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**THE INFLUENCE OF PILATES ON POSTPARTUM RECOVERY:
AN INTEGRATIVE LITERATURE REVIEW**

**A INFLUÊNCIA DO PILATES NA RECUPERAÇÃO PÓS-PARTO:
UMA REVISÃO INTEGRATIVA DA LITERATURA**

**LA INFLUENCIA DEL PILATES EN LA RECUPERACIÓN POSTPARTO:
UNA REVISIÓN INTEGRATIVA DE LA LITERATURA**

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Abstract

The postpartum period is an important time in women's lives, as they face many challenges, both physical and emotional. During this phase, various hormonal and physiological changes occur that can affect a woman's general health, well-being and quality of life, and physical exercise is beneficial. Pilates exercises, as a sport, have been shown to be effective in recovery after childbirth, as they contribute to muscle strengthening, postural correction and stress reduction, as well as promoting emotional balance. **Objective:** To understand the influence of Pilates on women's recovery in the postpartum period. **Methodology:** An integrative literature review was carried out, with articles published in the last 6 years, focusing on the effects of Pilates exercises on quality of life, incontinence and musculoskeletal changes in the postpartum period. **Results:** The results of the seven articles show a positive impact on women's lives, relieving pain, favouring physical recovery and emotional well-being, reducing anxiety and preventing postpartum depression. **Conclusion:** The Pilates is an effective tool in postnatal recovery and its inclusion in postnatal health programmes is recommended, although more research is needed for standardised protocols that guarantee safety and effectiveness in clinical practice.

Keywords: Physical Exercise; Pilates Method; Postpartum Period; Urinary Incontinence.

Resumo

O período pós-parto é um momento importante na vida das mulheres, uma vez que enfrentam muitos desafios, tanto físicos, como emocionais. Durante esta fase, ocorrem várias alterações hormonais e fisiológicas que podem afetar a saúde geral, o bem-estar e a qualidade de vida da mulher, sendo o exercício físico benéfico. Os exercícios de Pilates, como modalidade esportiva, têm demonstrado ser eficazes na recuperação após o parto, pois contribuem para o fortalecimento muscular, correção postural e redução do stress, além de promoverem o equilíbrio emocional. **Objetivo:** Compreender a influência do Pilates na recuperação da mulher no período pós-parto. **Metodologia:** Realizou-se uma revisão integrativa da literatura, com artigos publicados dos últimos 6 anos, focando os efeitos dos exercícios de pilates na qualidade de vida, incontinência e alterações musculoesqueléticas no período pós-parto. **Resultados:** Os resultados dos sete artigos evidenciam um impacto positivo na vida da mulher, aliviando a dor, favorecendo a recuperação física e bem-estar emocional, reduzindo a ansiedade e prevenindo a depressão pós-parto. **Conclusão:** O Pilates é uma ferramenta eficaz na recuperação pós-parto e recomenda-se a sua inclusão em programas de saúde pós-natal, embora seja necessária mais investigação para protocolos padronizados que garantam segurança e eficácia na prática clínica.

Palavras-chave: Exercício Físico; Incontinência Urinária; Método Pilates; Período Pós-parto.

Resumen

El periodo posparto es un momento importante en la vida de las mujeres, ya que se enfrentan a muchos retos, tanto físicos como emocionales. Durante esta fase, se producen diversos cambios hormonales y fisiológicos que pueden afectar a la salud general, el bienestar y la calidad de vida de la mujer, por lo que el ejercicio físico resulta beneficioso. Los ejercicios de Pilates, como deporte, han demostrado ser eficaces en la recuperación tras el parto, ya que contribuyen al fortalecimiento muscular, la corrección postural y la reducción del estrés, además de promover el equilibrio emocional. **Objetivo:** Conocer la influencia del Pilates en la recuperación de la mujer en el postparto. **Metodología:** Se realizó una revisión bibliográfica integradora, con artículos publicados en los últimos 6 años, centrados en los efectos de los ejercicios de Pilates sobre la calidad de vida, la incontinencia y los cambios musculoesqueléticos en el posparto. **Resultados:** Los resultados de los siete artículos muestran un impacto positivo en la vida de las mujeres, aliviando el dolor, favoreciendo la recuperación física y el bienestar emocional, reduciendo la ansiedad y previniendo la depresión postparto. **Conclusión:** El Pilates es una herramienta eficaz en la recuperación postnatal y se recomienda su inclusión en los programas de salud postnatal, aunque se necesita más investigación para protocolos estandarizados que garanticen la seguridad y eficacia en la práctica clínica.

Descriptores: Ejercicio Físico; Incontinencia Urinaria; Método Pilates; Período Posparto.

Introduction

The recovery of women in the postpartum period is an essential, but often neglected, dimension of public health and clinical practice. The puerperium, or postpartum period, is a period that involves the physiological, psychological and social changes of the woman from childbirth until the reproductive system returns to its previous state, which usually occurs in about six weeks⁽¹⁾. This period is considered critical in women's lives, where physical and emotional well-being may be compromised by the demands of childbirth and early motherhood^(2,3). During this phase, women may face challenges such as fatigue, musculoskeletal changes and symptoms of anxiety or depression, which can negatively affect their quality of life⁽⁴⁾. Despite the relevance of this period, there is a gap in the scientific literature regarding specific and effective interventions that promote a complete and safe recovery of women in the postpartum period. Given this problem, it is essential to investigate strategies that promote an integral recovery, contributing significantly to the body of knowledge in the area of women's health.

In today's society, issues related to the impact of postpartum and women's quality of life have been gaining prominence. In this context, physical exercise has been affirmed as a fundamental intervention to improve physical fitness, strengthen weakened muscles during pregnancy and promote the emotional well-being of women, helping them to cope with physical and psychological challenges^(5,6). Among the recommendations for postpartum exercises, the Pilates method has gained popularity as an effective therapeutic alternative that combines muscle strengthening with breathing and concentration techniques^(2,7). This holistic approach not only improves posture and strengthens the pelvic floor, but also promotes balance between physical and mental health, reducing symptoms of stress and anxiety, thus contributing to women's emotional well-being at this stage⁽⁵⁾.

The Pilates Method was developed by Joseph Hubertus Pilates, an exercise approach based on conscious control of body movements to improve coordination and balance between body, mind and spirit⁽⁸⁾. In his book *Return to Life Through Contrology* (1994),

Pilates states that a constant and conscious practice allows total control over the body, resulting in better coordination and movement rhythm. The method is based on six essential principles: 1) concentration, 2) control, 3) centralization, 4) fluidity, 5) precision and 6) breathing, all aimed at strengthening the body core⁽⁹⁾.

Despite its potential benefits, few studies specifically analyze the effects of Pilates on postpartum recovery, which demonstrates the need to expand research in this area. This lack represents a scientific opportunity to deepen knowledge about its impact on the recovery of women in the postpartum period, thus contributing to the advancement of literature in the area of maternal health. Thus, understanding the impact of Pilates in the postpartum period can provide an important support for clinical practice, guiding health professionals in prescribing effective and safe exercises as well as making a unique contribution to existing literature, addressing an integrated perspective on postpartum recovery. Thus, this review aims to investigate the influence of Pilates on women's recovery in the postpartum period.

Methodology

Type of study

The type of study used was an integrative review of the literature on the subject: the influence of Pilates in postpartum recovery. This methodological strategy allows to synthesize the results and better understand the subject, including several phases such as formulation of the research question, definition of inclusion or exclusion criteria, identification of relevant data, critical evaluation, interpretation of finally, the elaboration of a synthesis of acquired knowledge⁽¹⁰⁾.

Methodological procedures

In order to solve the objective of our work, a research question was formulated using the PICO model. According to this model, four basic elements are specified: P: Population or study participants; I: Intervention; C: Comparison; and O: "Outcomes" Results or expected effect of the intervention⁽¹¹⁾. Based on this structure, the following guiding question was

elaborated: What is the influence of Pilates in postpartum recovery of women compared to no intervention or other forms of physical exercise? With the elaborated PICO question, a collection of data on the theme under study followed.

The research focused on published studies and search descriptors were identified according to the Health Science Descriptors. The key words were physical exercise, urinary incontinence, Pilates and postpartum. The research of scientific articles was carried out in specialized databases in the health area, such as EBSCOhost, Pubmed, Google Scholar and Virtual Health Library, combining them with the Boolean operators AND and OR. Inclusion criteria were defined: publications of the last 6 years, studies whose population includes women at this stage of the postnatal delivery, articles on the method of Pilates in the postpartum period, available in full, published in Portuguese, Spanish and English. As exclusion criteria: articles on the method of Pilates in other phases of the woman's life, publications below the year 2019. With these criteria, 32 articles were obtained, after removing the duplicates and those that are not available in full text, 20 articles remained for analysis. After reading the title and summary, when the reading of the title and summary were not sufficient, the reading of the full text of the article resulted in 7 articles, as shown in the flowchart in Figure 1.

For the evaluation of the methodological quality of the included articles, the internationally recognized instruments of the Joanna Briggs Institute were used in order to verify the scientific rigor by type of study, the reliability of the results and the internal validity of each study⁽¹²⁾. This step was essential to ensure that the analyzed findings were based on consistent evidence, contributing to a critical and grounded interpretation of the results obtained and strengthening the robustness of the conclusions.

Achieved results

This section is designed to analyze the studies included in the review. Table 1 was created to facilitate data interpretation.

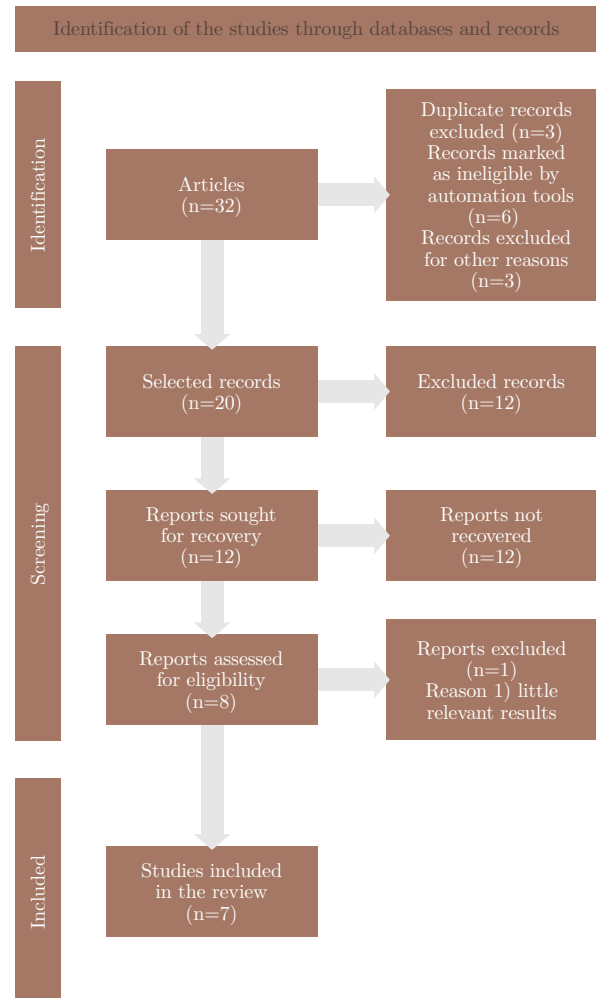


Figure 1: Article selection process according to the PRISMA model 2020 flowchart.

Table 1: Data extracted from the analyzed articles.

Authors (Year)	Type of Study and Level of Evidence	Intervention (I)/Objectives	Results/Conclusion
Anggraeni A, Dian NP, Herawati L, Widyawati N, Arizona T, Leo IK. 2019.	Systematic literature review Level 1.a	To explore the effect of physical exercise on the quality of life of women in the postpartum period.	The review found that exercises such as yoga, Pilates, and pelvic floor muscle training are beneficial for postpartum women's well-being. However, it was not possible to determine the most effective duration or timing, highlighting the need for further research.
Barbosa AK, Da Silva L C, Do Prado J, Silva ER, De Sousa AK, De Sousa T. 2020.	Systematic literature review Level 1.a	The importance of Pilates in the treatment of musculoskeletal changes after childbirth.	The Pilates method is effective in improving postpartum recovery, strengthening muscles, improving flexibility and posture, and reducing stress in postpartum women. Pilates stands out from other exercise methods in these benefits, but further studies are recommended to obtain more robust and applicable results in therapy.
De Oliveira T, Furtado N, Simões D, Andrade L. 2021.	Integrative Literature Review Level 4	To demonstrate the benefits of practicing the Pilates method in women preparing for a humanized birth.	Pilates is beneficial for women during pregnancy and postpartum, facilitating physical recovery and emotional well-being. Results indicate that Pilates improves posture, muscle strength, and helps relieve pain, contributing to a more positive birth experience. The study highlights the need for further research to explore the benefits and applications of Pilates in the context of women's health.
De Souza PC, Bittar C. 2019.	Qualitative study Level 3.b	To understand the perception of a group of women about their experiences during pregnancy, childbirth and the immediate postpartum period after practicing Pilates.	The Pilates method is beneficial during pregnancy and postpartum, helping women improve their physical and mental well-being. Results indicate that it helps strengthen the pelvic floor, reduces pain, and improves posture and flexibility, all key aspects of postpartum recovery. These results highlight the importance of including Pilates in supporting women's holistic health care.
Gallo-Galán LM, Gallo-Vallejo MA, Gallo-Vallejo JL. 2023.	Narrative Review Level 4	To discuss the benefits of exercise in the postpartum period.	Postpartum physical activity improves maternal health and reduces symptoms of anxiety and depression, although many women do not return to exercise after delivery. Support from primary care physicians is essential to motivate and adapt exercise to their needs. Furthermore, exercising while breastfeeding improves the quality of breast milk.
Parveen A, Kalra S, Jain S. 2023.	Systematic literature review Level 1.a	To evaluate the benefits of Pilates therapies for women with health problems, focusing on physical and psychological health, with a focus on physical and psychosocial outcomes.	Pilates has been shown to significantly improve quality of life, flexibility, strength, mobility, and pain control in fibromyalgia and chronic low back pain, as well as improving body mass index and respiratory capacity. In conclusion, Pilates may be valuable for women's health and well-being, but more studies are necessary to confirm this.
Urer E, Ozen N, Terzioğlu F. 2023.	Retrospective case-control study Level 1.b	To evaluate the effect of Pilates in preventing postpartum stress urinary incontinence (SUI).	The study concluded that women who practiced Pilates during pregnancy had significantly fewer SUI symptoms compared to those who did not. The exercises strengthened the pelvic floor, reducing episodes of postpartum incontinence. Healthcare professionals should encourage Pilates during pregnancy to prevent this condition in the postpartum period.

Discussion

The literature review reveals that physical exercise, namely Pilates, provides significant benefits to women's quality of life and overall health during the pregnancy-puerperal cycle. These benefits cover the musculoskeletal, emotional and functional dimensions, being supported by several studies that analyze the effects of this practice on postpartum recovery.

First, the study by Anggraeni *et al* (2019)⁽⁴⁾ provides evidence that exercise contributes to a better quality of life for postpartum women by reducing physical exhaustion, decreasing stress, improving mood and increasing energy. In addition, the authors highlight that exercise allows a more accelerated physical recovery, and the Pilates method is considered beneficial due to its low impact and the ability to strengthen deep muscles without putting additional stress on the body in recovery. This specific activation of the deep muscles, especially the pelvic floor, is essential to restore stability and postural balance in women. These conclusions are supported by Barbosa

and collaborators (2020)⁽¹³⁾, who explore how this practice addresses common musculoskeletal problems in the postpartum, such as low back pain and pelvic floor dysfunction. This modality provides pain relief, improves posture and increases abdominal and pelvic strength. This fact is of great relevance, since the strengthening of the pelvic floor is crucial not only to prevent urinary incontinence, but also to support the internal organs, facilitating the functional return and well-being of women in postpartum.

Pilates is not only useful for physical recovery, but also for emotional well-being, a fundamental aspect in the prevention of postpartum depression. The research by Gallo-Galán and colleagues (2023)⁽³⁾ underlines that health professionals in primary care can recommend Pilates as a safe and effective exercise that contributes to psychological well-being, reducing stress and improving the self-esteem of postpartum women, which is crucial for better adaptation to motherhood and prevention of postpartum depression.

In addition to the mentioned physical benefits, regular practice of Pilates during pregnancy and postpartum can help prevent or reduce the incidence of urinary incontinence in women in a first birth according to the study by De Oliveira *et al* (2021)⁽⁷⁾. The incidence of this condition in the postpartum period affects the quality of life and confidence of many women. By strengthening the pelvic floor, Pilates offers a preventive measure to improve physical functionality, facilitating a safer and more comfortable return to daily activities as indicated in the study by Urer *et al* (2023)⁽⁶⁾.

In addition to the physical and emotional benefits, De Souza and Bittar (2019)⁽²⁾ argue that Pilates offers a safe and adaptable therapeutic alternative for women at this stage of their lives, instead of simply treating the pathologies associated with pregnancy and the postpartum period. The authors Anggraeni *et al* (2019)⁽⁴⁾ also report that women who practice Pilates report a more positive perception of their body, due to the mind-body connection it promotes, which is essential for a healthy and empowered motherhood experience.

The systematic review of Parveen *et al* (2023)⁽⁵⁾ emphasizes the importance of the frequency and regularity of the practice of Pilates to maximize its benefits. Although its effects may vary depending on the intensity and duration of sessions, when performed regularly, it seems to contribute to a stronger physical recovery and a reduction in adverse emotional symptoms such as anxiety and stress. This fact suggests the need to establish standardized exercise protocols to integrate Pilates into maternal care programs in the context of postpartum public health.

Finally, De Oliveira *et al* (2021)⁽⁷⁾ consider that the inclusion of Pilates in physiotherapeutic care during these stages offers women a holistic alternative that complements traditional methods, benefiting not only the physical dimension, but also the emotional balance of the woman. This approach becomes relevant, especially considering the emotional and physical transition that many women experience during and after pregnancy.

In summary, the studies analyzed indicate that Pilates has a positive and multifactorial influence on women's recovery in the postpartum period, standing out as an effective intervention when compared to the absence of exercise or other less specific modalities. Therefore, in addition to the physical and emotional benefits, Pilates also promotes a body and psychological empowerment essential for a healthy motherhood. These findings answer the guiding question and the objective of this review, by demonstrating the beneficial effects of Pilates on both physical recovery and emotional well-being of postpartum women.

Study limitations

The limitations of this Integrative Literature Review are related to language-based research, since only articles in Portuguese, English and Spanish were considered, which may have caused the loss of important studies in other languages. We also pointed out as limitations to the sample of articles chosen, since only studies accessible online in full text were included, which may have prevented the inclusion of potentially significant research on the subject. The limited number of studies included in the final sample is also considered a limitation, which may restrict the generalization of the results and indicates the need for more scientific research on the influence of Pilates on postpartum recovery.

It is important to highlight that despite the positive results presented, many studies still have limitations regarding sample size and the diversity of protocols used, highlighting the need for future research that consolidates and expands knowledge on the topic.

Contributions for Nursing

This Integrative Literature Review will allow the reflection of the importance of the Pilates method in the recovery of women in the postpartum period, and can thus make important contributions to the provision of care, particularly at the level of education and health promotion. It is important to educate the population, reinforcing scientific evidence in order to bring benefits to their daily lives, reducing health costs and improving their quality of life. This scientific evidence is important for the nurse to know how to respond to postpartum physiological adaptations and thus be able to adjust their interventions in order to generate

health gains through the exercises of the Pilates method, allowing a better recovery at physical and psychological levels.

Final thoughts

The analyzed studies corroborate that the Pilates method offers multiple benefits for both physical recovery and emotional well-being of women during postpartum, thus responding to the objective of the review. Pilates is distinguished by its ability to promote efficient physical recovery through strengthening deep muscles and improving posture. In addition, the practice has shown a significant contribution in improving the strength of the abdominal and pelvic floor, crucial factors in preventing problems as common at this stage.

As indicated throughout the work, Pilates not only offers physical benefits but also emotional ones, helping to reduce stress, improve self-esteem and prevent postpartum depression. Its regular practice has shown a positive impact on women's mental health, favoring better adaptation to motherhood and promoting a more positive perception of the body. This integration of physical and emotional aspects makes Pilates an integral tool in maternal care.

Finally, it is important to emphasize the need for standardized protocols in exercise programs to ensure that Pilates is effectively integrated into public health care, maximizing its benefits in the postpartum period.

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 MS: Data storage and analysis, review and
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 AF: Coordination of the study, review and
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