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Original Article

Burden and Functional Impact of Postpartum Low Back Pain Among Women in Swat, Pakistan: A Cross-Sectional Study

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ABSTRACT

Background: Postpartum low back pain is a common musculoskeletal condition that may impair maternal mobility, infant care, daily function, and quality of life, yet evidence from low-resource settings remains limited. Objective: To determine the prevalence of postpartum low back pain and describe its demographic, functional, postpartum-duration, and treatment-related patterns among women attending a tertiary care hospital in Swat, Pakistan. Methods: A hospital-based cross-sectional observational study was conducted among 377 postpartum women at Saidu Group of Teaching Hospital, Swat, Pakistan. Participants were recruited using random sampling and interviewed using a structured questionnaire assessing demographic characteristics, postpartum duration, pain presence, pain persistence, functional impact, treatment-seeking behavior, treatment type, and perceived improvement. Pain severity was assessed using the Numeric Pain Rating Scale. Data were analyzed descriptively using SPSS version 26.0. Results: The prevalence of postpartum low back pain was 87.0% (328/377; 95% CI: 83.2–90.1). Most participants were aged 18–30 years (78.2%), educated (57.3%), and unemployed (73.7%). Pain was most frequently reported at 6–12 months postpartum (30.8%), and 196 women (52.0%) reported pain beyond six months. Functional limitation was slight in 41.4%, moderate in 34.7%, and severe in 8.0% of participants. Although 78.0% sought treatment, medication was the predominant approach, while physical therapy was reported by only 9.8%. Conclusion: Postpartum low back pain was highly prevalent and frequently persistent beyond six months, highlighting the need for routine musculoskeletal screening, maternal education, and physiotherapy-based postpartum rehabilitation. Keywords: Postpartum low back pain, prevalence, functional limitation, physiotherapy, maternal health, Pakistan.

INTRODUCTION

Postpartum low back pain (PLBP) is a common musculoskeletal condition affecting women after childbirth and represents an important but often under-recognized contributor to maternal morbidity. It is generally described as pain localized between the lower costal margin and the gluteal folds occurring after delivery, with or without radiation to the lower limbs (1). Although low back pain is widely recognized as a leading cause of disability globally, postpartum presentations require specific clinical attention because they occur during a period of major physiological recovery, infant-care demands, breastfeeding-related postural stress, and gradual return to domestic or occupational roles (2,

3). Reported prevalence estimates vary substantially across settings because studies differ in case definition, timing of assessment, sampling strategy, and measurement tools, with pregnancy-related and postpartum low back pain estimates ranging widely in international literature (4). While symptoms resolve in many women during the early postpartum months, a clinically important proportion continues to experience persistent pain beyond six months, increasing the risk of functional limitation, reduced quality of life, and prolonged healthcare need (5, 6).

The development and persistence of PLBP are multifactorial. Pregnancy-related hormonal changes, including increased relaxin and progesterone activity, may contribute to ligamentous laxity and pelvic instability, while gestational weight gain and anterior displacement of the center of gravity increase mechanical loading across the lumbopelvic region (7, 8). After delivery, incomplete recovery of abdominal, pelvic floor, and spinal stabilizing musculature may further compromise load transfer and contribute to pain persistence (9). These biological factors interact with postpartum behaviors such as prolonged breastfeeding in unsupported positions, repetitive infant lifting, poor sleep, reduced physical activity, and limited access to rehabilitation services (10). Therefore, PLBP should not be viewed only as a transient musculoskeletal complaint but as a condition shaped by biomechanical, behavioral, socioeconomic, and healthcare-access factors.

Several demographic and clinical characteristics have been associated with postpartum low back and pelvic girdle pain, including younger maternal age, higher body mass index, multiparity, previous low back pain, mode of delivery, reduced physical activity, and psychosocial distress (11, 12). Socioeconomic determinants such as lower educational status and unemployment may further influence symptom reporting and functional consequences through reduced health literacy, delayed care-seeking, limited ergonomic awareness, and restricted access to physiotherapy services (13). In low-resource settings, these factors may be amplified by cultural expectations surrounding postpartum domestic work, limited structured rehabilitation pathways, and reliance on medication-based symptomatic management rather than functional recovery programs. The functional impact of PLBP is particularly relevant because even mild-to-moderate pain can interfere with mobility, childcare, household activities, sleep, and return to work, thereby extending its burden beyond pain intensity alone (14, 15).

In Pakistan, evidence regarding postpartum low back pain remains limited, particularly from tertiary care settings serving mixed rural and urban populations. Most local musculoskeletal research has focused on general low back pain, pregnancy-related discomfort, or occupational groups, while postpartum-specific data remain scarce. This gap restricts the ability of clinicians and policymakers to estimate local burden, identify vulnerable groups, and develop context-specific rehabilitation strategies. Region-specific evidence is especially important in areas such as Swat, where maternal health services may not routinely include musculoskeletal screening, physiotherapy referral, or postpartum ergonomic education. Therefore, the present study aimed to determine the prevalence of postpartum low back pain and describe its demographic, postpartum-duration, functional-impact, and treatment-related patterns among women attending a tertiary care hospital in Swat, Pakistan.

MATERIALS AND METHODS

A hospital-based cross-sectional observational study was conducted among postpartum women attending Saidu Group of Teaching Hospital, Swat, Pakistan, a tertiary care facility serving women from both urban and rural areas. The cross-sectional design was selected because the study aimed to estimate the prevalence of postpartum low back pain and describe its distribution across demographic and clinical characteristics at a defined point in postpartum care. The study population comprised women aged 18 years or older who were in the postpartum period after childbirth, were able to understand and respond to the study questionnaire, and provided informed consent for participation. Women were excluded if they were currently pregnant, had a history of spinal surgery, had experienced recent major trauma, or

had a known chronic musculoskeletal or systemic condition independently affecting the spine, as these conditions could confound the assessment of postpartum-related low back pain.

A total sample of 377 postpartum women was calculated using the Raosoft sample size calculator, based on an estimated population size of approximately 20,000, a 95% confidence level, and a 5% margin of error. Participants were recruited using a random sampling approach from eligible postpartum women attending outpatient and inpatient departments during the data collection period. Eligible participants were approached, informed about the study purpose and procedures, and enrolled after written informed consent. Data were collected through face-to-face interviews by trained data collectors to improve response completeness, reduce ambiguity, and maintain consistency in questionnaire administration.

Data were collected using a structured questionnaire developed from published literature on postpartum low back pain and musculoskeletal epidemiology. The questionnaire included demographic information, postpartum duration, presence of low back pain, pain persistence since childbirth, pain severity, perceived functional impact, treatment-seeking behavior, type of treatment received, and self-reported improvement after treatment. Postpartum low back pain was operationally defined as self-reported pain located between the lower rib margins and gluteal folds after childbirth, with or without radiation to the lower limbs, lasting for at least one day. Pain severity was assessed using the Numeric Pain Rating Scale, an established measure for clinical pain assessment, where participants reported pain intensity on a numerical scale from 0 to 10 (16). Functional impact was recorded using categorized responses reflecting the extent to which pain affected daily activities, including slight, moderate, and severe limitation. Postpartum duration was categorized as pain within the first three months, three to six months, six to twelve months, and beyond twelve months postpartum.

The primary outcome variable was the presence of postpartum low back pain. Independent variables included age group, educational status, employment status, and postpartum duration. Additional descriptive outcomes included pain severity, pain persistence since childbirth, functional limitation, treatment-seeking behavior, treatment type, and perceived improvement. To reduce selection bias, a random sampling strategy was used among eligible women attending the study setting. Information bias was minimized through structured face-to-face interviews and use of a standardized pain scale. Confounding was addressed at the design stage by excluding women with major spinal, traumatic, or systemic conditions that could independently cause low back pain. Key demographic and postpartum-related variables were recorded to permit interpretation of distribution patterns across clinically relevant subgroups.

Data were entered into Microsoft Excel and analyzed using SPSS version 26.0. Descriptive statistics were used to summarize participant characteristics and clinical variables, including frequencies and percentages for categorical variables. The prevalence of postpartum low back pain was calculated as the proportion of participants reporting low back pain after childbirth among the total study sample. Pain severity, postpartum duration, functional limitation, treatment-seeking behavior, treatment type, and improvement status were summarized using frequency distributions. Associations between demographic and postpartum-related characteristics and PLBP were interpreted descriptively from observed distribution patterns; therefore, causal or predictive conclusions were avoided. Data were reviewed for completeness and consistency before analysis, and all reported percentages were calculated using clearly defined denominators.

Ethical principles were followed throughout the study. Participants were informed about the study purpose, voluntary nature of participation, confidentiality of responses, and their right to withdraw at any stage. Written informed consent was obtained before data collection. No personal identifiers were recorded, and collected data were used only for research purposes. The study was conducted in accordance with standard ethical requirements for human-subject observational research.

RESULTS

A total of 377 postpartum women were included in the final analysis. Of these, 328 participants reported low back pain after childbirth, giving an overall prevalence of postpartum low back pain of 87.0% (95% CI: 83.2–90.1), while 49 participants (13.0%) reported no postpartum low back pain.

Table 1. Demographic Characteristics of Study Participants (n = 377)

Variable	Category	Frequency (n)	Percentage (%)
Age group	18–30 years	295	78.2
	31–40 years	68	18.0
	41–50 years	14	3.7
Education	Educated	216	57.3
	Uneducated	161	42.7
Employment status	Employed	99	26.3
	Unemployed	278	73.7

Most participants were aged 18–30 years (78.2%), followed by 31–40 years (18.0%) and 41–50 years (3.7%). More than half of the participants were educated (57.3%), while 42.7% were uneducated. Most women were unemployed (73.7%), indicating that the study sample predominantly comprised non-working postpartum women.

Table 2. Prevalence of Postpartum Low Back Pain Among Participants

Outcome	Frequency (n)	Percentage (%)	95% CI
With postpartum low back pain	328	87.0	83.2–90.1
Without postpartum low back pain	49	13.0	9.9–16.8

Postpartum low back pain was reported by 328 of 377 women, indicating that nearly nine out of every ten participants experienced low back pain after childbirth. The narrow confidence interval supports the precision of the prevalence estimate within this hospital-based sample.

Table 3. Postpartum Duration and Pain Persistence

Variable	Category	Frequency (n)	Percentage (%)
Postpartum duration	First 3 months	73	19.4
	3–6 months	108	28.6
	6–12 months	116	30.8
	Beyond 12 months	80	21.2
Pain since last childbirth	Yes	289	76.7
	No	88	23.3

Pain was most frequently reported in the 6–12 month postpartum period (30.8%), followed by 3–6 months (28.6%), beyond 12 months (21.2%), and the first 3 months postpartum (19.4%). Overall, 196 participants (52.0%) reported pain beyond six months postpartum, suggesting that postpartum low back pain was frequently persistent rather than limited to the immediate postnatal period. In addition, 289 women (76.7%) reported pain since their last childbirth.

Table 4. Functional Impact of Postpartum Low Back Pain

Functional Impact Category	Frequency (n)	Percentage (%)
Not at all	60	15.9
Slightly	156	41.4
Moderately	131	34.7
Severely	30	8.0

Functional limitation was common among participants. Slight limitation was reported by 156 women (41.4%), moderate limitation by 131 women (34.7%), and severe limitation by 30 women (8.0%). Overall, 317 participants (84.1%) reported some degree of functional limitation, indicating that postpartum low back pain affected daily activities in a clinically meaningful proportion of women.

Table 5. Treatment-Seeking Behavior, Treatment Pattern, and Reported Improvement

Variable	Category	Frequency (n)	Percentage (%)
Sought treatment	Yes	294	78.0
	No	83	22.0
Type of treatment reported	Medication	250	66.3
	Physical therapy	37	9.8
	Other treatment	82	21.8
Reported improvement	Significant improvement	53	14.1
	Slight improvement	187	49.6
	No improvement	129	34.2
	Worse	8	2.1

Most participants sought treatment for postpartum low back pain (78.0%). Medication was the most frequently reported treatment approach (66.3%), whereas physical therapy was reported by only 9.8% of participants. Regarding perceived improvement, 14.1% reported significant improvement, 49.6% reported slight improvement, 34.2% reported no improvement, and 2.1% reported worsening symptoms. These findings indicate that although treatment-seeking was common, substantial residual symptoms persistd, and physiotherapy-based care appeared underutilized in this postpartum population.

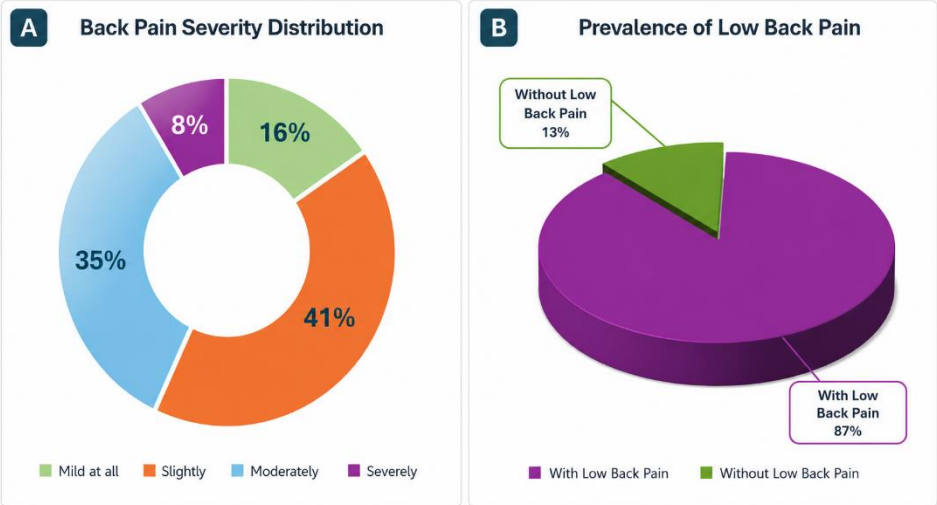

Figure 1. Prevalence and Functional Impact of Postpartum Low Back Pain Among Postpartum Women.

The figure 1 illustrates the overall prevalence of postpartum low back pain and its associated functional impact among postpartum women included in the study. The prevalence panel demonstrates that 87% of participants reported postpartum low back pain, while 13% reported no pain. The functional impact panel shows that slight functional limitation was the most frequently reported outcome (41%), followed by moderate limitation (35%), no significant limitation (16%), and severe limitation (8%). The combined panel figure demonstrates both the substantial burden and functional consequences of postpartum low back pain within the study population.

The high prevalence of pain, together with the predominance of slight-to-moderate activity limitation, suggests that postpartum low back pain remains clinically significant beyond transient postpartum discomfort. These findings emphasize the importance of early postpartum musculoskeletal assessment, ergonomic education, and physiotherapy-based rehabilitation strategies to reduce long-term functional impairment among postpartum women.

The figure 2 demonstrates the distribution of postpartum low back pain across different postpartum durations, showing the highest burden during the 6–12 month period (30.8%), followed by 3–6 months (28.6%). More than half of the participants, 196/377 (52.0%), reported persistent pain beyond six months postpartum, indicating a considerable long-term postpartum musculoskeletal burden. The distribution pattern illustrates that postpartum low back pain was not confined to the immediate recovery phase and remained prevalent well beyond early postpartum months.

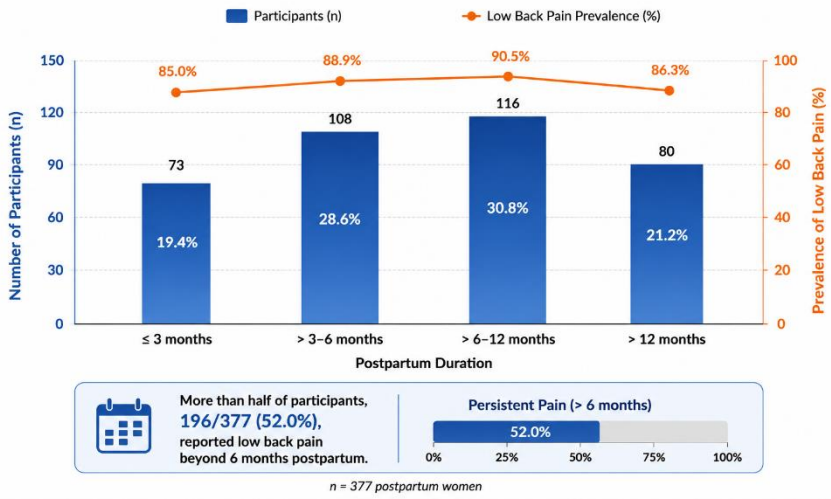

Figure 2. Postpartum Duration Profile of Low Back Pain Burden Among Postpartum Women.

Pain prevalence increased from 85.0% during the first three months postpartum to 90.5% in the 6–12-month category before slightly declining after 12 months (86.3%). These findings suggest a clinically important persistence of postpartum musculoskeletal symptoms, emphasizing the need for extended postpartum rehabilitation and physiotherapy-focused follow-up strategies.

DISCUSSION

This study found a high prevalence of postpartum low back pain among women attending a tertiary care hospital in Swat, Pakistan, with 87.0% of participants reporting low back pain after childbirth. This finding indicates a substantial postpartum musculoskeletal burden in the study population and is higher than many prevalence estimates reported internationally, where postpartum and pregnancy-related low back pain vary considerably according to study design, population characteristics, case definition, and timing of assessment (1, 4, 11). The high prevalence observed in this study should therefore be interpreted in light of the hospital-based setting, the inclusion of women at different postpartum stages, and the likelihood that women attending healthcare facilities may have greater symptom burden than community-based samples.

The distribution of pain across postpartum duration categories suggests that low back pain was not limited to the immediate postnatal period. The highest proportion of participants was observed in the 6–12 month postpartum category, and more than half of the women reported pain beyond six months postpartum. This pattern is clinically important because persistent postpartum pain may reflect incomplete recovery of lumbopelvic stability, ongoing caregiving-related mechanical stress, reduced participation in structured exercise, and limited access to rehabilitation services (7, 9, 13). Previous evidence has shown that pregnancy-related lumbopelvic pain may persist in a meaningful proportion of women after delivery, particularly when early symptoms are not addressed through appropriate education, activity modification, and physiotherapy-based management (11, 13).

Functional limitation was another important finding. Although most women reported slight or moderate limitation, a notable proportion experienced severe restriction in daily activities. This is relevant because even moderate postpartum low back pain can interfere with infant care, breastfeeding posture, mobility, domestic work, sleep quality, and return to occupational roles. The findings support the view that postpartum low back pain should not be treated only as a transient discomfort but as a condition with functional and social consequences, particularly in settings where women may resume household responsibilities soon after childbirth. The functional burden observed in this study is consistent with literature emphasizing that low back pain contributes substantially to disability and reduced quality of life across reproductive-age populations (2, 14, 18).

Treatment-seeking behavior was common, with more than three-quarters of participants reporting that they sought treatment. However, medication was the most frequently reported treatment approach, while physical therapy was used by a comparatively small proportion of women. This pattern suggests a potential gap between symptom burden and access to rehabilitation-oriented care. Medication may provide short-term symptomatic relief, but it does not directly address postural dysfunction, impaired core stabilization, pelvic floor weakness, or caregiving-related ergonomic stressors that may contribute to persistent postpartum pain. Evidence supports physiotherapy interventions, including education, posture correction, pelvic floor rehabilitation, and stabilization exercises, as clinically relevant components of postpartum musculoskeletal care (13).

The findings also suggest that postpartum musculoskeletal screening should be integrated into routine maternal health services. In many low-resource settings, postnatal care focuses primarily on obstetric recovery and infant health, while musculoskeletal symptoms receive less systematic attention. Early identification of low back pain, counseling on breastfeeding and infant-lifting ergonomics, referral to physiotherapy, and home-based exercise education may help reduce persistent symptoms and functional limitation. However, because this study was cross-sectional and primarily descriptive, the observed patterns should not be interpreted as causal relationships. Future studies should use longitudinal designs, validated disability instruments, and multivariable analysis to identify independent predictors of persistent postpartum low back pain and to evaluate the effectiveness of structured rehabilitation interventions (19,20).

CONCLUSION

Postpartum low back pain was highly prevalent among women attending a tertiary care hospital in Swat, Pakistan, affecting nearly nine out of ten participants. The burden was not limited to the early postpartum period, as more than half of the participants reported pain beyond six months postpartum, and many experienced slight-to-moderate functional limitation in daily activities. Treatment-seeking was common, but reliance on medication and limited use of physiotherapy indicate an important gap in postpartum rehabilitation care. These findings support the need for routine postpartum musculoskeletal screening, early ergonomic education, and accessible physiotherapy-based rehabilitation programs to reduce persistent pain and functional disability among postpartum women.

REFERENCES

1. Miladi S, Makhlouf Y, Boussaa H, Abdelghani KB, Fazaa A, Laatar A. Prevalence and associated factors for persistent low back pain in the postpartum period. La Tunisie Medicale. 2023;101(9):688.

2. Wu A, March L, Zheng X, Huang J, Wang X, Zhao J, et al. Global low back pain prevalence and years lived with disability from 1990 to 2017: estimates from the Global Burden of Disease Study 2017. Ann Transl Med. 2020;8(6):299.

3. Awe KA. Burden of back pain among postpartum women in Canada: a mixed methods study of the prevalence, risk factors, comorbidities and lived experiences. Saskatoon: University of Saskatchewan; 2022.

4. Salari N, Mohammadi A, Hemmati M, Hasheminezhad R, Kani S, Shohaimi S, et al. The global prevalence of low back pain in pregnancy: a comprehensive systematic review and meta-analysis. BMC Pregnancy Childbirth. 2023;23(1):830.

5. Pregnancy-related pelvic girdle pain.

6. Wahid E, Ullah K, Khalil S, Khan MS, Raja AJ. Immediate effect of sustained natural apophyseal glides on prolapsed intervertebral disc in patients with low back pain: a pre-post experimental study. Insights J Health Rehabil. 2025;3(4):362-8.

7. Gutke A, Östgaard HC, Öberg B. Predicting persistent pregnancy-related low back pain. Spine. 2008;33(12):E386-93.

8. Wahid E, Ahmad S, Khan MS, Bibi N, Humayoon N, Khan M, et al. Epidemiological insights into work-related low back pain among industrial laborers of Khyber Pakhtunkhwa Pakistan. Healer J Physiother Rehabil Sci. 2025;5(2):543-50.

9. Berber MA, Satılmış İG. Characteristics of low back pain in pregnancy, risk factors, and its effects on quality of life. Pain Manag Nurs. 2020;21(6):579-86.

10. Van Ha AV, Zhao Y, Pham NM, Nguyen CL, Chu TK, Binns CW, et al. Physical activity and sedentary behaviour during pregnancy are associated with gestational weight gain in Vietnamese women. Asia Pac J Clin Nutr. 2020;29(1):136-43.

11. Wiezer M, Hage-Fransen M, Otto A, Wieffer-Platvoet M, Slotman M, Nijhuis-Van der Sanden M, et al. Risk factors for pelvic girdle pain postpartum and pregnancy-related low back pain postpartum: a systematic review and meta-analysis. Musculoskelet Sci Pract. 2020;48:102154.

12. Dionne CE, Dunn KM, Croft PR. Does back pain prevalence really decrease with increasing age? A systematic review. Age Ageing. 2006;35(3):229-34.

13. Stuge B, Hilde G, Vøllestad N. Physical therapy for pregnancy-related low back and pelvic pain: a systematic review. Acta Obstet Gynecol Scand. 2003;82(11):983-90.

14. Iqbal M, Sial A. Knowledge, Health Practices and Policies for Hepatitis for Midwifery and Nurses in Allied and District Hospital Faisalabad. Journal of Health and Rehabilitation Research. 2023 Dec 3;3(2):286-92.

15. Iqbal M, Sial A. Early Child Marriages, Unintended Pregnancies, and its impact on the Health of Young Girls in South Punjab. Journal of Health and Rehabilitation Research. 2023 Dec 3;3(2):272-9.

16. Long G, Yao ZY, Na Y, Ping Y, Wei S, Mingsheng T. Different types of low back pain in relation to pre- and post-natal maternal depressive symptoms. BMC Pregnancy Childbirth. 2020;20(1):551.

17. Van Ha AV, Zhao Y, Pham NM, Nguyen CL, Nguyen PTH, Chu TK, et al. Postpartum weight retention in relation to gestational weight gain and pre-pregnancy body mass index: a prospective cohort study in Vietnam. Obes Res Clin Pract. 2019;13(2):143-9.

18. Abdullah S, Haleem A, Nisar A. Low back pain among recreational gym weightlifters: prevalence, severity, and associated factors.

19. Hawker GA, Mian S, Kendzerska T, French M. Measures of adult pain: visual analog scale for pain, numeric rating scale for pain, McGill pain questionnaire, short-form McGill pain questionnaire, chronic pain grade scale, short form-36 bodily pain scale, and measure of intermittent and constant osteoarthritis pain. Arthritis Care Res. 2011;63 Suppl 11:S240-52.

20. Roland M, Fairbank J. The Roland-Morris Disability Questionnaire and the Oswestry Disability Questionnaire. Spine. 2000;25(24):3115-24.