A critical appraisal of “Effect of Pelvic Floor Muscle Training on Female Sexual Function During Pregnancy and Postpartum: A Randomized Controlled Trial”

By

Josephine Linson, SPT

In partial fulfillment of the
requirements for the course:
PT 7240 Evidence-Based Practice in Physical Therapy
Department of Physical Therapy
Angelo State University
Member, Texas Tech University System
November 6, 2023
Abstract
This appraisal is over an article published in 2017 in the Iran Crescent Med Journal over pelvic floor strengthening during and after pregnancy, and the impacts on sexual quality of life postpartum. A brief introduction to the topic is provided, as well as the presented clinical question. The methodology with which the article was found and chosen for appraisal is described. The results section includes a summary of the selected article as well as appraisals of the introduction, methods, results, and discussion of the study. Finally, clinical relevance and implementation of pelvic floor exercises are discussed.

Key words: Pelvic floor exercises, Pregnancy, Postpartum, Sexual function
Introduction

Sexual function is an important aspect of one’s overall quality of life. It has been argued that sexual function and intimacy is an important aspect of life after the stress of childbirth, especially for brand new parents. However for females, after a traumatic event such as childbirth, sexual function is compromised, thus ultimately compromising quality of life postpartum. To combat this functionality issue, pelvic floor exercises can be utilized by therapists to help improve a patient’s pelvic floor function across many domains. There are many studies that demonstrate positive impacts of pelvic floor exercises on sexual function, but few that looked at the effects before and after childbirth. This information led me to develop my clinical question: “Does practicing pelvic floor strengthening prior to childbirth improve pelvic floor strength and overall quality of life postpartum”?

Methods

The search for relevant articles began through PubMed and PEDro, and ultimately terminated at Consensus which was able to provide further sources through PubMed. The main keywords used for this search included: pelvic floor strengthening, pregnant women, and postpartum. Additionally, filtering to a randomized controlled trial as opposed to a systematic review as well as focusing only on articles that emphasized pelvic floor exercises before and after childbirth helped to narrow down the search for studies that demonstrated true experimentation. The inclusion criteria included healthy pregnant women who were pregnant with a “singleton” and who were in their second trimester of pregnancy, the rationale being that the pregnancies being documented should be as low risk as possible. After utilizing this specific search criteria, a total of 37 articles on PubMed and PEDro were available for review.
Following a successful review of these articles, the one that seemed most applicable to the selected clinical question was “Effect of Pelvic Floor Muscle Training on Female Sexual Function During Pregnancy and Postpartum”. The study was led by Zahra Pourkiz, Sakineh Mohammad-Alizadeh-Charandabi, Mojgan Mirghafourvand, Sakinah Haj-Ebrahimi, and Fariba Ghaderi. The study took place in Iran, specifically in Sari, Mazandaran, and this article was originally published in the Iran Red Crescent Med Journal in 2017. This article was selected for appraisal largely due to its credibility. This article is credible due to the random allocation of the women, the study was single blinded, and the instrument used to measure the outcome, the Female Sexual Function Index (FSI), is reliable and valid and the authors do reference other literature where it has been used.

**Results**

**Summary of the study**

This article explored female sexual function after pregnancy, describing the importance of sexual function to maintain intimacy (especially during a stressful time such as postpartum) and how proper sexual function is imperative to one’s overall quality of life. However, childbirth injuries and hormonal changes can lead to sexual dysfunction in women postpartum. The study utilized 84 women in their second or third trimester of pregnancy and they were randomized into pelvic floor exercise or control groups. The women doing pelvic floor exercises were given exercises to perform at least twice a day until 36 or 37 weeks gestation, and then to continue the exercises after giving birth. The control group got the “routine care” that is typical during a pregnancy. At the conclusion of the study, the results demonstrated an increase in sexual function across several domains for the women in the exercise group that could be attributed to the
strengthening of pelvic floor muscles before and after childbirth.

**Appraisal of the study introduction**

The introduction is extremely comprehensive. There’s extensive background information regarding how sexual health fits into people’s lives and how important it is for personal health and self esteem. The introduction also describes what a pelvic floor strengthening exercise entails, and other studies that support the usage of pelvic floor exercises for sexual dysfunction, and these references appear credible. Additionally, it is described that based on the current literature, more research is needed based on the populations studied (postpartum women or women who have never been pregnant). At the conclusion of the introduction is the aim of the study, and it is expressed well that this research is being done because there is a lack of studies done on pregnant women.

While the introduction is relatively thorough, there are a few weaknesses to highlight. One of the references may lack credibility, as it is from 1976 and there was no way to access the full text in order to further verify the credibility, so it could be classified as weak literature. Additionally, it would have been beneficial for the introduction to include what kind of research would be done, as well as include a hypothesis regarding the effect of pelvic floor exercises pre and postpartum, rather than just describe the aim of the study overall. Apart from these weaknesses though, the introduction is relatively strong.

**Appraisal of the study methods**

The study methods highlight many strengths. The study itself employed a single blinded, randomized controlled trial that was prospective and longitudinal, thus reducing bias. There were two groups of women who were all selected based on similar clinical and prognostic characteristics, and both groups were treated the same except for the experimental intervention.
Additionally, the tools used to assess the outcome measures were reliable and valid, and the statistical analyses performed were appropriate for the study design.

In terms of weaknesses, the intervention was not described with enough detail to allow replication of the study in the future. The study methods do not provide specific exercises that were prescribed, only the frequency through the day that they were to be performed. Finally, there isn’t any information given on how the dependent variables were collected apart from describing the questionnaires that were given, and that the data was collected by a “trained professional”. Based on this information, the study would be difficult to try to recreate.

Appraisal of the study results

The results section is very easy to comprehend and follow, with presentation of statistical comparisons between the control and the exercise groups, as well as a visual representation of the results of each sexual domain through Figures 1 and 2. Figure 1 is an easy to understand flow diagram that helps the reader visualize the process of this experiment, and Figure 2 demonstrates graphs representing each sexual domain and the improvements between the control and the experiment group over the three checkpoints. The results section successfully addresses each aspect of sexual function initially mentioned in the aims of the study, and numerical data is presented that is statistically significant.

Unfortunately, the results section was missing some key points that would have added to the clinical significance of this study. Neither the minimal clinically important difference (MCID) or number needed to treat (NNT) were calculated or described anywhere in the article. Further, the authors report on the findings of the FSFI and the SQOL-F outcome measures, but there is nothing specifically referenced regarding the Oxford grading system for muscle strength. The final part of the results section briefly mentions “flicker” or “weak” strength at
baseline, and that the strength improved for the experimental group, but assuming that that is the Oxford grading system, the analysis of those results is not as in depth as the FSFI and SQOL-F results.

**Appraisal of the study discussion**

The authors do a great job of addressing how this study is the first of its kind to investigate pelvic floor strengthening during and after pregnancy, as well as effectively comparing and contrasting their study results to previous findings in existing literature. The authors successfully describe the meaning of these results, including specific muscles that could have newfound strength accounted for. The limitations to the study are addressed, and it is mentioned that there was a potential for bias because the participants could not be blinded, as well as the use of subjective outcome measures.

The major issue with the discussion though, is the overgeneralization of the results to the population. The authors conclude that it “seems” that pelvic floor exercises prior to and after birth could improve sexual function, so it should be recommended to all women. Yet, the study only examined women who were pregnant with a singleton, and were experiencing their first pregnancy. Thus, the results of the study may be applicable and recommended to women preparing for the birth of their first child, but may not be relevant for a woman preparing for a second or third child, hence the need for future studies.

**Discussion**

The clinical significance of this study is that it supports the usage of pelvic floor exercises for women who are pregnant with their first child in order for them to have better pelvic floor strength and better sexual function after the trauma of childbirth. Further, the study
also answers the specific clinical question by demonstrating the aforementioned improvements. The study emphasizes the importance of starting these exercises early for best results (17-20 weeks of gestation), and it’s possible that if pelvic floor exercises prior to and after childbirth were encouraged, a lot of women’s quality of life, sexual and otherwise, would be drastically improved postpartum.

There is extensive evidence supporting pelvic floor strengthening across the board, so with the proper training and instruction, this would be a beneficial intervention to use in the clinic. If this intervention was employed, it is likely that patients would see the same strength increase, and further increase sexual quality of life. However, there are some drawbacks with this population. To start, pregnant women may not be referred to physical therapy or make the choice to come if the option is available, making it difficult to ensure that exercises are implemented at the best possible time. Additionally, once the baby is born, it may be easier for the woman to stop coming to the clinic and stop doing exercises as they adjust to life postpartum. Unfortunately, due to these factors, it may not be worth it to implement these interventions for this specific population. A way to turn the tables more in favor of this intervention would be to make physical therapy more accessible for pregnant women, for example, employ a therapist at the OB-GYN office for this specific purpose, and make it easier for the women to visit the therapist. If therapy was more available from the start of pregnancy, more women would be more likely to utilize it and this intervention could be more easily used.

In a clinical scenario, I would feel confident enough to use this research for a patient’s specific situation if necessary. I feel that the paper demonstrates a relevant experiment and analyzes the results with valid and reliable outcome measures that show a positive correlation with pelvic floor exercises and strength increases. Additionally, the references to available
literature and the consistencies with results across the studies helps me to feel more confident regarding the applicability to a patient. In the future, I would feel confident implementing this intervention safely and appropriately, but only if I was a specialist when it came to pelvic floor therapy. I would like to have the knowledge and expertise to customize a good exercise program for pelvic floor strengthening, especially because this study does not give specific exercises to do.

To conclude, pelvic floor exercises have been shown to increase pelvic floor strength, and this study specifically demonstrated that pelvic floor exercises can help increase sexual quality of life postpartum, specifically in women who are pregnant with their first child. This study does demonstrate awareness for the need for future research on this topic, specifically for women who have already had a child. With further research, it is possible that pelvic floor exercises pre and postpartum could be proven beneficial for all women, and can further improve quality of life when it comes to pelvic function.