

# The Effect of Pelvic Floor (Kegel) Exercises on Sexual Satisfaction of 20-40-Year-old Women Referring to Women's Counseling Center in 2015: Rafsanjan Health Center No. 1

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DOI: 10.21859/focsci-04011478

Submitted: 12.13.2017

Accepted: 04.04.2018

## Keywords:

Orgasm

Pelvic Floor Exercises

Kegel

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## Abstract

**Introduction:** Sexual disorders are common among women. This study aimed to investigate the effect of pelvic exercises on women's sexual satisfaction.

**Methods:** Fifty subjects among 20-40-year-old women referring to the counseling center No. 1 of Rafsanjan Health Department were selected using convenient sampling and randomly divided into two experimental and control groups. The participants completed Linda Berg's Sexual Satisfaction Scale in pretest and posttests. Five training sessions were held on pelvic muscle (Kegel) exercises for the experimental group. The control group received no training. The collected data were analyzed using independent t-test, chi-square test and covariance analysis.

**Results:** Sexual satisfaction did not differ between the two groups in pretest ( $P = 0.614$ ). No high rate of sexual satisfaction was observed for both groups in the pre-test; however, the difference was significant between the pre- and post-test sexual satisfaction scores for the experimental group ( $P = 0.02$ ). Moreover, there was a significant difference between the sexual satisfaction scores in the post-test for both groups ( $P < 0.001$ ).

**Conclusions:** The Kegel exercise has an impact on women's sexual satisfaction; therefore, gynecologists, midwives, and psychologists can also benefit from this exercise to improve women's sexual function.

## INTRODUCTION

One of the most important issues which, especially among young couples, seriously overshadow marital relations is associated with sexual problems. These problems include frigidity, premature ejaculation, male erectile dysfunction and dyspareunia, which in most cases lead to the couples' dissatisfaction in terms of marital and sexual aspects of their lives [1]. Today, sexual behavior does not only serve to reproduce, but rather to gain physical and mental orgasm and is defined as a fun, relaxing, and legitimate entertainment. Sexual behavior is defined as a behavior causing sexual arousal and increases the likelihood of reaching orgasm [2-4]. The prevalence of sexual problems is common in Iran and, in most cases, it can be mentioned that sexual problems are the result of resistance, repression and fighting not accepting [5]. Because of modesty and shame, many people

do not refer to sexual health centers or, in the case of referring, some of them pose other problems not associated with the major problem [6]. The results of the studies indicated that 10 percent of men are suffering from erectile dysfunction and 40% of women are also suffering from sexual disorders in their marital life [7]. It is also highlighted that many women do not experience orgasm and, surprisingly, some women believe that there is no such thing as orgasm in women. The findings of a study conducted in Iran showed that the most common sexual problems among males in Iran are erectile dysfunction and premature ejaculation, respectively; however, women's most prevalent problems were sexual dissatisfaction and dyspareunia. Further, sexual tension and differences were reported for 55% of couples. It was also proposed that 50 percent of divorces in Iran are

due to sexual disorders and problems. This is represented to the family court in another form and the couples state their justifications for divorce as lack of understanding and some other issues [8].

Women's sexual disorders include low or hypoactive sexual dysfunction, sexual aversion disorder, female sexual arousal disorder, orgasm disorder, sexual pain, dyspareunia, vaginismus, or muscle spasm of the vagina and sexual dysfunction [9, 10]. Lack of appropriate information about sexual functioning is probably the main problem among people with sexual dysfunction [11]. Anxiety is also as one of the main factors associated with sexual dysfunction [12]. Various methods are presented for the treatment of sexual dysfunction. They include psychotherapy [13], hypnotic, bio-feedback [14], and hormone therapy [15]. The surgical and behavioral methods like regular desensitization [16], master and Johnson's couple therapy [17], improve couples' relationships [18], and physical exercise [19] have been also employed to treat sexual dysfunction. Kegel exercise is one of these methods. In 1948, Arnold Kegel, an American gynecologist, pointed to the importance of pelvic floor exercises in postpartum functional recovery. Since then, women in Western countries are encouraged to do pelvic floor exercises in order to strengthen their pelvic floor muscles. Kegel exercises or exercises are to strengthen the muscles supporting the urethra, bladder, uterus, rectum, anal and vagina in pelvic floor. These exercises strengthen the muscles around the vagina, control the urinary and fecal incontinence, and prevent uterine prolapse [20]. The most important muscle strengthened by these exercises is called Pubococcygeus. It is a u-shaped muscle and stretches from rear of the anterior pelvic to the posterior of the pelvis and binds to the pubic bone to the coccyx (tail bone) and supports women's vagina and anus in both genders [21]. These exercises contribute to improving many problems after delivery. Research has shown that women who regularly do these exercises during pregnancy period would control postpartum incontinence better. These exercises also result in re-contraction of vaginal tissues which get a little loose after vaginal delivery and therefore affect the couples' sexual lives [22]. According to what mentioned, this study aimed to investigate the effect of pelvic exercises on the sexual satisfaction of 20-40 year-old-women referring to the counseling center No. 1 of Rafsanjan Health Department in order to increase the rate of orgasm in women using pelvic floor exercises, followed by enhanced sexual satisfaction.

## METHODS

The population of this study included all nulliparous married women aged 20-40 years old, who referred to the counseling center No. 1 of Rafsanjan Health Department in 2015 due to sexual disorders (approximately 15 persons per month). Based on similar studies, the sample size was considered to be 50 persons being selected by random sampling and divided into two experimental and control groups on the basis of age and socioeconomic status. Inclusion criteria were as follows: Iranian, Shia Muslim, permanent marriage contract, at least one year of marriage, obtaining sexual satisfaction score from the questionnaire within the range of poor (17-25) and medium (52-67), nulliparous, at least six months since the last date of delivery and hav-

ing vaginal delivery. The exclusion criteria also included a history of divorce, pelvic and breast surgery, addiction to drugs and alcohol, forced marriages, emotional stress (such as death of family members) over the past three months, having a baby with birth defects, known physical or mental illness influencing marital satisfaction and sexual activity (such as depression, mania, mutilation or quadriplegia, phobias, vaginismus determined and patient's having visited a physician to treat it). Linda Berg's Sexual Satisfaction Questionnaire was used to measure sexual satisfaction. It was developed by Linda Berg and Cresy [23]. The scale includes 17 questions being answered based on a 5-point Likert scale (namely always, often, sometimes, rarely, or never). Each response was scored from 1 (always) to 5 (never). The maximum and minimum scores obtained were 85 and 17, respectively. Obtaining a higher score is indicative of higher sexual satisfaction. The reliability of the scale was 77.74 in Iran [24]. After selecting participants in the experimental and control groups, training process initiated for the experimental group. The process consisted of 5 ninety-minute sessions per week.

Session I: Understanding normal sexual cycle

Session II: Expressing the pelvic floor muscles in sexual satisfaction

Session III: training long-cycle exercises in the Kegel pelvic exercises

Session IV: Reviewing previous materials and training short-cycle sports

Session V: Reviewing previous materials, evaluation of students and doing a complete exercise in the right way

The exercises were done three times a day when there was an intercourse. In each round, the participants had ten 1-3-second pelvic floor muscle contractions and the subsequent 3-second rest. Then, on the basis of their own potentials, they gradually increased the number and duration of contractions to reach 90-100 contractions per day with a 5-second contraction and 5-second rest. These exercises were carried out for 6 weeks. In order to ensure the effectiveness of exercises in terms of intended method and frequency, a weekly telephone follow-up was conducted for each participant by the researcher. In order to facilitate the evaluation and to be ensured, a reliability checklist was placed at the disposal of the participants to daily record their exercises and provide detailed weekly reports. The control group received no training on the pelvic exercises. To maintain blinding, they had a brief explanation on the process of sexual intercourse. Six weeks later, women's sexual satisfaction was assessed using Linda Berg's Sexual Satisfaction Scale. Pretest and posttest results were compared in the same period for the control group. The questionnaire was completed by interviews conducted by the researcher. To maintain moral standards and conduct, they were ensured of the confidentiality of their responses. They were also ensured that they can leave when they are further willing to participate in the study. In order to participate in the study, written consent forms were collected. In this study, to analyze the data, the SPSS software version 11 was used. To classify and summarize the findings, descriptive statistics including absolute and relative frequency tables, mean and standard deviation were used. Furthermore, to find the relationships between variables, inferential statistics including T-test, chi-square test and covariance analysis were employed.

**Table 1:** Difference in the Sexual Satisfaction Score of the Experimental and Control Group

	Experimental group	Control group	P-Value
	Mean $\pm$ SD	Mean $\pm$ SD	
Pretest	47.96 $\pm$ 7.76	46.80 $\pm$ 8.40	P = 0.614
Post-test	61.44 $\pm$ 8.29	49.36 $\pm$ 8.64	P < 0.001

**Table 2:** Analytical Covariance of Post-Test of Sexual Satisfaction

Source	SS	MS	df	F	P-Value	Effect size	Power
Group	146.34	1	146.34	5.81	0.020	0.112	0.665
Pretest	2191.98	1	2191.98	86.97	< 0.001	0.655	1
Group*pretest	32.82	1	32.82	1.30	0.260	0.028	0.20
Error	1159.34	46	25.20				
Total	158722.0	50					

## RESULTS

The mean age of participants was  $30.44 \pm 6.707$  (range: 19-40 years) and mean marriage duration  $8.14 \pm 5.37$  years (range: 1-20 years). In terms of educational level, 54% had a diploma and 46% had university education. The mean score of participants' sexual satisfaction was  $47.38 \pm 8.02$  (range: 26-64). In the pre-test phase, in all subjects, 74% had low sexual satisfaction and 26% moderate. In experimental group, 72% of subjects had low and 28% moderate sexual satisfaction. In the control group, 76% had low sexual satisfaction and 24% had moderate ( $P = 0.747$ ). High sexual satisfaction was not observed in the groups. In terms of post-test, there were 40%, 44% and 16% of low, moderate, and high sexual satisfaction, respectively. In the experimental group, the frequency of low, moderate and high sexual satisfaction was 20%, 48% and 32% respectively. In the control group, low and moderate sexual satisfaction was 60% and 40% respectively. No cases of high sexual satisfaction were observed in the control group ( $P = 0.001$ ). No significant correlation was observed between age and marriage duration with sexual satisfaction scores at different stages of measurement ( $P > 0.05$ ). The Kolmogorov-Smirnov p-value of sexual satisfaction score was 0.330. Pretest scores of sexual satisfaction were compared for the experimental and control groups. The results of T-test showed that there was no difference between the two groups prior to the training process ( $P = 0.614$ ). In addition, the post-test scores were also compared in the experimental and control groups. T-test results revealed that the mean scores of post-test in the experimental group were greater than those in the control group. This difference was statistically significant ( $P < 0.001$ ) (table 1).

The homogeneity of variances for sexual satisfaction scores was measured. The significance levels of Levene's test were  $P = 0.818$ . To investigate the effect of pretest as a covariate variable, the analysis of covariance was used. Pretest effect was significant ( $P < 0.001$ ). This means that the subjects had prior knowledge of the questionnaire. In the next step, the pretest effect was neutralized. The ANCOVA results indicated that if the effect of pretest is neutralized, the effect of training on post-test scores will be significant ( $P = 0.02$ ) (table 2). This means that training has significantly increased the mean scores of sexual satisfaction.

## DISCUSSION

No difference was observed between sexual satisfaction scores of both groups prior to training; however, the results showed that sexual satisfaction in the experimental group was influenced by training and there was a significant difference between the experimental group and the control group who received no specific advice regarding sexual issues during this period. In terms of sexual satisfaction, no significant difference was observed for the control group after the study period. High sexual satisfaction was not for the control group at the pretest and posttest steps. In the control group, 76% of the participants had low sexual satisfaction in the pretest and this decreased to 60% at the posttest step. In addition, there were 24 percent of the participants with moderate sexual satisfaction and this also decreased to 40% at the posttest step. Although low sexual satisfaction is decreased and medium sexual satisfaction is increased in this group, the difference was not significant. No high sexual satisfaction was observed in this group. It seems that some factors during this period increased the participants' sexual satisfaction; however, the factors were not researched in the present study. It is possible that the participants had studied in this regard after facing the questionnaire or receiving relevant explanation. This research may have resulted in further studies and receiving information from others, and consequently increased rate of sexual satisfaction. In their study, Modarres et al. (2013) showed a significant difference in the sexual satisfaction level of those who carried out Kegel exercises over a 4-month period and those who did not [25]. Similar results were obtained by Braekken et al. (2015) that found a significant difference in improving sexual dysfunction in women who performed the pelvic muscle strengthening exercises for 6 months and the control group [26]. Independent t-test analysis showed that there was a significant difference between the sexual satisfaction scores in the experimental group before and after the testing process. Additionally, the ANCOVA results revealed that the difference between the mean scores was significant at different stages for the experimental group. It seems that teaching and training floor muscle exercises, known as Kegel exercises, could increase women's sexual satisfaction. As it can be observed, non-significant changes

are also observed for the control group in terms of sexual satisfaction. Madras' et al. study also indicated the same results. This result is similar Zahariou et al (2008) that Investigated 70 women doing the pelvic exercises. In their study, the participants were examined for 12 months since the urinary incontinence was also considered. The significant increase of the total score was from 20.3 to 26.8. Some women (38%) participating in this study were suffering from urinary incontinence and their problem decreased to 38.1% at the end of the year [27]. Like the findings of this study, Rosenbaum (2007) also suggested that the pelvic exercises are effective in promoting sexual performance [28]. Asad zadeh et al. conducted a cross-sectional study and it was shown that postpartum sexual disorders increased after the vaginal delivery and there was a significant difference between the sexual dysfunctions before and after the pregnancy [29]. Pauls et al. (2014) also found that pelvic floor exercises significantly improve the quality of life for women undergoing vaginal surgery. Sexual satisfaction was one of the variables regarded in discussing the quality of life [30]. Bortolami et al. (2015) indicated that the pelvic floor muscle dysfunction disturbs sexual satisfaction and strengthening the muscles can enhance the sexual satisfaction of women suffering from such dysfunction [31]. Hartmann and Sarton (2014) also showed that the pelvic floor muscle plays a critical role in women's sexual satisfaction [32]. Citak et al. (2010) conducted a study with the aim of investigating women's sexual function during the postpartum and the effect of early exercises of pelvic floor muscles. They concluded that these exercises do not increase sexual satisfaction [33]. This result is inconsistent with the results of our study. Lara et al. (2012) also concluded that these exercises are effective in strengthening the pelvic muscles; however, they have no effect on improving sexual function [34]. On the contrary, Kariman et al. (2005) demonstrated that one reason for women's sexual dissatisfaction would be loos pelvic floor muscles [35].

## CONCLUSIONS

The present study indicates the significant effect of the Kegel exercise on sexual satisfaction. Hence, it seems that counselors and people working in medical professions such as gynecologists and midwives can use this method to improve women's sexual function and teach it individually or in groups during workshops or at their clinics.

## LIMITATIONS OF THE STUDY

Sexual satisfaction is affected by various factors including physiological, psychological, economic and social factors; however, all factors were not considered in the present study. Furthermore, women's awareness of the physical and physiological sexual structure was not regarded in the study.

## ACKNOWLEDGMENTS

There is no acknowledgment for the present study.

## CONFLICTS OF INTEREST

There is no conflict of interest to declare.

## FUNDING

There is no funding for the present study.

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