rosa ACJ, Ferreira CHJ. Is the sexual satisfaction of postmenopausal women enhanced by physical exercise and pelvic floor muscle training? *J Sex Med* 2012;9:218-23.