

A Study of Assessment of Quality of Life in Postpartum Women with Low Back Pain Undergoing Physiotherapy Rehabilitation

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Received: 10th Mar, 2026 | Revised: 18th Mar, 2026 | Accepted: 22nd Mar, 2026 | Available Online: 28th Mar, 2026

ABSTRACT

Background- Pregnancy, childbirth, and the postpartum period significantly influence a woman's quality of life (QOL), affecting her physical, emotional, and social well-being. Although pregnancy is a natural physiological process, the transition to motherhood can impact overall health. Evaluating QOL is essential for enhancing the QOL of mothers, children, individuals, and the community, and it plays a critical role in postpartum QOL. Planning for health promotion requires measuring QOL.

Aim of study- To assess QOL and Low back pain in post-partum women when the physiotherapy treatment protocol is administered.

Procedure- This descriptive-analytical study was conducted in the obstetrics ward of

D. Y. Patil Hospital, Kadamwadi, Kolhapur. Participants were screened according to inclusion and exclusion criteria and were informed about the study. A total of 325 postpartum women were selected using a Non-Probability Sampling method, based on slovin's formula. Standardized questionnaires, including the (MPQOL-I) and (MODI) were used for assessment. Pre-assessment was conducted one day after delivery, and post-assessment was done prior to discharge using the same tools.

Outcome measures- Maternal Postpartum Quality of life instrument (MPQOL-I) and Modified Oswestry Disability Index (MODI).

Result- The study demonstrated that physiotherapy significantly improved postpartum QOL and reduced low back pain. It demonstrated the significance of physical therapy for postpartum recovery. Participants showed better overall well-being, decreased musculoskeletal discomfort, and enhanced functional ability following physiotherapy sessions.

Conclusion- The study concluded that physiotherapy was effective in improving postpartum quality of life and significantly reducing disability due to low back pain among the participants.

Keywords –

How to cite this article: Manisha Mali¹ Dr. Namrata Mahesh Bavalekar^{2*} Dr. Umiya Pathan³ Dr. Rama Ramdurgkar⁴. A Study of Assessment of Quality of Life in Postpartum Women with Low Back Pain Undergoing Physiotherapy Rehabilitation. Int J Drug Deliv Technol. 2026;16(82s):1009-1014. DOI: 10.25258/ijddt.16.82s.110.

INTRODUCTION

Pregnancy, childbirth, and the puerperium are critical times that have a significant impact on women's quality of life (QOL) and have an impact on their physical, emotional, and social well-being. The mother must recuperate and adjust to her new roles and obligations during the postpartum phase. Many women experience postpartum problems for an extended period of time, even though puerperal alterations typically go away by six weeks after delivery. Postpartum recuperation is crucial since it impacts the mother's and the baby's quality of life[1].

Most people agree that pregnancy is a normal physiological process. But the quality of moms' lives is significantly affected [2]. Giving birth and raising a new baby is a significant life transition, but it's also a time of vulnerability and many difficulties, such as disturbed sleep and increased psychosocial stress, which put successful emotional and psychological adjustments that guarantee quality of life at risk [3]. HRQoL is a multifaceted indicator of an individual's health. It focuses on

how illnesses affect people physically, emotionally, and socially and takes into consideration their objectives, norms, expectations, and worries. Because HRQoL can assess well-being, the impact of illness, and the cost-effectiveness of therapies, it is becoming increasingly important in the healthcare industry. The healing process is crucial since it affects both the mother's quality of life and the baby's health [4].

Evaluation of quality of life (QOL) will improve the QOL of mothers, children, people, and the community and is crucial for postpartum QOL. QOL is defined by the WHO as a person's assessment of their current state of life. Physical, mental, and social components are all part of QOL. Measuring quality of life (QOL), which encompasses life status, socio-environmental variables, attitudes, interests, individual aspirations, and societal values, is vital to health promotion planning. According to studies, women's health changes throughout the postpartum phase, which is a crucial time in

their lives. It impacts women's physical health problems and may have an effect on their long-term health and quality of life. Some women have postpartum depression, exhaustion, illness, insomnia, breast soreness, physical discomfort, constipation, and sexual issues, all of which are largely caused by the mode of delivery [5]. Clinical and environmental factors, including pain, fatigue, urinary incontinence, pregnancy complications, type of childbirth, postpartum depression status, and sexual dysfunction, as well as inadequate social support, heavy workload, high maternal BMI, and postpartum depression, have been found to negatively affect postpartum women's subjective quality of life.

These factors are significant issues that serve as indicators of the health of both the mother and the child. On the other hand, negative predictors of postpartum QOL include low mother age, cesarean section, poor marital connections, and insufficient postpartum care counseling. Mothers' quality of life may be negatively impacted by inadequate postpartum monitoring[8]. Physical, psychological, relational, and social well-being all have an impact on QOL, which is a multifaceted notion. Fatigue, back discomfort, perineal pain, dyspareunia, hemorrhoids, and urine incontinence are among the physical symptoms that postpartum women describe and are linked to their quality of life. Mothers' roles and duties in caring for their newborns have a significant impact on women's quality of life currently[9].

The fourth stage of labor is frequently used to describe the postpartum phase. It can last up to six months after giving birth and starts after giving birth. Returning to their pre pregnancy condition, women who give birth undergo psychological and physiological changes as well as ongoing health concerns, especially in the initial weeks of the postpartum period. Physical health risks, such as anemia, infections, or difficulties healing wounds, and mental health risks, such as anxiety, sadness, exhaustion, or stress, can result in varying degrees of morbidity during the postpartum period [10]. Women who had vaginal deliveries had higher health-related quality of life than those who had elective or emergency cesarean sections, according to a study on the psychometric assessment of health-related quality of life parameters in women following various delivery methods. When health-related quality of life was compared between three delivery methods (vaginal, elective, and emergency caesarean), it was discovered that patients who had vaginal deliveries scored higher on mean physical health-related QOL than those who had caesarean sections, but the three groups' mean mental health-related QOL scores were similar. On the other hand, other research revealed that cesarean birth is a predictor of worse mental health in postpartum women, in addition to factors including the incidence of pregnancy problems, life stress, and a lack of social support [11].

A woman's physical and mental health are impacted by pregnancy. Pregnant women's quality of life is one of the most crucial issues that has to be addressed. Many factors, including physical activity, physiotherapy, and pelvic and back discomfort, affect women's quality of life at this time. Pregnant women are more prone than non-pregnant women to develop lumbar back discomfort, which is one of the major reasons

adversely influencing their quality of life. The first or second trimester of pregnancy is typically when lower back discomfort initially appears. Additionally, it has been demonstrated that pregnancy affects posture, resulting in an increase in lumbar lordosis and thoracic kyphosis as well as a decline in gait quality and balancing ability, which is linked to changes in the center of gravity and postural alterations.

Sleep disturbances caused by back discomfort can have an impact on quality of life. Pregnancy's effects on women's quality of life are a significant topic of study in medicine, including physical therapy.

Among the things that impact women's life during pregnancy are hormonal changes and physical pain. Factors including the mother's average age, primiparity, early gestational age, lack of financial difficulties, high level of education, work, marriage, and having family and friends all affect a pregnant woman's quality of life [12].

During the postpartum period, women's bodies return to their pre-pregnancy physiological and anatomical states. Women may find it difficult to prioritize and adapt in this new setting because it involves a number of psychosocial shifts and new roles. Sleep disturbance, life reorganization, and physiological changes may also affect the woman's quality of life. Inadequate postpartum adjustment may lead to postpartum issues and a lower quality of life for mothers [14]. The first six months following delivery are known as the postpartum phase. During this time, women go through physiological changes and take on roles and responsibilities they have never had before. One of the most difficult jobs that women meet throughout their life is the aspect of motherhood that they acquire throughout this time. In addition to adjusting to the new tasks and responsibilities, the mother in transition has bodily changes and discomforts toward the conclusion of the nine months [15].

A mother's level of physical activity decreases due to changes in the postpartum period and baby obligations. Regular exercise at this time is believed to speed up the mother's physical recuperation and improve her happiness and quality of life. Engaging in physical exercise during the postpartum period enhances blood circulation, fortifies the muscles of the abdomen and spine, promotes breastfeeding, speeds up uterine recuperation, reduces urogynecological dysfunction, and improves the mental and physical health of the mother. Mothers find it simpler to carry out their everyday tasks because of all these impacts[15]. Activity during the six weeks after giving birth is referred to as postpartum physical activity. These exercises lower the chance of difficulties and guarantee the best possible operation of several body systems. After giving birth, exercising can speed up the healing process, encourage the growth of vital strength, and ease back-pain. Women can improve their physical well-being and speed up their recuperation after giving birth by adding postpartum exercise to their regimen. During the postpartum phase, women are more susceptible to a number of difficulties, such as fatigue, sleep disorders, anxiety, melancholy, sexual problems, and physical limits. Their entire quality of life may be greatly impacted by these problems, which highlights the significance of offering sufficient resources and help to deal with these postpartum challenges. The postpartum period can be very

stressful for women worldwide due to significant life, physical, and emotional changes [16].

The benefits of physical activity for women include improved cardiovascular fitness, decreased body fat, higher bone mineralization, decreased depression, and a decreased risk of colon cancer, hypertension, type 2 diabetes, and osteoporosis fracture. Postpartum physical exercises, such as Kegel's, abdominal, and breathing exercises, are crucial for improving pelvic floor and abdominal muscle tone, bowel and bladder function, and cardiovascular fitness. Postpartum moms can enhance their overall physical health and restore their strength with these workouts. Exercise has become a vital part of postpartum care and a vital aspect of women's lives after giving delivery. After giving birth, women who don't exercise may spend a lot of time in bed, which might result in sedentary lives. This sedentary behavior may result in excessive weight gain, issues with cardiovascular fitness, prolapse of the abdominal and pelvic organs, and overall social disorder. Postpartum physical exercise must be encouraged and promoted in order to reduce these potential health impacts and enhance women's overall wellbeing during the postpartum time [16].

According to the majority of research, at least half of pregnant women have low back and pelvic pain (LBPP). Pelvic pain may worsen during pregnancy, although lumbar discomfort is often stable. The majority of everyday activities are hampered by pelvic pain symptoms, and back pain is a serious issue for one-third of pregnant women. Half a year after birth, the persistence of LBPP during pregnancy ranges from 5% to over 40% [17].

MATERIALS AND METHODOLOGY

An Analytical Descriptive study conducted using Non-Probability Sampling Method Convenience Sampling on Post-Partum Women at D.Y. Patil Medical College Hospital and Research Institute, Kolhapur. For a duration of 6 Months Sample Size – 325 Study subjects were selected according to inclusion and exclusion criteria.

Materials- Data Collection Sheet, Consent Form, Maternal Postpartum Quality of life instrument (MPQOL-I), Modified Oswestry Disability Index (MODI).

Inclusion criteria

Age Group 18-45 years, Postpartum women who had given live birth, Women with Postpartum Low back pain.

Exclusion criteria

Severely ill, Hearing impairments, Experienced severe childbirth complications, Physical limitations preventing physical activity, Mothers of multiples (Twins or Triplets), History of Dystocia/ instrumental delivery, Still birth, Diseased/ Handicapped child, Child with weight of less than 2500 grams, History of general medical conditions, Disabilities.

PROCEDURE

Research will be started after approval from institutional ethical committee. The descriptive analytical study will be conducted in obstetrics ward of D. Y. Patil Hospital, Kadamwadi, Kolhapur, who are diagnosed by certified gynecologist or physiotherapist. Each of the subject will be screened as per inclusion and exclusion criteria and they will be informed about the study and intervention. Also, the purpose of the study will be explained. Before proceeding to intervention, a written consent will be taken from subject. The participants will be

included in the study by using Non-Probability Sampling method. By using the statistical slovin's formula, the sample size was determined of 325 postpartum women. Inclusion criteria were: Age Group 18-45 years, postpartum women who had given live birth and Women with Postpartum Low back pain. Exclusion criteria where: Severely ill, Hearing impairments, Experienced severe childbirth complications, Physical limitations preventing physical activity, Mothers of multiples (Twins or Triplets), History of Dystocia/ instrumental delivery, still birth, Diseased/ Handicapped child, Child with weight of less than 2500 grams, History of general medical conditions, Disabilities.

The study used standardized questionnaires, including the Maternal Postpartum Quality of life instrument (MPQOL-I) and Modified Oswestry Disability Index (MODI). Study participants will be asked to mark the answers on the questionnaire and scales; all the questionnaire were given to each postpartum women the day after the delivery and will be told to answer them for pre assessment and the post assessment will be taken the day before discharge by giving this same questionnaire.

The data collected will be used analyze the quality of life and low back pain in women who will be receiving physiotherapy rehabilitation. It will help to find out how physiotherapy helps to improve quality of life in women after delivery. Statistical analysis will be recorded and the results will be obtained.

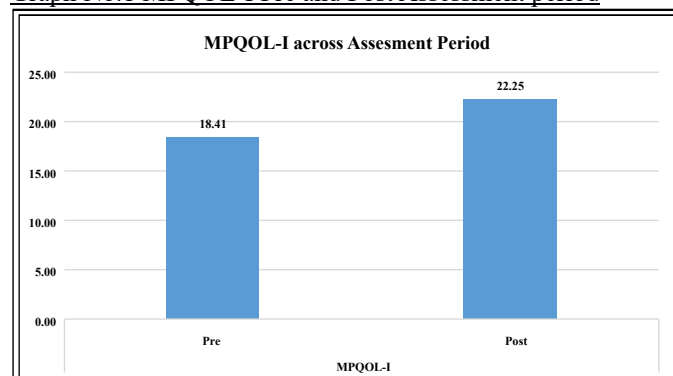
RESULT

The descriptive-analytical study to assess QOL and Low back pain in post-partum women when the physiotherapy treatment protocol is administered revealed that physiotherapy was effective in improving postpartum quality of life and significantly reducing disability due to low back pain among the participants.

Following the intervention, maternal postpartum quality of life significantly improved, and disability scores decreased, according to the statistical analysis.

The results demonstrated how the physiotherapy session improved the participants' general well-being. The overall results of the study demonstrate the significance of physical therapy for postpartum recovery. For postpartum mothers, physiotherapy treatments can greatly lessen musculoskeletal pain, improve functional capacity, and raise general quality of life.

Graph No.1 MPQOL-I Pre and Post Assessment period



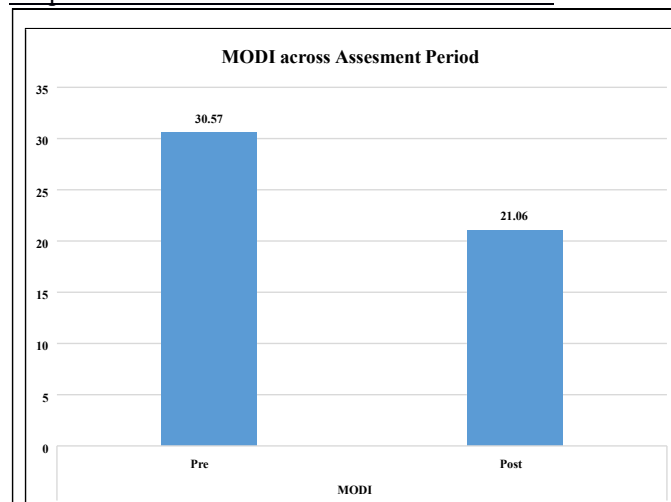
The MPQOL-I (Maternal Postpartum Quality of Life Instrument) ratings for the pre-intervention and post-

intervention assessment periods are displayed in this bar graph. The Pre-assessment mean score is 18.41 and the post-assessment mean score is 22.25.

The improvement in postpartum quality of life for mothers following the intervention is indicated by the increase from 18.41 to 22.25.

The data table shows that this improvement is statistically significant ($p < 0.001$), indicating that the change is unlikely to be the result of chance.

Graph No.2MODI Pre and Post Assessment Period



The MODI (Modified Oswestry Disability Index) scores for the two evaluation periods are displayed in this bar graph: Pre and post the intervention. The Pre-assessment mean score is 30.57 and the post-assessment mean score is 21.06

The decrease from 30.57 to 21.06 shows that participants' low back pain or impairment decreased following the intervention. The statistical table indicates that this shift is highly statistically significant ($p < 0.001$), indicating that the decrease is unlikely to be the result of chance.

Table No.1 Comparison of pre-assessment and post-assessment scores for two outcome measures: MPQOL-I (Maternal Postpartum Quality of Life Instrument) and MODI (Modified Oswestry Disability Index).

Method	Assessment period	Mean	Std. Deviation	p-value
MPQOL-I	Pre	18.41	3.8516	<0.001*
	Post	22.25	2.877	
MODI	Pre	30.57	9.32	<0.001*
	Post	21.06	6.745	

Mothers' postpartum quality of life is assessed using the MPQOL-I. Better quality of life is indicated by higher ratings. Prior to the intervention, the individuals' baseline postpartum quality of life score was 18.41 with a standard deviation of 3.8516. The mean score increased to 22.25 with a 2.877 standard deviation following the intervention. The postpartum quality of life increased following the intervention, as showed by the

mean score rising from 18.41 to 22.25. Following the intervention, participants' replies became more consistent, as seen by the decrease in standard deviation. A p-value of less than 0.001 indicates a high level of statistical significance. This indicates that the change in MPQOL-I ratings is highly unlikely to be the result of chance and implies that the intervention significantly improved postpartum quality of life.

The degree of impairment brought on by low back pain is evaluated using MODI. Greater disability is indicated by higher scores, while less disability is shown by lower scores. Prior to the intervention, participants' mean score was 30.57 with a standard deviation of 9.32, suggesting a moderate level of impairment. The mean score dropped to 21.06 with a standard deviation of 6.745 following the intervention. After the intervention, the mean score dropped from 30.57 to 21.06, indicating a decrease in low back pain-related impairment. The reduction in standard deviation implies that following the intervention, participant variance in impairment levels also became more consistent. The p-value is < 0.001 , which indicates a highly significant reduction in disability following the intervention.

Table No.2 Age of participants

	Minimum	Maximum	Mean	Std. Deviation
Age	19	40	25.41	3.901

This table presents the descriptive statistics of the age of participants included in the study, which helps to understand the demographic characteristics of the sample used for assessing MPQOL-I and MODI outcomes. The study's youngest participant was 19 years old. Additionally, the oldest participant was forty years old. The average age of 25.41 years indicates that most participants were in their mid-twenties, which is a typical reproductive age range for postpartum moms. The standard deviation of 3.901 indicates that the participants' ages were somewhat scattered about the mean, even if the majority of them were close to the average age. The results indicate that the majority of participants were in the young reproductive age range (19–40 years), with the majority of them grouped around 25.

This age group is particularly significant since postpartum women in their twenties are more likely to experience physical strain, back pain, and lifestyle changes after giving birth, all of which may have an effect on their level of disability and quality of life.

DISCUSSION

The present study aims to assess Quality of Life in Postpartum Women with Low Back Pain Undergoing Physiotherapy Rehabilitation. A total of 325 postpartum women were screened during the research period. The study used standardised questionnaires, including the Maternal Postpartum Quality of life instrument (MPQOL-I) and Modified Oswestry Disability Index (MODI).

The current study's objective was to evaluate the impact of PT therapies on the disability and quality of life of postpartum mothers. The results of the trial demonstrated that the intervention greatly enhanced quality of life and decreased

disability. The mean score of postpartum quality of life increased from 18.409 in the pre-test to 22.247 in the post-test, indicating that the physiotherapy intervention had a positive effect on the participants' overall well-being. workouts that help restore physical strength and functional capacity after delivery, such as postnatal workouts, posture correction, and strengthening exercises, may improve quality of life. The improvement was measured using the Maternal Postpartum Quality of Life Instrument (MAPP-QOL), which assesses the social, emotional, and physical aspects of maternal well-being. Similarly, the mean disability score for postpartum moms decreased from 30.57 in the pre-test to 21.06 in the post-test, suggesting a notable reduction in back pain and impairment. This reduction in lower back discomfort could be attributed to physiotherapy exercises that improve spinal stability, muscle strength, and flexibility. The degree of disability was determined using the Modified Oswestry Disability Index (MODI), which measures functional limitations caused by back pain. With a p-value of less than 0.001, the statistical analysis showed a very statistically significant difference between the pre-test and post-test scores. This suggests that rather than being the product of chance, the improvement in quality of life and the decrease in impairment were connected to the physiotherapy intervention. The study's overall findings highlight the importance of physical therapy for postpartum recuperation. Physiotherapy therapies can significantly reduce musculoskeletal discomfort, enhance functional ability, and improve overall quality of life for postpartum mothers.

Previous literature by Tahereh Mokhtaryan-Gilani found that it is necessary to study the predictors of life quality in the early postpartum period. The study aimed to evaluate the predictors of the quality of life (QOL) in the postpartum period. Data were collected using a demographic and obstetric questionnaire and maternal postpartum QOL (MAPP-QOL), data was analyzed using SPSS. The result showed these as a valid and trustworthy tool for evaluating postpartum quality of life is the sixteen-item MPQOL-I. It can be used for the early detection of reduced postpartum quality of life and contains items from many elements of postpartum quality of life. Physiological health is improved through reduced complications, which results in improved physical recovery, energy levels, and functional capacity, while postpartum quality of life is improved by improved socioeconomic status and education. The result showed that the postpartum QOL had a significant relationship with income status, number of children, mother's education and maternal complications.

Another study conducted by Nourossadat Kariman; Hamid Sharif Nia to develop the Maternal postpartum quality of life instrument (MPQOL-I) and assess its psychometric properties. The MPQOL-I is a valid, reliable, and useful tool for evaluating postpartum quality of life in a variety of ways, according to the study's findings. It shows that social support, mother-infant bonding, nursing, sexual health, and adjusting to the role of mother have a greater impact on postpartum quality of life than only physical or financial circumstances. The test is useful for identifying maternal needs and directing interventions in clinical and research settings. In general, postpartum

60 women's psychological and physical health can be improved by strengthening support networks and maternity care procedures. The results of the confirmatory factor analysis suggested the goodness-of-fit indices was acceptable.

Previous study conducted by Mayank Kumar states that Physiotherapy has become a crucial intervention for the management of postpartum low back pain, a common ailment that greatly affects the quality of life for many women following childbirth. According to the review, physiotherapy improved physical performance and quality of life while considerably lowering pain intensity and impairment. This was especially true for stabilizing exercises and core-strengthening programs. Better functional recovery resulted from physiotherapy's improvements in muscle strength, lumbopelvic stability, neuromuscular control, posture, and pain modulation. Improved results were obtained using multimodal approaches that included ergonomic guidance, patient education, and manual therapy. The study came to the conclusion that exercise-based regimens are crucial to the healing process and that physiotherapy is an effective treatment for postpartum low back pain.

Another study by Halil. Bulguroglu aimed to understand how women's physical activity levels, functional levels, and quality of life (QOL) are affected in the postpartum period and to emphasize the importance of physical activity levels in the postpartum period. The results show that postpartum recovery, including physical functionality and general well-being, is adversely impacted by decreased physical activity. Women who were less active had worse health results, whereas those who were more active had better mental and physiological recuperation. This bolsters earlier research emphasizing the value of exercise during the postpartum phase. The study comes to the conclusion that while increasing exercise levels can greatly enhance postpartum recovery and general health, inadequate physical activity results in a decline in quality of life and functional abilities.

CONCLUSION

This study aimed to evaluate the effects of physical therapy on postpartum low back pain and quality of life of postpartum mothers. It shown that physiotherapy improved postpartum moms' quality of life and lessened their level of disability. The findings showed that the participants' overall wellbeing was enhanced by the physiotherapy intervention. The study's overall findings highlight the importance of physical therapy for postpartum recuperation. Physiotherapy treatments can significantly reduce musculoskeletal discomfort, boost functional ability, and enhance overall quality of life for postpartum mothers.

CONFLICT OF INTEREST

The authors declare no potential conflicts of interest with respect to research, authorship and /or publication of this article.

REFERENCES

1. Esra Keles, Kaya L, Neşe Yakşi, Kaya Z. Effect of mode of delivery on postpartum healthrelated quality of life. *Revista da Associação Médica Brasileira*. 2024 Jan 1; 70(4).
2. A. Boutib, Samia Chergaoui, Azizi A, El Madani Saad, Abderraouf Hilali, Ibtissam Youlyouz Marfak, et al.

Health-related quality of life during three trimesters of pregnancy in Morocco: cross-sectional pilot study. 2023 Mar 1 [cited 2023 Jun 13]; 57:101837–7.

3. Valla L, Helseth S, Småstuen MC, Misvær N, Andenæs R. Factors associated with maternal overall quality of life six months postpartum: a cross-sectional study from The Norwegian Mother, Father and Child Cohort Study. *BMC Pregnancy and Childbirth*. 2022 Jan 3; 22(1).

4. Evans K, Fraser H, Uthman O, Osokogu O, Johnson S, Al-Khudairy L. The effect of mode of delivery on health-related quality-of-life in mothers: a systematic review and meta-analysis. *BMC Pregnancy and Childbirth*. 2022 Feb 22; 22(1).

5. Zahra Kavosi, Keshtkaran A, Fatemeh Setoodehzadeh, Kasraeian M, Khammarnia M, Marzieh Eslahi. A Comparison of Mothers' Quality of Life after Normal Vaginal, Cesarean, and Water Birth Deliveries. *PubMed*. 2015 Jul 1; 3(3):198–204.

6. Davis DL, Wu C, Brown WJ, Nohr EA. Parity and mode of birth and their relationships with quality of life: A longitudinal study. *PLoS ONE [Internet]*. 2022 Sep 9 [cited 2025 Feb 13];17(9): e0273366–6.

7. Al Rehaili BO, Al-Raddadi R, ALEnezi NK, ALYami AH. Postpartum quality of life and associated factors: a cross-sectional study. *Quality of Life Research*. 2023 Apr 10;

8. Mokhtaryan-Gilani T, Kariman N, Sharif Nia H, Ahmadi Doulabi M, Nasiri M, Mokhtarian

Gilani T. Evaluation of the Predictors of the Quality of Life in the Postpartum Period: A Cross-Sectional Study. *Iranian Journal of Public Health*. 2022 Jun 15;

9. Jeong YJ, Nho JH, Kim HY, Kim JY. Factors Influencing Quality of Life in Early Postpartum Women. *International Journal of Environmental Research and Public Health*. 2021 Mar 14; 18(6):2988.

10. Kohler S, Sidney Annerstedt K, Diwan V, Lindholm L, Randive B, Vora K, et al. Postpartum quality of life in Indian women after vaginal birth and cesarean section: a pilot study using the EQ-5D-5L descriptive system. *BMC Pregnancy and Childbirth [Internet]*. 2018Oct29[cited2019Oct13];18(1).

11. Torkan B, Parsay S, Lamyian M, Kazemnejad A, Montazeri A. Postnatal quality of life in women after normal vaginal delivery and cesarean section. *BMC Pregnancy and Childbirth*. 2009 Jan 30; 9(1).

12. Małgorzata Wójcik, Bartosz Aniśko, Siatkowski I. Quality of life in women with normal pregnancy. *Scientific Reports [Internet]*. 2024 May 30;14(1).

13. Liga AD, Jabir YN, Assefa S, Debelew GT, Worku BT. Identifying associated factors in relation to health-related quality of life among postpartum women in Jimma town: A community-based cross-sectional study. *Heliyon*. 2024 Apr; 10(8): e29328.

14. Mokhtaryan-Gilani T, Kariman N, Nia HS, Doulabi MA, Nasiri M. The Maternal Postpartum Quality of Life Instrument (MPQOL-I): development and psychometric

evaluation in an exploratory sequential mixed-method study. *BMC Pregnancy and Childbirth*. 2022 Jul 19; 22(1).

15. Bulguroglu HI, Merve Bulguroglu, P. T. Cansu Gevrek. Investigation of the effects of physical activity level on functionality level and quality of life in the postpartum period. *Journal of Health, Population and Nutrition*. 2023 Mar 30; 42(1).

16. Yadeta T, Belema D, Ahmad S, Sirage N, Ali AS, Ali K, et al. Assessment of post-partum physical exercise practice and its associated factors among women in postpartum period, in West Wollega zone, Oromia, Ethiopia. *Frontiers in Public Health*. 2025 Jan 23; 13.

17. Mogren IM. Does caesarean section negatively influence the post-partum prognosis of low back pain and pelvic pain during pregnancy? *European Spine Journal*. 2006 May 5; 16(1):115–21.

18. Boutib A, Chergaoui S, Azizi A, Achak D, Saad EM, Hilali A, et al. Health-related quality of life among Moroccan women after vaginal birth and cesarean section: Cross-sectional study. *Heliyon*. 2024 Jun; 10(11): e32276.

19. Ng C, Szücs A, Goh LH. Common maternal health problems and their correlates in early postpartum mothers: Women's Health (17455057). *Women's Health (17455057) [Internet]*. 2024 Jan 29 [cited 2024 Mar 11];1–12.

20. Kumar M, Danishta x. Postpartum Physiotherapy Rehabilitation for Low Back Pain: A Systematic Review. *International Journal of Science and Research (IJSR) [Internet]*. 2025 Jan 27;14(1):758–60.