

Female Sexual Dysfunction and Related Quality Of Life: Impact of Pelvic Floor Muscle Training

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Abstract

Background: Female sexual dysfunction is a real worldwide health problem during their reproductive period, often undiagnosed and untreated in women and are associated with decreased quality of life. Sexual well-being depends on pelvic floor muscles that are strong enough to maintain their function. **Aim:** evaluate the effects of pelvic floor muscle training program on sexual life and quality of life of woman with urinary incontinence and sexual dysfunction. **Method:** This study used a quasi-experimental design and convenience sample technique at El-Fayoum General Hospital's obstetric and gynecological outpatient clinic. It involved 72 adult females aged 20-45, divided into a control group and a study group, receiving traditional treatment and educational training program. **Tools:** (1) A Structured interviewing questionnaire, comprised of three parts: Socio-demographic characteristics', Medical history and Obstetric history of female, (2) Female Sexual function Index (FSFI), (3) Female Practice questionnaire for pelvic floor muscle exercise, (4) Female knowledge questionnaire for pelvic floor muscle exercise, (5) WHOQOL-BREF quality of life scale. **Results:** revealed that positive correlation between female sexual function and their practice, knowledge score level and all aspect of quality of life in study group post educational training program. **Conclusions:** pelvic floor muscle training is an effective treatment for improving sexual dysfunction in female through increases pelvic floor muscle strength, which leads to significant improvement in female's sexual function and their quality of life. **Recommendations:** Mothers should be informed and trained to kegel exercises properly by educational courses. Increase public awareness through mass media about sexual dysfunction and its relation with pelvic floor exercise among women.

Key word: pelvic floor muscle, training, Female sexual dysfunction, Quality of life

1. Introduction

Healthy sex life is an important element of one's overall health. One of the markers of living standards is sexuality (Abd El Salam et al., 2021; Hassan et al., 2021). Sexuality is crucial for human functioning, but female sexual dysfunction (FSD) is a prevalent public health issue often resulting from direct effects of cervical cancer treatments (Hassan et al., 2021; Masaud et al., 2021). The sex life of females has changed over time due to events, and pregnancy and childbirth and the postpartum period are the events that influence the sexual behaviors and interactions treatment (Hassan et al., 2021;

Masaud et al., 2021; Ali et al., 2021).

Moreover, Sexual function is one of the main bases of women's quality of life that reflects their biological, emotional, and social well-being (Hassan et al., 2023). Any disorder that leads to inconsistency and dissatisfaction with sex can lead to sexual dysfunction in women (Hassan et al., 2025; Hassan et al., 2019; Ramadan et al., 2020). Female sexual dysfunction is a severe disorder involving desire, arousal, orgasm, and pain, resulting from various anatomical, physiological, medical, and psychological factors, affecting quality of life and interpersonal

communication (Hassan et al., 2021, Hassan et al., 2022). The pubococcygeus and iliococcygeus muscles, particularly during female orgasm, are crucial for involuntarily contracting during sexual arousal, reaching maximum tension and then relaxing (Ramadan et al., 2024; Hassan et al., 2024; Mohamed et al., 2024)

About 30% of women struggle with correct pelvic floor muscle contraction and lack proper information about Kegel exercises, despite the benefits of proper training and proper muscle contraction (Mohamed et al., 2024; Hassan et al., 2024; Hassan, 2020). Efficacy of the therapeutic exercises can only be established when patients adhere to the exercise regimen (Lofrisco, 2014; Mohamed et al., 2024; Omran et al., 2024). Normal females' experienced remarkable improvement in sexual arousal after only a week of Kegel exercises (Lowenstein et al., 2010). Pelvic floor muscle training (PFMT) can improve female sexual function by increasing the strength of muscles attached to the corpus cavernous of the clitoris, leading to better involuntary contraction, increased arousal, and orgasmic response, and increased blood flow to the pelvis (Hassan et al., 2024; Mohamed et al., 2023; Mohamed et al., 2024; Hassan et al., 2023; Omran et al., 2024).

Previous studies indicated that 40% of women are suffering from sexual disorders in their marital life (Derogatis & Burnett, 2008). Also, Ismail et al., (2021) who reveal that 67.8% of participating women in study were suffering from sexual dysfunction, which was a high prevalence. Anis et al. (2011) Who reported that the prevalence of 75.3%. In analysis of data in United States (US) from the national health and social life survey; it was found that sexual dysfunction is more prevalent in women (43%) than in men (31%) (Addis et al., 2006). Women's sexual disorders encompass various conditions such as low or hypoactive dysfunction, sexual aversion, female sexual arousal disorder, orgasm disorder, sexual pain, dyspareunia, vaginismus, and vaginal muscle spasm (Hassan, 2020; Hassan, 2020). Lack of appropriate information about sexual functioning is probably the main problem among people with sexual dysfunction (Zolfaghari., et al., 2011; Hassan, 2019).

Nurses play a crucial role in women's counseling,

particularly in addressing sexual dysfunction, a public health concern that can negatively impact women's quality of life. Early evaluation of sexual dysfunction is essential, and the diagnosis process often coincides with the first meeting between the woman and nurse. Nurses should provide counseling, guidance, and teach techniques to women with sexual dysfunction, as it presents a significant challenge in today's world. Maternity, gynecologic, and community health nurses should be equipped with the necessary knowledge and skills to help people adjust to daily problems and related difficulties (Hassan et al., 2019).

1.2 Significance of the Study

Sexual dysfunction is a common problem among women during their reproductive period and can decrease the women's overall quality of life. Available data indicate that more than 200 million women around the world are not familiar with these exercises and are not aware of their effects. Furthermore, 50% of women do not perform this exercise correctly (Hassan et al., 2024; Mohamed et al., 2023).

Abou Khodair et al.'s 2019 study in Egypt found a high prevalence of female sexual dysfunction (FSD) in Damietta governorate, with sexual desire disorders being the most common, accounting for 52% of the total (Ibrahim et al., 2013). The prevalence of sexual dysfunction is reported to be 40% in the United States and Sweden and 29.6% in Malaysia (Bakouei et al., 2007). The prevalence of these disorders in different cities of Iran varies from 60.3-89% (Bolourian & Ganjloo, 2007, Rafiei et al., 2007) Frequency of sexual function quality level in Tehran women has been reported as 17.8% poor, 56.2% moderate, and only 6% good (Foroutan & Jadid, 2008).

Kegel exercise is a painless, painless, and daytime treatment for pelvic floor muscle relaxation, which improves sexual function and plays a crucial role in sexuality (Hassan et al., 2024; Mohamed et al., 2023). The study evaluates the effectiveness of pelvic floor muscle training (PFMT) in improving female sexual life and quality of life, despite societal often-ignored needs.

1.3 Operational Definitions

Sexual function: Sexual function influenced by hysterectomy changes, significantly impacts women's satisfaction and feelings of inadequacy, making it crucial for a good quality of life (Nady et al., 2018; Mohammed et al., 2018).

Sexual dysfunction: defined as a challenge that one or more people encounter during a specific stage of sexual engagement, involves desire, arousal, or orgasm (Hassan et al., 2019).

Quality of life: Quality of life is influenced by an individual's physical and mental well-being, independence, social connections, and interaction with the environment (Nady et al., 2018; Mostafa et al., 2018).

1.4 Aim of the Study

The current study is conducted evaluate the effectiveness of pelvic floor muscle training (PFMT) in the improvement of female sexual life and its quality of life. This aim will be achieved through:

1. Assess female knowledge and practice for pelvic floor muscle exercise.
2. Assess the different dimensions of quality of life among studied female.
3. Develop and implement the educational training program for female about pelvic floor muscle exercise.
4. Evaluate the effect of the implemented educational training program on female sexual function and therefore their quality of life.

1.5 Study Hypotheses:

The hypotheses formulated by the researchers for the current study were:

Hypothesis 1: Pelvic floor muscle training is an effective for improving female sexual function and related quality of life.

Hypothesis 2: there are correlation between female sexual function and overall quality of life.

Hypothesis 3: Women's quality of life will be improved after program implementation as result

of improvement of their sexuality.

2. Materials And Methods

2.1 Research Design

A quasi-experimental design was adopted to accomplish the aim of this study.

2.2 Study Setting

Obstetric and gynecological outpatient clinic at El-Fayoum general Hospital affiliates to Ministry of Health (MOH).

2.3.1 Type of sample

A convenience sample technique was used in this study.

2.3.2 Sample size

The present study was conducted on 72 adult female from 20 to 45 years old from 1 July 2024 and finished in 31 December, according to the following mentioned criteria. The total sample divided into two equal groups; 36 female as control group and 36 female as study group. The control group were received traditional treatment, while study group were received the educational training program.

2.3.3 Inclusion criteria

- Adult female aged 20 to 45 years
- Being sexually active for at least the previous six months before the recruitment at the study.
- Married for at least one year previous to the interview date.
- Not having any psychological and physical problem
- Ready to self-reporting of sexual activity
- Having complained of pelvic muscle floor weakness, urinary incontinence and orgasmic difficulty
- Voluntary to participate.

2.3.4 Exclusion criteria

- Included pregnancy

- Affected by heart disease, diabetes mellitus, renal disease or pelvic organ prolapse.

2.3.5. The sample size

- The calculated sample size was 72 female according to the following equation (Dobson, A. J., 2002): $(n) = (z / \Delta)^2 p (100 - p)$
- Where: P: The prevalence of pelvic floor disorder 25% according to Samantray et al., (2008).
- $Z_{\alpha/2}$: a percentile of standard normal distribution determined by confidence level = 1.96, Δ : The width of confidence interval = 10%.
- $(n) = (1.96/10)^2 \times 25 \times (100-25)$; $(n) = 0.038416 \times 25 \times (100-25) = 72.03$.

2.4 Tools of Data Collection

Following a review of the relevant literature, four data collection tools were employed in this study:

2.4.1 Too I: self-administrated questionnaire:

It was developed a questionnaire based on the review of currently related literature and used by the researcher's to collect the data needed on the subjects of the study. It comprised of three parts:

- Part 1:** Socio-demographic characteristics' of female: It was used to assess; age, residence, working, education, ect...
- Part 2:** Obstetric history of female: It was used to assess; pregnancy number, parity number, mode of labor, ect...
- Part 3:** Medical history of female: It was used to assess present and past medical history as hypertension, arthritis, ect....

2.4.2 Tool II: Female Practice questionnaire for pelvic floor muscle training exercise. (Guerrero 2023, Newman & Burgio 2021):

The researchers based on the review of currently related literature developed it.

The scoring system:

This tool was used both before and 12 weeks later after educational training programs implementation. For female pelvic floor muscle exercise practices, the total scores extended from 0 to 16. There were 4 steps in total, with four marks given for each correctly completed step. Scores level was classified into two categories:

- Improper = scores < 60% of total scores (< 9.6 marks)
- Proper = scores \geq 60% of total scores (9.6 – 16 marks)

2.4.3 Tool III: Female knowledge questionnaire for pelvic floor muscle training:

This tool was used both before and two weeks later after the educational training program. The questionnaire was designed by the researchers to assess females' knowledge of pelvic floor muscle exercise. It consists of 13 multiple-choice questions concerning pelvic floor muscle how to find, benefits', best position, indication, contraindication and special instruction during procedure.

The scoring system:

The total knowledge scores ranged from 0-26, with two points given for every correctly answered question. The grading of the scores was divided into two tiers:

- Insufficient = scores < 60% of total scores (<15.6 marks).
- Sufficient = scores \geq 60% of total scores (15.6- 26 marks).

2.4.5 Tool IV: Female Sexual function Index (FSFI): (Rosen et al., 2000; Anis et al., 2011; Nady et al., 2018; Mohammed et al., 2018; Mostafa et al., 2018). It was a multidimensional self-report questionnaire that assesses the key dimensions of female sexual function during the four weeks prior to the interview day. It comprises 19-Multiple-choice-questions that measure six domains, including desire domain (2-questions), arousal (4questions), lubrication (4-questions), orgasm (3-questions), satisfaction (3-questions) and sexual pain (3-questions). This tool was used both before and after educational

training programs implementation.

The scoring system:

It contains 19 items into six subscales: sexual desire (1, 2), arousal (3, 4, 5, 6), lubrication (7, 8, 9, 10), orgasm (11, 12, 13), satisfaction (14, 15, 16), and pain (17, 18, 19). The score range for items 3 to 14 and 17 to 19 between 0–5; for items 1, 2, 15, and 16 between 1–5. The full-scale score range is from 2 to 36, and domain scores ranging from 0.8 to 6.0 for satisfaction, 1.2 to 6.0 for desire, and 0.0 to 6.0 for arousal, lubrication, orgasm, and pain. With the higher scores indicating better sexual function.

This tool was used both before and 12 weeks later after educational training programs implementation.

2.4.6 Tool IV: WHOQOL-BREF quality of life scale. (Skevington & Tucker , 1999, Harper 1999)

WHOQOL-BREF quality of life scale is the short version of the WHOQOL-100 and is recommended for use when time is restricted or the burden on the respondent needs to be minimized. A self-report questionnaire that divided into 4 domains; physical (7 questions), psychological (6 questions), social (3 questions), and environmental (8 questions) was used.

The scoring system:

For WHOQOL-BREF, questionnaire uses a Likert scale from five points starting from never (1) to always (5) to determine a raw item score. Subsequently, the mean score for each domain is calculated, resulting in a mean score per domain that is between 4 and 20. Finally, this mean domain score is then multiplied by 4 in order to transform the domain score into a scaled score, with a higher score indicating a higher QOL. This tool was used both before and 12 weeks later after educational training programs implementation.

2.5 Tools Validity

The study's assessment tool was evaluated by a panel of experts, including community health nursing, obstetric nursing, and a specialized statistician, and their feedback was incorporated into the tool.

2.5 Tools Reliability: In order to establish the reliability of the assessment tools Cronbach's alpha values was computed. FSFI was 0.79- 0.86, WHOQOL-BREF Cronbach's alpha values of physical domain, psychological domain, social domain, environmental domain were 0.72, 0.76, 0.62, 0.75, respectively.

2.7 Pilot Study

A pilot study was conducted on 10% of the study sample (7 female), who were subsequently excluded from the main sample. The purpose was to ensure the applicability, clarity, feasibility of the study tools, relevance, and to assess the time required to complete them.

2.8 Ethical approval

An official ethical approval was obtained from the scientific research ethics committee of the Faculty of Medicine, El-Fayoum University number (R: 602). The study involved female participants who were informed about its purpose and objectives, obtained oral consent, and had the option to withdraw at any point. Confidentiality was maintained throughout; ensuring female participant rights were protected.

2.9 Field Work

Female participants in an obstetric and gynecological outpatient clinic participated in a study using a self-constructed questionnaire. Data was collected for scientific research, and participants' time spent on the questionnaire, self-reporting practices, sexual function evaluation, and quality of life evaluation was estimated.

Phases of field-work

In order to achieve the purpose of the study, four-phases were employed, comprising of: (1) assessment, (2) planning, (3) implementation, and (4) evaluation. Data collection was conducted in the selected settings, started in 1July 2024 and finished in 31 December and 2 weeks post educational training program, both knowledge and practices questionnaires were completed, and a follow-up assessment of female sexual function and quality of life after regular kegal exercise use was conducted at twelve weeks.

A. Assessment phase

Researchers interviewed females in obstetric and gynecological outpatient clinics to gather baseline data. They designed an educational training program based on preprogram evaluation and literature review.

B. Planning phase

The educational training program aims to improve female knowledge, practice, sexual function, and quality of life. It is divided into four sections: knowledge, practice, and dietary management. The knowledge section covers pelvic floor muscle anatomy, exercise, and kegel exercise. The practice section includes a kegel exercise checklist, and the FSFI scale evaluates female sexual function. The WHOQOL-BREF scale evaluates quality of life among females.

C. Implementing phase

The study involved all female participants who were admitted to an outpatient clinic three days a week. The control group received traditional treatment, while the study group received an educational program on kegel exercise. The program was implemented over four sessions per day, with theoretical and practical sessions. Teaching methods included brainstorming, discussion, demonstration, and re-demonstration. Teaching aids included data shows, photographs, videos, and role-plays. Arabic booklets were provided with information about pelvic floor muscle anatomy, function, benefits, best position, indications, contraindications, and dietary management. Weekly phone calls and monthly meetings were used to monitor and update data.

It's carried out through four sessions as follows:

1. The initial session introduces the program and provides fundamental understanding of pelvic floor muscle anatomy and function.
2. The second session provided information on pelvic floor muscle training procedures, best positions, indications, contraindications, and special instruction. Participants learned to identify and feel contractions while sitting and standing, gradually increasing the length of contractions and relaxations. They were advised to do 30-40 kegel exercises daily.

3. In the third session, female were empowered to repeating the exercise to ensure they knew how to do it properly.
4. The fourth session focused on healthy lifestyle education and dietary management, including weight reduction, avoiding prolonged standing, lifting heavy objects, consuming vitamin-rich foods, and limiting fluid intake.

D. Evaluating phase

The educational training programs were implemented, followed up weekly via telephone, and after twelve weeks of regular exercise, women were retained for follow-up in outpatient clinics, with vaginal examination tests to assess their progress.

2.10 Statistical Analysis

The study used SPSS software version 22 for data analysis, comparing qualitative and quantitative variables using frequency distributions and chi square tests. Pearson correlation was calculated, and levels in the same group were compared before and after the program using paired t tests, with a significance level of $p < 0.05$.

3. Results

Table 1 illustrated that the mean age of the studied female in the control and study group was 41.02 ± 6.9 years and 41.47 ± 7.3 years old, respectively. The majority (86.1%) & (91.7%) of the female were lives in rural areas, illiterate education (44.5) & (41.7%), while just (8.3%) & (5.6%) have university education in control and study groups respectively. (80.6%) & (66.7%) of them were house wife, with nearly three-fourth of them live alone (77.8%) & (75.0%), nearly just one-third of female were normal weight (27.8%) & (30.6%), slightly less than two-thirds of female having slightly enough monthly income (61.1%) & (55.6%) in the control and the study group, respectively. There was no statistically significant difference between control and study groups regarding all previous items.

Table (2) showed that slightly less than two-thirds of the studied female were pregnant and delivered more than three times (61.1%) &

(63.9%) respectively, (55.6%) & (61.1%) of them delivered normal, (58.3%) & (61.1%) of them exposed to perennal laceration, Also, about three-fourth of the studied female use intrauterine device (75.0%) & (69.4%), the minority of them (13.9%) & (22.2%) suffering from previous prolonged labor and in menopause period (27.8%) & (30.6%) in control and study groups respectively, There was no statistically significant difference between control and study groups regarding all previous items.

Table (3) presents that all participant of studied female complained from urinary incontinence in control and study group. While, the minority of them in both control and study group respectively complained from hypertension (27.8%) & (13.9%), osteoporosis (16.7%) & (25.0%) and arthritis were (41.7%) & (30.6%).

Table (4) presented that the total score of female knowledge , it was appear that mean score and standard deviation of female knowledge score increased from (5.27±1.57) in control group to (9.19±1.65) in study group post educational training programs and there was a highly statistical significance between control and study groups post educational training programs ($P < 0.001$).

Table (5) illustrated that the total score of female pelvic floor muscle training exercise, it was appear that mean score and standard deviation of female practice score increased from (2.72±1.16) in control group to (3.55±1.25) in study group post educational training programs and there was a highly statistical significance between control and study group post educational training programs ($p = .005$).

Table (6) demonstrated that There was highly statistically significant differences between control and study groups (**P value = .000**) regarding all sexual process in desire, arousal, lubrication, orgasm, satisfaction and pain Post educational training programs.

Figure (1) showed that There was a highly statistically significant differences between control and study groups (**P value = .000**)

regarding total sexual function Post educational training programs.

Figure (2) illustrated that mean, standard deviation of studied female quality of life regarding to Physical domain increased from (30.75±6.053) to (31.74±7.028) in control group, While higher increased in study group post educational training programs from (27.77±7.54) to (62.59 ±5.88) . Regarding psychological domain fixed mean (27.66±7.66) in control group, while higher increased in study group post educational training programs from (30.90±6.25) to (61.45 ±5.39). Also, Social domain fixed mean in control group (28.93±9.446), while increased from (32.17±9.58) to (59.95 ±9.72) in study group post educational training programs. Finally, Environment domain slightly increased from (38.45±7.31) to (43.83 ±7.33) in study group. There was highly statistically significant difference between control and study groups (**P value = <0.001**) post educational training programs.

As presented in **Table (7)**, the Mean, Standard Deviation and P-value of female sexual function in relation to pregnancy and parity number for female post educational training programs for 2-3 times of pregnancy and more than 3 times in control is (17.73±1.23), (17.70 ±.99), and study group is (14.22±3.18), (11.70±1.55) respectively. Regarding to mode of delivery, mean and standard deviation of normal delivery increased more than cesarean section delivery in control and study groups. There was a highly statistically significant difference in pregnancy and parity number ($P \leq 0.001$) and statistically significant difference in mode of delivery in the study groups post educational training program.

Table (8) and **Figure (3)** showed that positive correlation between female sexual function and their all aspect of quality of life in study group post educational training program, Also, positive correlation between female sexual function and their practice and knowledge score level respectively ($r = 0.490$, $p = 0.002$) & ($r = 0.341$, $p = 0.042$) post educational training program.

Table 1: Socio-Demographic Characteristics of the Female in Control and Study groups N= 72

| Items | Groups | | | | X ² | P value |
|-------------------|---------------|-------|-------------|-------|----------------|---------|
| | Control group | | Study group | | | |
| | N | % | N | % | | |
| Age | 41.02±6.9 | | 41.47±7.3 | | .071 | .791 |
| Residence | | | | | 0.560 | 0.452 |
| Rural | 31 | 86.1% | 33 | 91.7% | | |
| Urban | 5 | 13.9% | 3 | 8.3% | | |
| Working | | | | | 1.78 | 0.18 |
| House Wife | 29 | 80.6% | 24 | 66.7% | | |
| Working | 7 | 19.4% | 12 | 33.3% | | |
| Education | | | | | 3.39 | 0.494 |
| Illiterate | 16 | 44.5% | 15 | 41.7% | | |
| Primary | 11 | 30.5% | 12 | 33.3% | | |
| Secondary | 6 | 16.7% | 7 | 19.4% | | |
| University | 3 | 8.3% | 2 | 5.6% | | |
| Family Type | | | | | 0.077 | 0.781 |
| Family live alone | 28 | 77.8% | 27 | 75.0% | | |
| Intended family | 8 | 22.2% | 9 | 25.0% | | |
| Family size | | | | | 0.52 | 0.47 |
| 3-5 | 16 | 44.4% | 13 | 36.1% | | |
| >5 | 20 | 55.6% | 23 | 63.9% | | |
| Crowding index | | | | | 1.14 | 0.285 |
| 2-3 | 30 | 91.7% | 33 | 91.7% | | |
| >3 | 6 | 8.3% | 3 | 8.3% | | |
| Monthly income | | | | | 0.76 | 0.68 |
| Not enough | 6 | 16.7% | 9 | 25.0% | | |
| Slightly enough | 22 | 61.1% | 20 | 55.6% | | |
| Enough | 8 | 22.2% | 7 | 19.4% | | |
| Weight | | | | | 0.26 | 0.78 |
| Normal | 10 | 27.8% | 11 | 30.6% | | |
| Obese | 14 | 38.9% | 15 | 41.7% | | |
| Over weight | 12 | 33.3% | 10 | 27.8% | | |

Table 2: Distribution of Female in Control and Study Groups Regarding to their Obstetric History N= 72

| Obstetric History | Groups | | | | Significance | |
|-----------------------------|-----------------|-------|-----------------|--------|--------------|---------|
| | Control group | | Study group | | X2 | P value |
| | No. | % | No. | % | | |
| Pregnancy | | | | | 0.0590 | 0.81 |
| 2-3 | 14 | 38.9% | 13 | 36.1% | | |
| >3 | 22 | 61.1% | 23 | 63.9% | | |
| Parity number | | | | | 0.0590 | 0.81 |
| 2-3 | 14 | 38.9% | 13 | 36.1% | | |
| >3 | 22 | 61.1% | 23 | 63.9% | | |
| Abortion | | | | | 0.215 | 10.63 |
| No | 33 | 91.7% | 34 | 94.4% | | |
| Yes | 3 | 8.3% | 2 | 5.6% | | |
| Neonate death | | | | | 0.0740 | >0.99 |
| No | 35 | 97.2% | 36 | 100.0% | | |
| Yes | 1 | 2.8% | 0 | 0.0% | | |
| Mode of delivery | | | | | 0.229 | 0.633 |
| Normal | 20 | 55.6% | 22 | 61.1% | | |
| C s | 16 | 38.9% | 14 | 38.9% | | |
| Perineum state | | | | | 0.056 | 0.810 |
| Perennial laceration | 21 | 58.3% | 22 | 61.1% | | |
| Intact perineum | 15 | 41.7% | 14 | 38.9% | | |
| Postpartum hemorrhage | | | | | 0.348 | 0.555 |
| No | 34 | 69.4% | 35 | 97.2% | | |
| Yes | 2 | 5.6% | 1 | 2.8% | | |
| Postpartum infection | | | | | 0.277 | 0.599 |
| No | 25 | 75.0% | 27 | 75.0% | | |
| Yes | 11 | 30.6% | 9 | 25.0% | | |
| Contraceptive Methods | | | | | 0.36 | 0.95 |
| Natural | 1 | 2.8% | 1 | 2.8% | | |
| Condom | 2 | 5.6% | 2 | 5.6% | | |
| Combined oral pills | 6 | 16.7% | 8 | 22.2% | | |
| Intrauterine device | 27 | 75.0% | 25 | 69.4% | | |
| Prolonged Labor | | | | | 0.845 | 0.358 |
| No | 31 | 86.1% | 28 | 77.8% | | |
| yes | 5 | 13.9% | 8 | 22.2% | | |
| Menopause Period | | | | | 0.067 | 0.79 |
| No | 26 | 72.2% | 25 | 69.4% | | |
| yes | 10 | 27.8% | 11 | 30.6% | | |
| Genital infection Past Year | | | | | 0.16 | 0.69 |
| No | 3 | 8.3% | 4 | 11.1% | | |
| Yes | 33 | 91.7% | 32 | 88.9% | | |
| Time of Last Labor | 8.61±6.1 | | 7.77±6.6 | | F=0.3 | 0.58 |
| Menarche age | 13.5000±1.25357 | | 13.0000±1.14642 | | F=3.119 | 0.089 |
| Marriage duration | 20.33±21.19 | | 7.84±8.04 | | .211 | .647 |

Table 3: Distribution of Female in Control and Study Groups According to their Medical History N=72

| Medical History | Groups | | | |
|-----------------------------|---------------|-------|-------------|-------|
| | Control group | | Study group | |
| | No. | % | No. | % |
| Urinary incontinence | | | | |
| No | | | | |
| No | 0 | 0% | 0 | 0% |
| Yes | 36 | 100% | 36 | 100% |
| Hypertension | | | | |
| No | 26 | 72.2% | 31 | 86.1% |
| Yes | 10 | 27.8% | 5 | 13.9% |
| Arthritis | | | | |
| No | 21 | 58.3% | 25 | 69.4% |
| Yes | 15 | 41.7% | 11 | 30.6% |
| Osteoporosis | | | | |
| No | 30 | 83.3% | 27 | 75.0% |
| Yes | 6 | 16.7% | 9 | 25.0% |

Table 4: Comparison of total female Knowledge Score between Control and Study Groups Pre and Post educational training program N=72

| Items | Total Female Knowledge score | | | |
|-------------|------------------------------|-------------|--------|----------|
| | Control group | Study group | T test | P value |
| | Mean± SD | Mean± SD | | |
| Pre | 1.80±1.28 | 2.25±1.48 | 1.36 | 0.178 |
| Post | 5.27±1.57 | 9.19±1.65 | 10.28 | <0.001** |

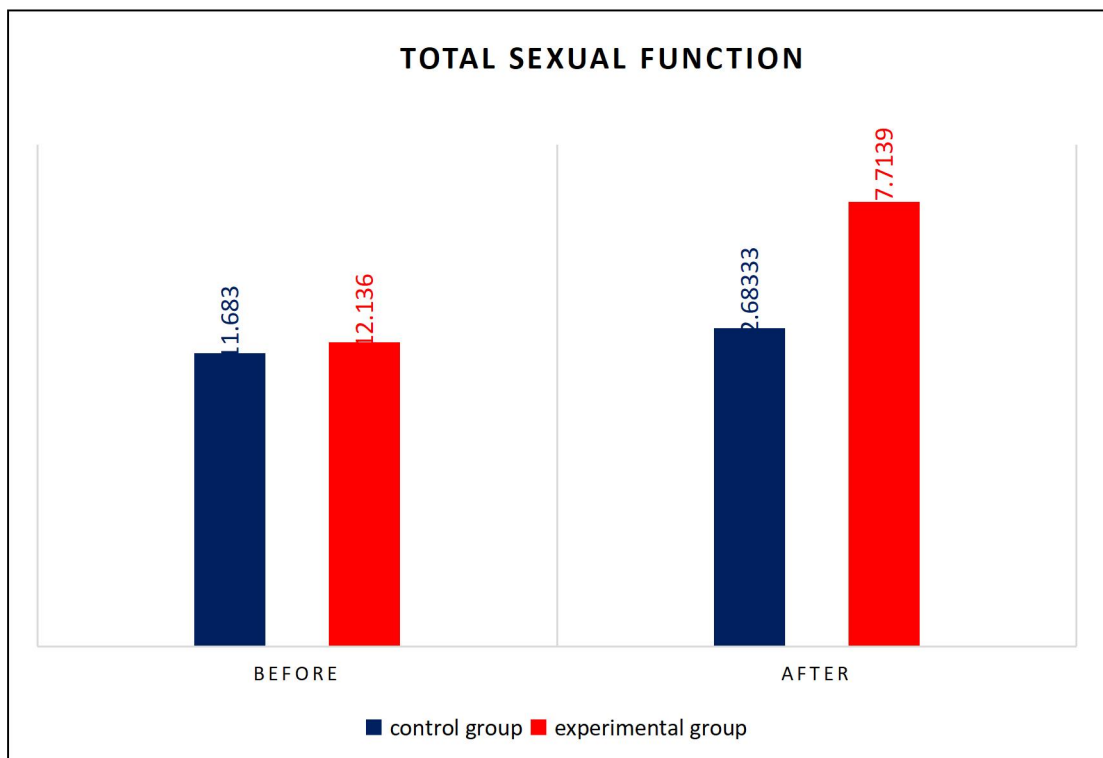
* Statistically significant at $p \leq 0.05$ ** highly statistical significant at $p \leq 0.01$ **Table 5: Comparison of Total Female Pelvic Floor muscle Training Score between Control and Study Groups Pre and Post educational training program N=72**

| Items | Total Female Practice Score | | | |
|-------------|-----------------------------|-------------|--------|---------|
| | Control group | Study group | T test | P value |
| | Mean± SD | Mean± SD | | |
| Pre | 0.41±.50 | 0.61±.68 | 1.37 | 0.174 |
| Post | 2.72±1.16 | 3.55±1.25 | 2.93 | .005* |

* Statistically significant at $p \leq 0.05$ ** highly statistical significant at $p \leq 0.01$

Table 6: Distribution of Female According to Sexual Function Index Pre and Post educational training program in Control and Study Groups N=72

| Female Sexual Function | Pre | | | Post | | |
|------------------------|------------------|---------------|--------|------------------|---------------|---------|
| | Control Group | Study group | T test | Control Group | Study group | T test |
| | Mean± SD | | | Mean± SD | | |
| Desire | 2.0167±.70488 | 2.3000±.69529 | 1.7 | 2.0000±.91838 | 3.4333±.56669 | -7.969 |
| | P value = 0.09* | | | P value = .000** | | |
| Arousal | 1.5000±.22678 | 1.6250±.24187 | 1.28 | 1.6500±.55317 | 3.0917±.44681 | -12.164 |
| | P value = 0.203 | | | P value = .000** | | |
| lubrication | 2.9000±.86948 | 2.8333±.65115 | .368 | 2.9000±.86948 | 2.8333±.65115 | -12.16 |
| | P value = 0.714 | | | P value = .000** | | |
| Orgasm | 1.5222±.50433 | 1.7333±.50596 | -1.773 | 1.8778±.80467 | 3.4444±.45131 | -10.189 |
| | P value = 0.081* | | | P value = .000** | | |
| Satisfaction | 1.7000±.40988 | 1.5889±.41112 | 1.148 | 1.7000±.40988 | 1.5889±.41112 | 1.148 |
| | P value = 0.255 | | | P value = 0.255 | | |
| Pain | 2.2111±.65193 | 1.9222±.41481 | 2.243 | 2.5556±.76660 | 3.3222±.46667 | -5.125 |
| | P value = 0.028* | | | P value = .000** | | |

* Statistically significant at $p \leq 0.05$ ** highly statistical significant at $p \leq 0.01$ **Figure 1: Distribution of Female According to Total Score Level of Sexual Function Pre and Post educational training program in Control and Study Groups N=72**

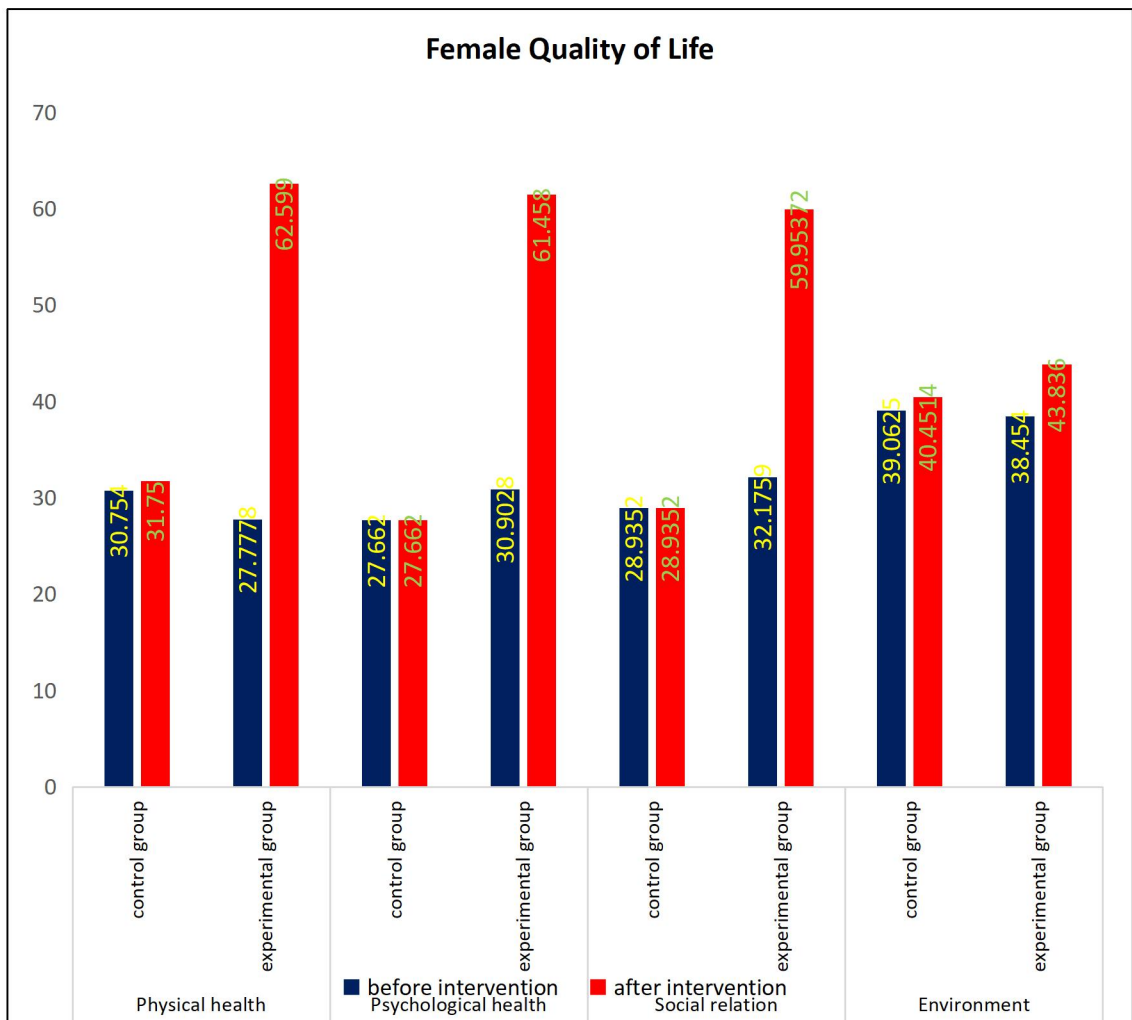


Figure 2: Comparison of Female Quality of Life Scores Level between Control and Study Group Pre and Post educational training N=72

Table 7: Relation Between Female Sexual Function Score Level & Pregnancy, Parity Number, Mode of delivery Post educational training program in Control and Study Groups N=72

| Obstetric History | Sexual Function Score | | | |
|-------------------|-----------------------|------------------|------------------|------------------|
| | Control group | | Study group | |
| | Mean \pm SD | | Mean \pm SD | |
| | 2-3 times | >3 times | 2-3 times | >3 times |
| Pregnancy Number | 17.73 \pm 1.23 | 17.70 \pm .99 | 14.22 \pm 3.18 | 11.70 \pm 1.55 |
| | P value = 0.919 | | P value = 0.003* | |
| Parity Number | 17.73 \pm 1.23 | 17.70 \pm .99 | 14.22 \pm 3.18 | 11.70 \pm 1.55 |
| | P value = 0.919 | | P value = 0.003* | |
| Mode of Delivery | Normal | C.S | Normal | C.S |
| | 13.18 \pm 2.22 | 12.06 \pm 2.96 | 13.63 \pm 1.58 | 12.59 \pm 2.32 |
| | P value = 0.205 | | P value = 0.020* | |

* Statistically significant at $p \leq 0.05$

** highly statistical significant at $p \leq 0.01$

Table 8: Correlation between Female Sexual Function Scores Level and Quality of Life, Pelvic Floor muscle Training, Knowledge in Control and Study group post educational training program N= 72

| Items | Group | Sexual Function Score | |
|------------------------------|---------------|-----------------------|--------|
| | | r | P |
| Quality of Life | Control group | Physical | .276 |
| | | Psychological | -.228 |
| | | Social | .227 |
| | | Environment | -.172 |
| | Study group | Physical | .503 |
| | | Psychological | .624 |
| | | Social | .379 |
| | | Environment | .480 |
| Pelvic Floor muscle Training | Control group | -.074 | .666 |
| | Study group | .490 | .002** |
| Knowledge | Control group | -.055 | .751 |
| | Study group | .341 | .042* |

* Statistically significant at $p \leq 0.05$

** highly statistical significant at $p \leq 0.01$

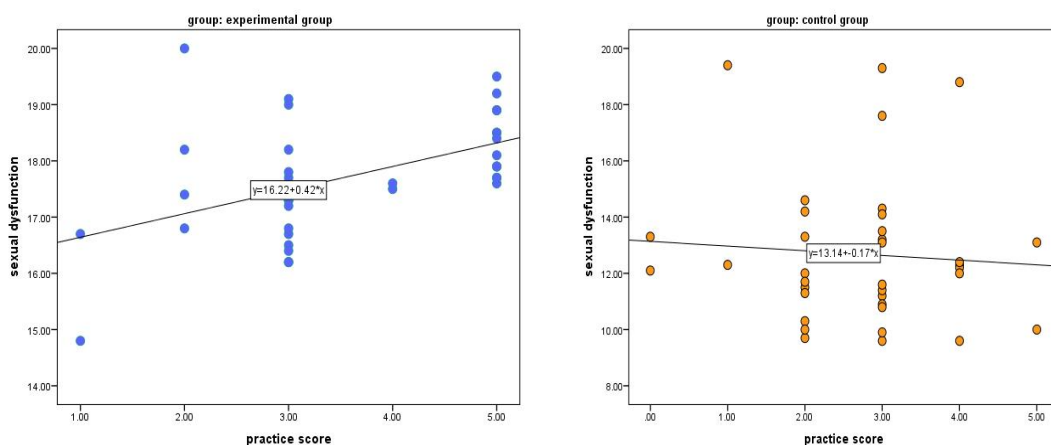


Figure 3: Correlation between Female Sexual Function Scores Level and Quality of Life, Pelvic Floor muscle Training, Knowledge in Control and Study group post educational training program

4. Discussion

Sexuality is a fundamental component of quality of life for both genders which reflects their level of physical, psychological and social wellbeing (Hassan & Farag, 2019; Emem & Hassan, 2017; Nasr & Hassan, 2016). On the other hand, it represents a key aspect in women's pelvic health (Campos et al., 2022; Yong, 2022). FSD is a serious public health issue that affects 41% of premenopausal women worldwide, according to McCool et al. 2018 Individual sexual illnesses have prevalence rates ranging from 20.6%

(difficulties with lubrication) to 28.2% (hypoactive sexual drive disorder). Sexual dysfunction can manifest in various ways, such as diminished arousal, pain during sexual activity, lack of desire for sex, or inability to achieve an orgasm (Pain, 2020). Sexual dysfunction can also develop later in life following a period of normal sexual functioning (Angelou et al., 2020).

The present study found that the mean age of participants in the control and study groups were 41.02 ± 6.9 years and 41.47 ± 7.3 years, respectively. This is consistent with previous studies in which the mean age of participants

varied, but the majority of participants were in similar age ranges. In the study by Abou Khodai (2019), the mean age was reported as 32.95 ± 7.1 years, with the largest group of participants being between the ages of 30 and 39 years (42.4%). In line with these findings, a study by Hassanin et al. (2010), which included 648 patients from the outpatient clinic at Sohag University Hospital, reported that most participants were in the 30-39 years and 40-50 years age groups (36.8% and 25.0%, respectively). Furthermore, Ibrahim et al. (2013) found that the mean age of participants was 39.5 years, with the majority falling within the 20-59 years age range. Ismail et al. (2021) also reported a similar age distribution, with a mean age of 32.94 ± 9.76 years. In this study, the highest percentage of participants were in the 30-39 years age group (32.0%), followed closely by those in the 20-29 years age group (30.0%). These findings suggest that women in the 20-40 years age range are often the most represented in studies on female sexual dysfunction, possibly reflecting the reproductive age group where sexual health concerns are more commonly discussed. The variation in mean age between studies may be attributed to differences in the populations studied, regional factors, or the specific focus of each research project.

In the present study, a majority of females in both the control and study groups were from rural areas, which aligns with Zhu et al. (2023), who reported that 59.6% of women with sexual dysfunction lived in rural areas. In contrast, Ismail et al. (2021) found that most participants resided in urban areas (57.4%). Additionally, El-Tahlawi et al. (2018) observed that females in urban areas had significantly higher FSFI scores compared to those in rural areas. Various reasons for this significant finding could be lack of sexual knowledge among these women, especially those coming from a rural background and who are uneducated (Kunkeri 2017).

In the present study, higher percentage of the studied female in both the control and study groups had no formal education, while only a small percentage of participants in each group had university-level education (8.3% and 5.6%, respectively). These findings are in line with

other studies that have examined the education levels of women in similar populations. A study by Ibrahim et al. (2013) also found that most participants (39.5%) had completed only primary education. In contrast, a study by Ismail et al. (2021) reported a different distribution of education levels, with 40.8% of participants having attended college, 26.2% having completed secondary education, and 14.0% being illiterate. In contrast, Mahy et al. (2024) found that the most prevalent education level among their sample was postgraduate education, comprising 37.3% of the participants. The study by Abou Khodai (2019), most participants had a moderate level of education (46.8%), followed by 33.6% with higher education, while the smallest group had low-level education (19.6%). Hassanin et al. (2010) found that most participants had education levels below university (55.6%). Elnashar et al. (2007) of participants were 48% had completed secondary education. These varying results suggest that educational attainment among women may differ based on region, socio-economic factors, and other contextual variables, with some studies indicating lower education levels and others reporting a higher prevalence of higher education.

In the present study, slightly less than two-thirds of the studied females reported having a monthly income that they considered sufficient in the control and study groups. These findings are consistent with the study by Abou Khodai (2019), where the majority of participants (59%) reported a moderate socioeconomic level. A smaller proportion (32.6%) indicated a high socioeconomic status, while a few participants (8.4%) reported a low socioeconomic level. These results suggest that a significant portion of the population in both groups has a moderate or just enough income to meet their needs, which may influence various health and well-being factors.

In the present study, a significant proportion of the studied female was housewives, in control and study groups reporting this as their occupation. This is consistent with the findings of Elnashar et al. (2007), where 70.4% of respondents were housewives, and only 1.3% owned property. Among their spouses, 55.6%

worked privately, 21.2% held government jobs, and 4.8% owned property. Similarly, Ismail et al. (2021) found that 59.2% of participants were not working, and Mahy et al. (2024) reported that 60.3% of participants were housewives. In contrast, Abou Khodai (2019) found that 51.2% of women were employed. Lou et al. (2017) noted that 44% of their participants were engaged in intellectual work, 15.3% in physical work, 32.5% in a combination of both, and 8.1% were homemakers. Additionally, El-Tahlawi et al. (2018) found that working women had significantly higher sexual function scores. Employment of both spouses, contributing to increased income and educational levels, was linked to better sexual function and interpersonal relationships. These results highlight the high prevalence of housewives in the studied populations across various studies. However, the differing percentages across studies may reflect cultural, social, and economic factors that influence women's participation in the workforce, as well as variations in study populations.

In terms of body weight, approximately one-third of the studied females in both control and study groups were classified as having a normal weight. This contrasts with the findings of Pang et al. (2024), where 71.44% of participants were categorized as having a normal weight.

The present study found that just under two-thirds of the studied females had been pregnant and had delivered more than three times, delivered vaginally in control and study groups. Additionally, about three-fourths of the studied females used intrauterine devices (IUDs) as a method of contraception in control and study groups, the average duration of marriage was 20.33 ± 21.19 years in the control group and 7.84 ± 8.04 years in the study group. No statistically significant differences were found between the control and study groups across these factors. These results are consistent with Ibrahim et al. (2013), who found that vaginal delivery was the most common mode of delivery (63.9%), with 16.3% of participants having cesarean sections. The most common contraceptive method was the IUD (40.5%), and 9.8% of participants did not use any

contraceptive method, which aligns with our findings. However, our results contrast with those of Abou Khodai (2019), who found that the majority of women (69.4%) had cesarean sections, with only 24% delivering vaginally. A larger proportion of women in that study used IUDs (60%). Mahy et al. (2024) also reported that 20.8% of their participants had three or more vaginal deliveries, while 21.3% had three or more cesarean sections. The most common contraceptive method in their study was the IUD (57.8%).

Regarding the mean age at marriage and the duration of marriage, our study's findings are similar to those of Mishra et al. (2016) found that the mean duration of marriage was 11.23 ± 8.39 years, with FSD being more prevalent in females with a marriage duration of more than 16 years. Abou Khodai (2019) also observed a statistically significant difference in the mode of delivery between women with and without FSD, suggesting that the mode of delivery may have an impact on female sexual dysfunction. In contrast Abou Khodai (2019), who reported a mean age of marriage of 23.98 ± 3.5 years and a mean duration of marriage of 8.97 ± 5.8 years. In contrast, The present study shows that all studied female in both the control and study groups reported experiencing urinary incontinence (UI). In contrast, fewer studied female in both groups reported other conditions such as hypertension, osteoporosis and arthritis in control and study group. These findings align with studies by Ibrahim et al. (2013) and Hassanin et al. (2010), which found that female sexual dysfunction (FSD) is more common among women who suffer from urinary incontinence. Additionally, Duralde and Rowen (2017) reported that urinary incontinence is linked to increased rates and severity of FSD. Boeri et al. (2017) also found that women with recurrent urinary tract infections (rUTIs) had lower FSFI scores ($p < 0.001$), further supporting the association between urinary incontinence and sexual dysfunction. These results suggest that urinary incontinence may be a significant factor contributing to FSD in the studied females and emphasize the importance of addressing urinary incontinence and other related health issues when assessing and managing sexual health in women.

the present study illustrates that a significant increase in the total score of female knowledge, with the control group scoring an average of (5.27 ± 1.57) and the study group achieving a mean score of (9.19 ± 1.65) after educational training program. The difference between the control and study groups post-training was highly statistically significant, with a p-value of <0.001 . This result is consistent with the findings of El-Morsey et al. (2024), who reported an improvement in women's knowledge scores after an educational intervention, with mean scores increasing to 12.2 ± 1.2 at post-training and 11.3 ± 1.8 during the follow-up phase. Similarly, Ismail Ibrahim, Rady, and Habiba (2019) observed that women who participated in a pelvic floor muscle training program showed significant improvements in their knowledge compared to baseline and follow-up assessments. Additionally, previous research has highlighted the effectiveness of educational programs in enhancing knowledge about pelvic floor health. Mandimika et al. (2014) and Miller et al. (1998) found that educational interventions were successful in increasing awareness and understanding of pelvic floor health among participants. These findings suggest that structured educational training program can significantly improve women's knowledge about pelvic health, as demonstrated in this study and supported by previous literature.

The present results, as shown in Table 5, indicate that a significant improvement in the pelvic floor muscle training scores. Specifically, the mean score and standard deviation for the control group were (2.72 ± 1.16) , while the study group showed a higher mean score of (3.55 ± 1.25) after undergoing educational training program. A highly statistically significant difference was found between the control and study groups post training program, with a p-value of 0.005. These findings can be explained through several mechanisms by which pelvic floor muscle exercises improve sexual function. Regular practice of pelvic floor exercises strengthens the levator ani muscle through muscular hypertrophy. A stronger levator ani provides better support and reduces the strain on ligaments, contributing to improved pelvic function. Additionally, these exercises increase blood circulation to the

pelvic region, which aids in the healing process and enhances the revascularization of damaged cells and tissues (Golmakani et al., 2015; Elbegway et al., 2010). Consistent with our findings, a study by Dean et al. (2008) on postpartum women showed that those who engaged in pelvic floor exercises reported significantly higher sexual function scores. Similarly, Wu et al. (2018) conducted a meta-analysis that found pelvic floor exercises led to a reduction in sexual dysfunction. Further supporting the benefits, Faryal et al. (2022) observed a significant reduction in pelvic floor dysfunction (PFD) symptoms in groups that received pelvic floor muscle exercise education, with a 99% confidence level. Moreover, Bø et al. (1990) demonstrated a 100% increase in muscle strength after one month of pelvic floor exercise intervention. These studies align with our results and highlight the positive impact of pelvic floor muscle training exercises on sexual and pelvic health.

The present study shows that a highly statistically significant difference between the control and study groups ($P = 0.000$) in terms of sexual processes such as desire, arousal, lubrication, orgasm, satisfaction, and pain following the educational training program. This suggests that the program had a substantial impact on improving sexual function in these areas. Our findings are consistent with those of Hassanin et al. (2010), where a significant proportion of women reported issues related to sexual function. In their study, 60.7% of women experienced difficulties with orgasm, 56.7% reported low sexual arousal, 52.8% had lubrication issues, 53.6% were sexually dissatisfied, 66.4% had low sexual desire, and 64.1% experienced sexual pain. These figures align with the challenges reported by the studied female in our study. Similarly, Mahy et al. (2024) reported FSFI scores in various domains: Desire (3.51 ± 1.25), Arousal (4.29 ± 1.21), Lubrication (4.28 ± 0.93), Orgasm (3.81 ± 1.27), Satisfaction (4.14 ± 1.28), and Pain (3.45 ± 0.69). These scores further highlight the widespread nature of sexual dysfunction among women, with lower scores observed in desire and orgasm, as was the case in our study. In line with Abou Khodai (2019), we found statistically significant differences between

women with female sexual dysfunction (FSD) and those without, with women suffering from FSD reporting lower scores across all FSFI domains. Women with FSD had significantly lower scores in desire, arousal, lubrication, orgasm, satisfaction, and pain compared to those without FSD. Our results are also consistent with Gaafar et al. (2019), who reported significantly lower FSFI scores in women with FSD, particularly in the lubrication and pain domains. This reinforces the finding that sexual dysfunction often affects these areas most severely. Additionally, Abou Khodai (2019) found that the lowest mean scores were for orgasm (3.5 ± 1.2) and desire (3.59 ± 1.26), while the highest scores were for satisfaction (4.5 ± 1.14) and lubrication (4.24 ± 0.99). This pattern is similar to the findings in our study, further confirming the impact of sexual dysfunction on various aspects of sexual health. Overall, the present results emphasize the significance of the educational training program in addressing sexual dysfunction, particularly in improving desire, arousal, lubrication, orgasm, satisfaction, and pain. In contrast, Mishra et al. (2016) found no statistically significant differences across the FSFI domains ($P > 0.01$), suggesting that factors influencing sexual dysfunction may vary across different populations or contexts.

The present study, as shown in Figure 1, demonstrated a highly statistically significant difference between the control and study groups ($P = 0.000$) regarding total sexual dysfunction after the educational training program. This indicates that the educational program had a considerable impact on reducing sexual dysfunction in the study group. These findings are consistent with Mahy et al. (2024), who reported a mean total FSFI score of 23.47 ± 4.94 , which aligns with the improvement seen in the present study. Additionally, Ahmed et al. (2024) found a significant improvement in the mean sexual index score among women post-intervention compared to pre-intervention, further supporting the effectiveness of educational training program in improving sexual function. Similarly, Boberet et al. (2018) also reported significant improvements in the FSFI scores, with total scores and subscale scores for arousal, orgasm, lubrication, and satisfaction improving over time, particularly at

2 and 6 months post-intervention. This result is in line with Kamal et al. (2021), who found that approximately half of the women showed improved sexual functioning after the intervention, compared to none of the women at the baseline, with a statistically significant difference. These results suggest that continuous education and support play a crucial role in improving sexual function. By addressing sexual concerns openly and reducing embarrassment about discussing sexual problems, women feel more encouraged and empowered to improve their sexual health. The positive outcomes observed in this study may be attributed to the educational training program's effectiveness in providing valuable information and fostering an open environment for discussing sexual health issues.

the present study illustrates that the mean quality of life scores for studied females significantly improved across various domains post educational training program. In study group post educational training programs, higher increased in all domain of quality of life, physical domain increased from (27.77 ± 7.54) to (62.59 ± 5.88). Regarding psychological domain increased from (30.90 ± 6.25) to (61.45 ± 5.39). Also, Social relation increased from (32.17 ± 9.58) to (59.95 ± 9.72). Finally, Environment slightly increased from (38.45 ± 7.31) to (43.83 ± 7.33). The differences between the control and study groups were highly statistically significant ($P < 0.001$), indicating a strong effect of the educational program on improving quality of life. These findings are consistent with those of Mahy et al. (2024), who reported a mean full quality of life (QOL) score of 51.78 ± 12.40 , supporting the positive impact of interventions on improving QOL. Similarly, El-Morsey et al. (2024) found significant improvements in QOL scores post-intervention and follow-up phases, with highly significant differences compared to pre-program phase scores ($P = 0.000$). This supports the notion that targeted interventions can have a lasting effect on quality of life. The present study's results align with the work of Pourmomeny, et al., (2018), who found that pelvic floor muscle training (PFMT) significantly improved QOL. This is further corroborated by Khatun et al. (2021), who demonstrated that PFMT improved QOL for

women with stress urinary incontinence. Additionally, Ismail Ibrahim, Rady, and Habiba (2019) observed significant improvements in QOL among women who used pelvic floor muscle training, indicating the effectiveness of such programs over time. Molina et al. also reported a significant association between pelvic floor disorders and quality of life, highlighting that all dimensions of QOL, especially the emotional component, were negatively affected by these disorders ($P < 0.001$). This suggests that addressing pelvic health issues, as done in the present study, not only improves physical health but also positively impacts psychological and social well-being, which is reflected in the overall improvement in QOL observed post educational training program.

the present study presents that the mean, standard deviation, and p-value regarding female sexual function in relation to pregnancy, parity, and mode of delivery post educational training program. The results revealed a highly statistically significant difference related to pregnancy and parity number ($p \leq 0.001$), and a statistically significant difference in mode of delivery within the study group post-training. These findings align with those of Mahy et al. (2024), who reported a highly significant association between sexual dysfunction, marriage duration of over 10 years ($p < 0.001$), nulliparity, previous episiotomy, circumcision, and lack of contraception ($p < 0.001$). Additionally, identified a significant relationship between sexual dysfunction and both vaginal deliveries and Cesarean sections, along with conditions like vaginitis and cervicitis ($p < 0.001$). Similarly, Al-Sherbeny (2012) found that women with unrepaired perineal tears or Cesarean sections reported higher FSFI scores compared to those with repaired perineal tears or episiotomy three months postpartum. Barbara et al. (2016) also reported poorer sexual function, particularly in arousal, lubrication, and orgasm, among women who had operative vaginal deliveries compared to those who had Cesarean sections. However, the present study contrasts with the findings of Elnashar et al. (2007), who did not find a statistically significant relationship between mode of delivery or contraception use. El Sayed et al. (2017) observed no significant

differences ($p > 0.05$) between vaginal delivery (VD) and Cesarean section (CS) groups in all FSFI domains, including desire, arousal, lubrication, orgasm, satisfaction, and pain. They also reported that 65% of the VD group and 57.7% of the CS group experienced poor sexual function after delivery, while only 7.1% and 5.8% of the groups, respectively, and had good sexual function levels post-delivery. Other studies have similarly found no significant differences between modes of delivery and sexual dysfunction (Baghdari et al. (2012), Hosseini et al. (2012), De Souza et al. (2015), Alesheikh et al. (2016) and Malchi et al. (2016) additionally, Kahramanoglu et al. (2017) concluded that Cesarean section is not superior to vaginal delivery in preserving normal sexual function, even when considering short-term postpartum effects.

The present study demonstrates that a positive correlation between female sexual function and all aspects of quality of life (QoL) in the study group post an educational training program. This is significant because it highlights how educational interventions can potentially enhance not only sexual health but also overall quality of life in women. The study further reveals a positive correlation between sexual function and both pelvic floor muscle (PFM) practice and knowledge score levels ($r = 0.490$, $p = 0.002$; $r = 0.341$, $p = 0.042$) respectively. also, This suggests that educational training programs addressing pelvic health can be powerful tools in reducing symptoms of sexual dysfunction and improving overall well-being. Furthermore, the link between low pelvic floor muscle knowledge and high PFD incidence emphasizes the importance of increasing public awareness and knowledge regarding pelvic floor health. This aligns with earlier studies such as those by Soltani et al. (2017), which found a positive and significant relationship between sexual satisfaction and sexual knowledge ($r = 0.442$, $p = 0.000$). The results are also consistent with those of Mahy et al. (2024), who reported a significant difference in QoL scores between women with sexual dysfunction (50.29 ± 12.17) and those with good sexual function (55.95 ± 12.16). This further supports the notion that sexual dysfunction negatively affects the overall quality of life and that interventions targeting

sexual health, as educational programs or pelvic floor muscle training exercises, could potentially improve these outcomes. Moreover, Jorge et al. (2024) reviewed 21 randomized controlled trials and found that pelvic floor muscle training (PFMT) significantly improved sexual function, including arousal, orgasm, satisfaction, and pain relief. Specifically, studies included in the meta-analysis revealed significant improvements in the female sexual function index (FSFI) overall score and various aspects of sexual health. These findings mirror the results of Faryal et al. (2022), who demonstrated that pelvic floor muscle exercise education led to a significant decrease in pelvic floor dysfunction (PFD) symptoms and a considerable improvement in quality of life. Additionally, Berzuk et al. (2015) observed that gains in knowledge and awareness following education were substantially correlated with improvements in both quality of life and a reduction in PFD symptoms. The study also supports the findings of Mostafa et al. (2021), who showed that Kegel exercise training improves women's quality of life and reduces urinary incontinence. Mokhtar et al. 2018 indicated that healthy participants doing Kegel exercises showed increased PFM strength and improved sexual function. Research in Iran also showed that Kegel exercises improved the orgasmic, the arousal, and the satisfaction domains of FSFI in postmenopausal women.[Nazarpour et al., 2017]. This highlights the broader impact of pelvic floor exercises on women's health, suggesting that not only sexual function but also urinary health can benefit from regular pelvic floor muscle training.

5. Conclusion

PFMT is an effective treatment for improving sexual dysfunction in female through increases pelvic floor muscle strength, which leads to significant improvement in female's sexual function and quality of life.

6. Recommendations

Based on the study findings, the following recommendations are proposed:

1. Mothers should be informed and trained to kegel exercises properly by educational courses.
2. Increase public awareness through mass media about sexual dysfunction and its relation with pelvic floor exercise among women.

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