The Effect of Pelvic Floor Exercise on Sexual Function after Vaginal Delivery

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Abstract

30-Women, delivered vaginally were chosen randomly from outpatient clinic of obstetric in Kasr-Elein University hospital to investigate the effect of pelvic floor exercises on sexual function. They performed pelvic floor exercises for 3-months, 3-sessions per week. Sexual function was assessed by the female sexual function index (FSFI) and pelvic floor muscles strength was assessed by perineometer.

Results: Sexual function improved with improvement of pelvic floor muscles strength (p <0.05).

Conclusion: Pelvic floor muscle strength affects sexual function in our study.

Key Words: Pelvic floor muscles – Perineometer – Vaginal delivery – Sexual life.

Introduction

The pelvic floor consists of a thin sheet of muscles that cover the pelvic outlet. We call this group of muscles the pubococcygeas, (since they run from the pubic bone to the coccyx).

These crucial muscles:

• Support the body’s internal organs.
• Enable you to maintain urinary and bowel continence, and healthy elimination.
• Provide support vital for reproductive and sexual functioning.
• Bolster pelvic organs during activities that stress them physically, such as laughing, sneezing and coughing [1,2].

During pregnancy, the abdominal wall has 40 weeks to expand. Pelvic floor muscles, however, endure extreme stretching, in just a matter of hours. And they do not automatically rebound after childbirth. It is believed that vaginal birth, in particular operative delivery, negatively affects pelvic organ support and sexual functioning in women [3].

Some factors are associated with a postpartum decrease of sexual function such as breast-feeding, vaginal delivery, operative vaginal delivery, perineal trauma, vaginal tears, and episiotomy [4].

Studies report that sexual dysfunction occurs post nataly but performance returns to pre pregnancy levels within 1 year after delivery. Nowadays, some women prefer a cesarean delivery to avoid pelvic floor damage and possible impairment of sexual function and continence [5].

As a consequence, the rates of cesarean delivery are increasing worldwide. Although pelvic floor damage and postpartum impairment of sexual function have been attributed to vaginal birth, the extent to which the mode of delivery contributes to sexual dysfunction is not clear, nor is the relationship between mode of delivery and pelvic muscles strength in the long term [6].

Indeed, studies have mostly focused on acute sexual problems such as loss of lubrication, pain on orgasm, pain during sexual intercourse, and loss of sexual desire for up to 6 months after childbirth [7].

After pregnancy, weakened pelvic floor muscles often cause urinary stress incontinence, the accidental release of urine while laughing, sneezing or coughing [48].

Weakened muscles can also contribute to a more serious condition where one or more organs drop down and sag into the vaginal wall. Unless we adequately strengthen pubococcygeas muscles after childbirth, these types of problems may worsen with subsequent vaginal deliveries, weight gain, and aging [9,10].
Pelvic floor exercises which are synonymous with Kegel exercises were described by Kegel in 1948, it is used to develop a better cortical consciousness about the pelvic floor muscles as well as great strength. Using Kegel contractions after childbirth will increase blood flow to the pelvic floor and help speed healing [11,12].

Contrary to what we might expect, exercising these muscles reduces pressure on episiotomy stitches and helps relieve perineum tenderness. These exercises will also help alleviate the discomfort of vulva edema, hemorrhoids, and anal fissures [13,14].

The pelvic floor muscles are directly responsible for the amount of sensation a woman feels during intercourse, and for the amount of grip felt by her partner [3,15].

So although an exercise regime for the pelvic floor muscles has the same physiological benefits as exercising any other muscles, the spin-offs are much better [10].

Exercise improves muscles tone which means that the muscle is tighter, so is stretched more by an erect penis. Strong, firm muscles have more nerve endings mean more sensations during sex. Exercise improves circulation, and this is particular important for the smaller muscles of the pelvic floor, which are responsible for engorging the clitoris when the female is aroused. Rhythmic contractions of the pelvic floor contribute to arousal [16].

The purpose of this study was to evaluate the effect of pelvic floor muscles strength on female sexual function.

Material and Methods

A random sample of 30 volunteers women were selected from obstetric clinic of Kasr Al-Ein University Hospital they are multi-para, delivered vaginally. Their age ranged from 25-37 years old. Duration of the study was 3 months.

- Perineometer: Peritron 9300 with vaginal sensor. It is used for pelvic floor muscles education and assessment of strength of the pelvic floor muscles.
- Female sexual function index (FSFI) questionnaire. The FSFI, a 19-item questionnaire, has been developed as a brief, multi-dimensional self-report instrument for assessing the key dimensions of sexual function in women. It is easy to administer. The questionnaire described was designed and validated for assessment of female sexual function and quality of life [17].

A- Evaluation:
- Evaluation of the strength of pelvic floor muscle by perineometer.
- FSFI:
  - Assessed the women in a question and answer fashion. The FSFI is a validated 19-item self-report measure of female sexual function that provides scores on 6 domains using factor analysis. The instrument measures desires, arousal, lubrication, orgasm, satisfaction and pain. Each domain is scored on a scale of 0-6, with higher scores indicating better function. To obtain domain scores, the scores of individual items comprised in the domain were added and the sum was multiplied by the domain factor. The sum 6 domain scores were also added to obtain the full scale score, as previously described. A domain score of zero indicated that the women reported no sexual activity during the previous month and the full score ranged from 2 to 36.

  - The women were also questioned about demographic and social variables such as their education level, marital status, frequency of sexual activity, socioeconomic status, and professional activity.

B- Procedures:

The purpose and the method of the study were explained to all participants. Evaluation of patients were done before starting and after 3 months of treatment, 3sessions per week and the duration of each session was 20 minutes.

All patients were instructed about pelvic floor squeeze before the perineal muscle strength was measured using sensor perineometer. The sensor was inflated by air for each participant and, to ensure uniformity, the probe was inserted to the level of the hymenal ring. The participants performed 3-maximal contractions. No visible or palpable contraction of the hip adductor, rectus abdominal, or gluteal muscles was allowed. The peak and average pressure were recorded as centimeter of water. All patients were performed pelvic floor exercise from crack lying position as a daily routine as following:

1- First squeeze the anal sphincter as tightly as possible, and then squeeze the vaginal sphincter as tightly as possible.
2- Then try to increase the intensity of your effort.
3- Hold the contraction as tightly as you can for five or six seconds.
4- Completely relax your effort, allowing your muscles to soften. Rest for a few moments.
5- Repeat the sequence 10 times to complete one set.
6- Perform 5-6 sets throughout the day.

**Statistical analysis:**

Descriptive statistic was presented as mean and standard deviation. Analytic test included student t-test for comparing of means between before and after treatment. Significant level of 0.05 was used throughout all statistical tests within this study. \( p \)-value <0.05 indicated significant results. The smaller the \( p \)-value obtained the more significant was the result.

**Results**

Detailed demographic and baseline data for all patients in Table (1).

Table (1): Baseline and demographic data.

<table>
<thead>
<tr>
<th>Age</th>
<th>31.09±4.29</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>35±2.1</td>
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</tbody>
</table>

**Frequency of sexual activity:**

- 1-2/month: 6 (20%)
- 1-2/week: 18 (60%)
- 3-4/week: 4 (13%)
- 4 > w: 2 (7%)

**Socioeconomic status:**

- Low-middle: 12 (40%)
- High: 18 (60%)

As shown in Table (2) & Fig. (2), pelvic floor muscle strength was significantly increased after treatment \( (p<0.001) \). Before treatment it was 72.03±8.12, after treatment it becomes 97.32 ±11.2.

Table (2): Mean value of vaginal pressure before and after treatment.

<table>
<thead>
<tr>
<th></th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>72.03 ±8.12</td>
<td>97.32 ±11.2</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MD</td>
<td>25.29</td>
<td>0.001</td>
</tr>
</tbody>
</table>

As shown in Table (3), sexual function differs between before and after treatment, where desire, arousal, lubrication, orgasm, satisfaction, pain and full FSFI scores were significantly different after treatment \( (p<0.05) \).

Table (3): Sexual function assessment before and after treatment.

<table>
<thead>
<tr>
<th>Function</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>4.1±1.7</td>
<td>1.5±1.0</td>
</tr>
<tr>
<td>Desire</td>
<td>3.5±1.0</td>
<td>5.8±1.0</td>
</tr>
<tr>
<td>Arousal</td>
<td>3.6±1.2</td>
<td>6.9±0.9</td>
</tr>
<tr>
<td>Orgasm</td>
<td>4.2±1.4</td>
<td>6.5±1.6</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>4.6±1.2</td>
<td>6.1±1.3</td>
</tr>
<tr>
<td>Lubrication</td>
<td>4.2±1.3</td>
<td>6.9±1.5</td>
</tr>
<tr>
<td>Full score</td>
<td>24.2±6.9</td>
<td>33.7±7.3</td>
</tr>
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</table>
**Discussion**

Our knowledge and understanding of the anatomy and physiology of normal female sexual response and the pathophysiology of female sexual dysfunction is limited [18,19].

The female sexual response cycle is a complex process relying on several factors, including vasculogenic, neurogenic, musculogenic, hormonal, and psychogenic factors [12,20].

The pelvic floor muscles, in particular the levator ani and perineal membrane, participate in female sexual function and responsiveness. These muscles are responsible for the involuntary rhythmic contractions during orgasm. The levator ani muscles also modulate motor responses during orgasm as well as receptivity [21,22].

It was suggested that hypotonic muscles could cause vaginal hyposthesia and coital anorgasmia [23,24].

However, in the present study, pelvic floor muscle strength was found to be correlated with sexual function in women, and a significant difference was found among the vaginal delivery. Postpartum sexual dysfunction has been well described. Barret et al., reported an increase in sexual morbidity in the first 3-months after delivery, which declined at 6 months without reaching pre pregnancy levels in 38% of the women. The authors reported that dyspareunia was significantly associated with vaginal delivery in the first 3 months after delivery.

On the other hand, Lydon-Rochelle et al., reported that, at 7 weeks postpartum, women who had instrument-assisted vaginal deliveries had significantly lower general health and sexual function scores than those who had normal vaginal delivery. It was suggested that, in the early postpartum period, sexual function was better in women with an intact perineum or with perineal tears than in women with a median episiotomy.

Dietz and Steensma [25], suggested that the degree of perineal trauma and the use of obstetric instruments correlated with the severity of postpartum dyspareunia, impaired sexual sensation, sexual satisfaction, and the ability to achieve orgasm. But these findings mostly depended on short-term postpartum sexual function changes, lasting between 6 months and 1 year. Furthermore, decreased postpartum sexual function may also be related to an hypo estrogenic state occurring because of lactation, emotional and relational changes such as a changing body image, fatigue because of the body’s needs and the quality of the relationship with her partner. Bo and Finckenhagen [26], reported that there was a significant reduction in number of women having problems with sex-life after exercise pelvic floor muscles.

An improvement in sexual desire and performance during coitus and achievement of orgasm were observed in women who received pelvic floor exercise [8].

Glazener [27] reported that many women reported they are able to reach orgasm more easily, and that their orgasms are more powerful, after a pelvic floor exercise program.

On the other hand Kaplan [23] reported that no difference in sexual function was found among women who performed pelvic floor exercise.

**In conclusion:** Pelvic floor muscle strength affects sexual function of women. So, we should encourage the women to practice pelvic floor exercise to improve their sexual satisfaction in addition to prevent pelvic floor dysfunction.

**References**