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ORIGINAL RESEARCH

A Comparative Analysis of Conventional Therapy and Pilates on Quality of Life in Pelvic Organ Prolapse

Análisis comparativo de la terapia convencional y el pilates sobre la calidad de vida ante el prolapso de losórganos pélvicos

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Abstract

Purpose. Pelvic Organ Prolapse is a condition causing pelvic floor descent, leading to discomfort, urinary issues, and reduced quality of life. Conventional therapy, including pelvic floor exercises, is widely used, while Pilates, a mind-body exercise program, is gaining popularity for core strengthening and pelvic floor rehabilitation. This study aims to analyze and compare the impact of these two interventions on quality of life in women diagnosed with pelvic organ prolapse. **Methods.** This randomized controlled trial included 100 women aged 35-60 years with stage I-III POP, recruited from a tertiary care hospital. Subject randomized in to two groups: Conventional Therapy (n=50) or Pilates (n=50). The intervention spanned 12 weeks, with three sessions per week. QoL was assessed using the validated Pelvic Floor Impact Questionnaire-7 (PFIQ-7) at baseline and after the intervention. Secondary outcomes included pelvic floor muscle strength measured using the Modified Oxford Scale. **Results.** Both groups showed significant improvements in PFIQ-7 score post-intervention ($p<0.05$). However, the Pilates group demonstrated a greater reduction in symptom severity and a higher increase in pelvic floor muscle strength compared to the Conventional Therapy group with mean difference. Women in the Pilates group reported enhanced physical functioning, sexual satisfaction, and overall quality of life. **Conclusion.** Findings suggest both conventional therapy and Pilates are effective in improving Quality of life in women with Pelvic organ prolapse, and that Pilates provides superior benefits due to its emphasis on core stabilization and functional training. This highlights the potential of integrating Pilates into routine Pelvic organ prolapse management protocols.

Keywords: Patient education, postmenopausal, pelvic floor rehabilitation, Psychology, Exercises.

Resumen

Propósito. El prolapso de los órganos pélvicos es una afección que causa el descenso del suelo pélvico, lo que lleva a molestias, problemas urinarios y reducción de la calidad de vida. La terapia convencional, incluyendo ejercicios para el piso pélvico, es ampliamente utilizada, mientras que el programa de ejercicios cuerpo-mente *Pilates* está ganando popularidad para el fortalecimiento abdominal y la rehabilitación del suelo pélvico. Este estudio tiene como objetivo analizar y comparar el impacto de estas dos clases de intervenciones en la calidad de vida de las mujeres diagnosticadas con prolapso de órganos pélvicos. **Métodos.** En este ensayo controlado aleatorizado participaron 100 mujeres de 35 a 60 años con estadio I-III POP, reclutadas en un hospital terciario. Las sujetos aleatorizadas fueron clasificadas en dos grupos: Terapia Convencional (n=50) o Pilates (n=50). La intervención duró12 semanas, con tres sesiones por semana. La calidad de vida se evaluó utilizando el validado *PelvicFloor Impact Questionnaire-7* (PFIQ-7),primero al comienzo del estudio ydespués tras la intervención. Los resultados secundarios incluyeron medir la fuerza del músculo del suelo pélvico medida con la escala de Oxford modificada. **Resultados.** Ambos grupos mostraron mejoras significativas en la puntuación de PFIQ-7 post-intervención ($p<0.05$). Sin embargo, el grupo de Pilates demostró una mayor reducción en la gravedad de los síntomas y un mayor aumento en la fuerza muscular del suelo pélvico en comparación con el grupo de Terapia Convencional con diferencia media. Las mujeres en el grupo de Pilates reportaron un mejor funcionamiento físico, mayor satisfacción sexual y más alta calidad general de vida. **Conclusión.** Los hallazgos sugieren que tanto la terapia convencional como el Pilates son eficaces para mejorar la calidad de vida en mujeres con prolapso de órganos pélvicos, y que el Pilates proporciona beneficios superiores debido a su énfasis en la estabilización del núcleo abdominal y el entrenamiento funcional. Esto subrayalaposibilidad de integrar el Pilates en los protocolos rutinarios de manejo del prolapso de órganos pélvicos.

Palabras clave: educación del paciente, postmenopausia, rehabilitación del suelo pélvico, psicología, ejercicios.

Introduction

Pelvic organ prolapse is a major issue in women's health, affecting both physical and mental well-being. This condition is characterized by the dropping of one or more pelvic organs as a result of weakness or dysfunction in the pelvic floor.[1] This research seeks to evaluate the efficacy of pelvic floor muscle training and Pilates in improving UI, reinforcing and boosting the endurance of pelvic floor muscles (PFMs), and examining the effect of UI on quality of life in postmenopausal women. The bladder, uterus, and rectum encircle the vaginal canal. Because of the positioning of these organs, a deficiency in the supporting tissues frequently results in protrusion into the vaginal canal.[2] Pelvic organ prolapse is characterized by the lowering of one or more of the following: the anterior vaginal wall, posterior vaginal wall, uterus, or the apex of the vagina.[3] Pelvic Organ Prolapse (POP) is classified into four stages based on the severity of the prolapse. In Stage I, the prolapse is more than 1 cm above the hymen. Stage II occurs when the prolapse is within 1 cm of the hymen. Stage III is characterized by the prolapse extending more than 1 cm below the hymen but not completely outside the vaginal canal. Finally, in Stage IV, the prolapse is completely outside the vaginal canal. This classification helps in assessing the severity of the condition and determining appropriate treatment options.[4,5]

According to research, giving birth causes the pelvic floor to lose support in almost 50% of women. Between 3% and 28% of people have symptomatic prolapse.[6] The first-line conservative treatment for pelvic organ prolapse is still conventional therapy, especially pelvic floor muscle training. There is substantial evidence that this type of exercise is beneficial in reducing symptoms and enhancing pelvic floor function. By addressing fundamental problems with pelvic organ support, studies have repeatedly demonstrated that regular pelvic floor muscle training improves muscle strength, lessens the severity of symptoms, and raises quality of life. But even with its advantages, many women find it difficult to stick to pelvic floor muscle training regimens, frequently because they find the exercises boring or don't see results right away.[7]

Pilates is a type of exercise that focuses on strengthening and improving the flexibility of the entire body rather than just one particular muscle group. Modified Pilates incorporates exercises that can indirectly engage and train the pelvic floor muscles while avoiding straining, breath-holding, and intense abdominal contractions that could put pressure on the pelvic floor.[8] Pilates' dynamic and captivating style may contribute to its superior results in terms of patient satisfaction and adherence. For example, Pilates exercises that emphasize coordinated muscle activation, such as leg circles, pelvic bridges, and modified squats, can maximize pelvic floor support during functional activities. The majority of existing research focuses on immediate advantages, so more investigation is required to assess long-term gains in quality of life and symptom management.[9]

By directly assessing the impact of Pilates and pelvic floor muscle training on the quality of life of women with pelvic organ prolapse, this study intends to reduce current research gaps.[10] By focusing on both physical and psychological aspects and using standardized quality of life assessment tools, this study will offer helpful insights on optimizing conservative management techniques. The results may significantly influence clinical practice by guiding medical professionals in the prescription of successful rehabilitation programs that are customized to each patient's preferences and requirements.[11] This study aims to increase our knowledge of the relative advantages of Pilates and pelvic floor muscle training so that women with pelvic organ prolapse can make better decisions about their care, enhancing their general health and quality of life.[12]

Materials and methods

This randomized controlled trial aimed to assess and compare the effectiveness of Pilates and conventional therapy in improving quality of life (QoL) and pelvic floor muscle strength in women with stage I-III pelvic organ prolapse (POP). A total of 100 women, aged 35-60, were recruited from a tertiary care hospital. The data were collected before the study initiated. Among participants there were 70% of women who were educated to secondary school level and 30% discontinued in primary education level. Economically 73% of

participants fall in upper middle class, 10% lower middle class and 17% of participants are from below poverty population. Participants were randomly assigned to one of two treatment groups: Pilates (n=50) or Conventional Therapy (n=50). Over a period of 12 weeks, participants in both groups attended three sessions per week. The primary outcomes measured were QoL, assessed at baseline and after the 12-week intervention using the Pelvic Floor Impact Questionnaire-7 (PFIQ-7) which is validated tools for assessing the impact of pelvic organ prolapse on daily life and sexual health. Secondary outcomes included the assessment of pelvic floor muscle strength, measured using the Modified Oxford Scale. This scale evaluates the strength of the pelvic floor muscles through digital examination, providing a clear indication of muscle function and potential improvement following therapy. The aim of the study was to determine whether Pilates, as a more targeted form of exercise, could offer superior benefits in improving both Quality of life and pelvic floor muscle strength compared to conventional therapy. The results of the trial could provide valuable insights into non-invasive treatment options for women with Pelvic Organ prolapse, particularly those seeking alternatives to surgical intervention.

Exercise Prescription

Conventional Group

- Kegel Exercises (Pelvic Floor Contractions) should be done in 3 sets of 10-15 repetitions, 3 times per week. To execute, contract the pelvic floor muscles, hold for 5-10 seconds, and relax for 5-10 seconds, focusing on isolating the pelvic floor.
- Pelvic Bridges are performed in 3 sets of 10 repetitions, 3 times per week. Lie on your back with knees bent and feet flat, lift the hips while engaging the glutes and pelvic floor muscles, hold for 3-5 seconds, then lower back down.
- Hip Adduction is recommended for 3 sets of 10 repetitions, 2-3 times per week. Lie on your back with a ball or cushion between your knees, squeeze the ball while engaging the pelvic floor muscles, hold for 3-5 seconds, then relax.
- Squats should be done in 3 sets of 10-12 repetitions, 3 times per week. Stand with feet hip-width apart, lower into a squat position while engaging the pelvic floor muscles, then return to standing.

Pilates group

- Pelvic Tilts (Supine) should be done in 3 sets of 10-12 repetitions, 3 times per week. Lie on your back with knees bent and feet flat, tilt your pelvis upward, flattening your lower back against the floor while engaging the pelvic floor muscles.
- Bridging with Leg Extensions is performed in 3 sets of 10 repetitions per leg, 3 times per week. Perform a bridge, then extend one leg while keeping the pelvic floor engaged. Alternate legs after each repetition.
- Modified Squats with Pilates Ring should be done in 3 sets of 10-12 repetitions, 3 times per week. Stand with a Pilates ring between your thighs, perform squats while gently squeezing the ring and engaging the pelvic floor muscles.
- Leg Circles are recommended for 3 sets of 5-10 circles in each direction, 3 times per week. Lie on your back and extend one leg toward the ceiling, perform small, controlled circles with the extended leg while engaging the pelvic floor muscles.

Statistical analysis: The statistical analysis is done with help of SPSS software. The data were reported in table 1,2 and graph 1.

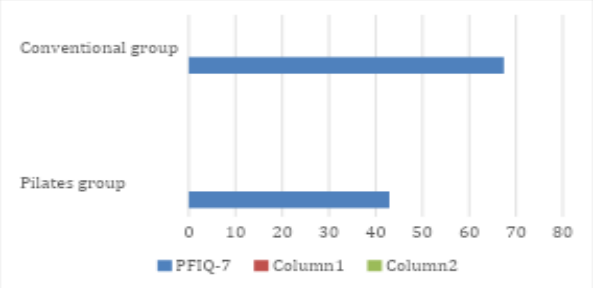
Table 1 Conventional group data analysis:

SI.no	Group	Pre test	Post test	P value
1.	PFIQ-7	74.56	67.42	0.0017
3	Modified Oxford scale	1.68	3.01	0.001

Table 2 Pilates Group data analyses

SI.no	Group	Pre test	Post test	P value
1.	PFIQ-7	74.08	42.92	0.0012
3	Modified Oxford scale	1.68	3.62	0.001

Graph 1



Post test PFIQ-7 data of both groups were represented.

Results: The statistical analysis showed that there was significant difference between the convention and Pilates groups for both PFIQ1 and Oxford measures, as indicated by the independent sample t-test results which reveal mean difference of 24.5 and 0.52 respectively. Symptomatic difference exists in Pilates group.

Discussion: Various study includes the benefits of exercises in pelvic organ prolapse.A study compares the effectiveness of stabilization exercises and pelvic floor muscle training (PFMT) in women with stage 1 and 2 pelvic organs prolapse (POP). Involving 38 women with an average age of 45.60 years, the research assessed pelvic floor muscle function using electromyography, prolapse severity with the Pelvic Organ Prolapse Quantification (POP-Q) system, and quality of life through the Prolapse Quality of Life Questionnaire. Both exercise interventions resulted in significant improvements in pelvic muscle activation and reductions in prolapse severity. However, the stabilization exercise group showed enhanced general health perception compared to the PFMT group. The findings suggest that while both training programs are beneficial, incorporating stabilization exercises may provide additional advantages in managing POP and improving overall quality of life for affected women.[13]

Another study examined the intra-abdominal pressures (IAP) generated during Pilates Mat and Reformer exercises in 20 healthy women, averaging 43 years old, with no symptomatic vaginal bulge. The aim was to determine if these exercises exceed the IAP threshold associated with sit-to-stand activities. Results showed no significant differences in maximum IAP between sit-to-stand and Pilates exercises; however, 6% to 25% of participants exceeded their individual sit-to-stand thresholds during 10 of the 22 exercises. While half of the exercises surpassed the mean area under the curve (AUC) of sit-to-stand, only the Pilates Reformer and Mat roll-ups exceeded the AUC at a threshold of 40 cm H2O. The findings support recommending these Pilates exercises as a low IAP routine for women, though further research is needed on their long-term effects on pelvic floor health.[14]

Supporting the research with increasing participants, this study demonstrates that while both conventional therapy and Pilates significantly improve quality of life in women with pelvic organ prolapse, Pilates yields superior outcomes due to its holistic approach targeting core stabilization and functional movement. The greater reduction in symptom severity and improved pelvic floor muscle strength observed in the Pilates group highlights the effectiveness of integrating specific muscle engagement with dynamic, functional exercises. Enhanced physical functioning, sexual satisfaction, and overall well-being reported by Pilates participants suggest that this method not only addresses physical symptoms but also improves psychosocial aspects of recovery. These findings support Pilates as a valuable addition to standard Pelvic organ prolapse management, offering a more comprehensive approach to rehabilitation and long-term quality of life enhancement. Further research could explore its impact across broader populations and stages of Pelvic organ prolapse to solidify its role in clinical practice.

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