

## **Pelvic Physical Therapy Distance Journal Club**

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Effect of pelvic floor muscle training on postpartum sexual function and quality of life: A systematic review and meta-analysis of clinical trials. Hadizadeh-Talasaz Z, Sadeghi R, Khadivzadeh T. Taiwan J Obstet Gynecol. 2019; 58(6):737-747. doi: 10.1016/j.tjog.2019.09.003.

**Introduction:** PFMs play an important role in sexual function. Rezaei et al reported majority of postpartum women had sexual dysfunction (76.3%), and Khajejei et al noted 2/3rds of participants (64.3%) reported sexual dysfunction during first year postpartum. Sexual dysfunction can present as UI during intercourse, bulging into the vagina, dryness, and dyspareunia. Strong PFMs, are important for arousal and achievement of orgasms. Weak muscles may not provide sufficient blood flow to clitoris needed for attaining orgasm. Therefore, sexual dysfunction may be helped by PFMT.

Authors identified lack of comprehensive systematic review that included meta-analysis evaluating impact of PFE on sexual function and quality of life of women in postpartum period.

**Aim/Primary Aims:** Review the Interventional studies, which determine the effect of pelvic floor exercise on female sexual function and quality of life in the postpartum period.

**Study Design/Format:** Systematic review

**Subjects:** Pregnant women or postpartum women who had delivered vaginally

### **Materials and Methods:**

**-Inclusion criteria:** English or Persian language interventional trials of quasi-experimental, RCTs and systematic reviews included for meta-analysis. Limited to studies that perform PFME in pregnancy and postpartum, with evaluation of Sexual function and QoL in postpartum period after vaginal delivery. Meta-analysis inclusion if validated outcome tools used including FSFI, SQoL, King and SF-36 questionnaires.

**-Exclusion criteria:** Studies that conducted PFE in general population, post-menopause, post-Cesarean deliveries, and males.

**-Data collection:** Systematic literature review via electronic sources to identify relevant articles up to 12/2018. Independently 2 researchers searched Persian & English language electronic databases using MeSH terms (Table 1) selected according to components of PICOT question. Initially selected by screening titles & abstracts, but if eligibility unclear, full text of articles reviewed. Also performed hand searches probing references of previous review articles and citations of selected articles in Google scholar. Followed PRISMA guideline for selections (Fig 1). If there was contradiction between the 2 researchers, there was a third person who assisted to reach agreement.

**-Extracted data:** 1<sup>st</sup> author name, year of publication, country of study, sample size, Training protocol, outcome measure tools, Results, Losses to follow-up. If

information not included in publication, authors were contacted by email (only 2 authors replied).

-Quality of selected articles evaluated by Oxford Center for Evidence Based Medicine checklist.

-Risk of bias evaluated by 2 independent authors using Cochrane tool for assessing risk of bias: rated as high, low, or unclear risk for each of 6 different domains: random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcomes assessment, handling of incomplete data, selective outcome reporting.

### **Statistical Analysis:**

-Comprehensive Meta-analysis Version 2 software of pooled results of all studies. Main measure of effect was means difference. Differences between control and intervention groups calculated and assessed.

-Heterogeneity evaluated by Cochrane Q test and I-squared index ( $I^2$  index)

-Level of statistical significance was set at  $p < 0.05$

### **Results:**

-410 articles identified with first search, 312 excluded, ultimately 12 articles eligible for review (see Fig 1) (total of 10 included for meta-analysis: sexual function 5 studies includes, two for sexual QoL, three for general quality of life.) 2 of the studies excluded from meta-analysis secondary to no control groups (were pre-post trials)

-Characteristics of included studies: Table 2

-Duration of intervention ranged from 4 weeks to 9 months

-Most control groups received routine care, 1 received other type of pelvic exercises

-9/12 recruited primiparous, 2/12 both primi- and multiparous, 1/12 multiparous

-Two of the studies only did PFME PP days #2-4, 2 were initiated during pregnancy, 2 at 6 weeks PP, one at 8 weeks PP, one at 12 weeks PP, one at 16 weeks PP, others not noted.

-Wide range of exercise parameters.

-Of those that reported drop out, the rate ranged from 2% (Paukhiz 2017) to 56% (Citak 2010).

-Meta-analysis of sexual function-5 studies included (Fig 2 forest plot of meta-analysis and Fig funnel plot)

-Pooled standardized differences in means (SMD) of sexual function, in both PFME group and controls were 0.462,  $p=0.009$

-Cochrane Q value 12.63,  $p=0.013$ ,  $I^2=68.3\%$

-meta-analysis revealed PFME can mildly improve sexual function

-Meta-analysis for sexual quality of life -2 studies included

-Pooled standardized differences in means (SMD) 1.294,  $p < 0.0001$ .

-Heterogeneity high ( $I^2=97.2\%$ ,  $p < 0.0001$ ), Forest plot Fig 4

-Meta-analysis for general quality of life -only 3/6 that reported on general quality of life entered into meta-analysis

- Pooled standardized differences in means (SMD) was 0.232,  $p=0.019$  with significant improvement noted in total QoL following PFE
- However, subgroup analysis showed no significant relationship between PFE and individual domain of physical or mental quality of life. Forest plot Fig 5, Funnel plot on effect of PFME on QoL Fig 6
  - Pooled data demonstrates standardized differences in means (SMD) for mental health 0.283,  $p=0.140$  and 0.200 and  $p=0.153$  for physical health.
  - Heterogeneity not significant because all used same questionnaire.
- Risk of bias-Fig 7 for summary
  - 8 studies with unclear risk for selection bias secondary to insufficient information provided on random sequence generation or allocation concealment, 5 reported adequate allocation concealment using sequentially numbered envelopes.
  - All included studies deemed at high risk for of performance bias secondary to the nature PFE as an experiment because blinding the women from their health provider not feasible
  - 4 studies low risk in relation to blinding
  - 3 judged high risk for attrition bias secondary to imbalance of lost to follow-up between groups or if overall  $>20\%$

Discussion: Quantitative pooling of the included studies showed a statistically significant increase in sexual function and quality of life in PP women when PFME performed. There was wide range of tools to evaluate sexual function and also varied training approaches interpreting the results should be done with caution. There remains a lack of high-quality research for this population.

Findings consistent with the cross-sectional study on women 6 years PP reported by Dean et al that woman who reported doing PFE score significantly higher on 7/10 sexual function questions. Also, Wu et al's meta-analysis reported a reduction in unsatisfactory sexual function with PFME but with their meta-analysis they allowed for combination treatment including biofeedback, electrical stimulation and lifestyle education.

It is thought that stronger levator ani muscles enhance support and lessens burden imposed on ligaments. Doing PFME increases blood flow to PF, and in more acute post-partum time helps revascularize damaged cells and tissues.

Kian et al found that there was a significant improvement of QoL for postpartum women with UI who had done 8 weeks of PFME as compared to control group and a previous cross-sectional study by Rezeai et al on sexual function and quality of life among PP women reported a clear link between sexual dysfunction and low quality of life. Sexual function however is a complex and can be affected by both physical and psychological factors.

**Strengths:** Meta-analysis restricted to RCT to reduce effect on confounders. Attempt to reduce bias by using 2 independent researchers when determining eligibility and with data extraction.

**Weaknesses:** Heterogeneity in the design of the studies. The wide variation of intervention methods, measurement tools, settings limited ability to analyze subgroups. Only 2 studies specific to QoL included in meta-analysis.

**Clinical Application:** Direct application with pelvic PT postpartum clients. Suggest further assessing sexual function even if not primary reason for the patient seeking treatment. Educating patients with the information that PFME can not only improve sexual function, it can also improve quality of life. This information can also serve as potentially enhanced motivation for compliance with home exercise programs.

**Questions:**

- 1) Are you clinically seeing PP women with sexual dysfunction as primary complaint? What is most common complaint?
- 2) At what point PP do you expect them to be at “new normal” baseline?
- 3) Do you recommend general aerobic exercise or larger muscle exercise for increased bloodflow?

**Other Resources:**

Sobhgol SS, Priddis H, Smith CA, Dahlen HG. The Effect of Pelvic Floor Muscle Exercise on Female Sexual Function During Pregnancy and Postpartum: A Systematic Review. *Sex Med Rev.* 2019 Jan;7(1):13-28. doi: 10.1016/j.sxmr.2018.08.002. Epub 2018 Oct 6. PMID: 30301705.