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Editorial

Musculoskeletal Pain in Women: An Underrecognized Opportunity for Integrative and Function-Oriented Care

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Musculoskeletal pain is common among women during midlife and after menopause, yet it does not always receive the same attention as other concerns associated with this stage of life. Joint pain, muscle pain, back pain, and other musculoskeletal symptoms may coexist with changes in sleep, weight, physical activity, and overall health. Focusing only on the anatomical site of pain may therefore provide an incomplete picture of what a woman is experiencing.

The prevalence alone warrants attention. A 2020 systematic review and meta-analysis estimated that approximately 71% of perimenopausal women experienced musculoskeletal pain and found higher odds of these symptoms compared with premenopausal women (1). More recently, a systematic review and meta-analysis of 93,021 women from 22 countries reported muscle or joint pain in approximately 40% of premenopausal, 57% of perimenopausal, and 59% of postmenopausal women (2). Considerable heterogeneity limits the generalizability of these estimates, but the overall pattern indicates that musculoskeletal symptoms are common across the menopausal transition.

Other studies have reported a similar association. A longitudinal cohort of Chinese women similarly found increasing prevalence and severity of muscle and joint pain across advancing menopausal stages (3). These observations support an association between menopausal stage and musculoskeletal symptoms, but they do not establish that menopause itself causes musculoskeletal pain.

That distinction matters clinically. Estrogen deficiency has been proposed as one possible contributor, but a direct causal relationship has not been established (4). Evidence regarding hormone therapy is similarly uncertain. A recent systematic review and meta-analysis found no significant association between ever versus never use of hormone replacement therapy and generalized musculoskeletal pain, while findings for individual musculoskeletal conditions were heterogeneous or conflicting (5). Musculoskeletal symptoms around menopause should therefore neither be dismissed as an inevitable part of aging nor automatically attributed to hormonal change.

The clinical picture is broader. In a study of 6,079 Latin American women aged 40–59 years, obesity was independently associated with musculoskeletal pain, and women reporting pain were more likely to be sedentary (6). Body mass index, anxiety, depression, and self-reported poor health status were also associated with muscle and joint pain in a longitudinal cohort of Chinese women (3). Sleep may be another relevant component. A small study of postmenopausal women found that chronic musculoskeletal pain and insomnia can coexist with greater pain intensity and alterations in sleep measures (7). A 2024 scoping review similarly identified physical, psychosocial, demographic, and lifestyle determinants of musculoskeletal symptoms in postmenopausal women, together with declines in physical performance (8).

Taken together, these findings suggest that the clinically relevant question is not simply why a particular joint or muscle hurts. We should also ask what that pain has changed in the woman's life.

Diagnosis remains fundamental. Musculoskeletal pain requires appropriate assessment of the underlying condition and, when

indicated, evaluation for inflammatory disease, neurologic disease, fracture, arthritis, or other pathology. A function-oriented approach does not replace diagnosis. It broadens the assessment by considering how pain affects mobility and everyday activity.

Pain intensity and functional limitation are related, but they are not the same outcome. A woman may report persistent pain yet remain active, while another with a similar pain score may have stopped walking regularly, exercising, climbing stairs, or performing activities important to her. In a 2024 study of postmenopausal women, musculoskeletal pain at several body sites was associated with difficulty performing usual daily activities (9). This finding highlights an important point: pain can affect function as well as cause symptoms.

A function-oriented assessment may therefore extend beyond pain intensity and anatomical findings to include mobility, gait, range of motion, muscle function, balance, physical activity, sleep, and activities the woman finds difficult or has stopped performing. The relevant components will differ among patients. The purpose is not to assign every symptom a biomechanical explanation, but to understand the complaint within the woman's broader physical and functional context.

Intervention studies provide another reason to distinguish pain from function. A 2024 systematic review and meta-analysis evaluated physical exercise specifically in postmenopausal women with knee osteoarthritis (10). Across five randomized clinical trials, exercise improved measures of physical function, whereas pooled analyses did not demonstrate significant differences in pain or stiffness compared with control groups (10). These findings are specific to postmenopausal women with knee osteoarthritis and should not be generalized to all musculoskeletal disorders. They nevertheless illustrate an important clinical principle: functional improvement may occur even when improvement in pain is less apparent.

This distinction should influence how treatment success is judged. A numerical pain score remains useful, but it does not tell us whether a woman has returned to walking, exercise, work, or other activities that matter to her. Functional outcomes can provide additional information about whether treatment has translated into meaningful changes in daily life.

It also provides a practical meaning for integrative care. In this context, integration does not mean replacing established medical treatment with alternative therapies or assuming that every patient requires multiple interventions. It means considering relevant contributors and components of care together rather than treating them as unrelated problems. Depending on the individual presentation, these may include physical activity and exercise, rehabilitation, sleep, weight, psychosocial factors, pharmacologic treatment, and appropriate specialist involvement. Evidence for individual interventions varies according to the condition and outcome studied (3, 6-8, 10).

The available evidence suggests that musculoskeletal health warrants greater attention within the broader care of women in midlife and later life. These symptoms are common, arise within a complex clinical context, and may affect physical function at a stage of life when maintaining mobility and independence becomes increasingly important.

Asking where the pain is and how severe it is remains necessary. Asking what the woman can no longer do because of it may be equally informative. Bringing function into the assessment offers a more complete view of the burden of musculoskeletal pain and keeps attention on an outcome that matters to many women: the ability to move, participate in daily life, and maintain independence.

Authors' Contribution

Najmeh Maharlouei: Contributions to the conception of the study; literature review; drafting the work. Steven Licata: Contributions to the conception of the work; reviewing the work critically for important intellectual content. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work, ensuring that any questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Declaration of AI

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References

1. Lu CB, Liu PF, Zhou YS, Meng FC, Qiao TY, Yang XJ, et al. Musculoskeletal Pain during the Menopausal Transition: A Systematic Review and Meta-Analysis. Neural Plast. 2020;2020:8842110. doi: 10.1155/2020/8842110. PubMed PMID: 33299396; PubMed Central PMCID: PMC7710408.
2. Kruse C, McKechnie T, Dworsky-Fried J, Sardar A, Hacker G, Rattansi S, et al. Musculoskeletal manifestations of perimenopause: a systematic review and meta-analysis of 93,021 women. JB JS Open Access. 2026;11(1):e25.00254. doi: 10.2106/JBJS.OA.25.00254. PubMed PMID: 41523660; PubMed Central PMCID: PMC12784006.
3. Huang F, Fan Y, Tang R, Xie Z, Yang L, Ma X, et al. Musculoskeletal pain among Chinese women during the menopausal transition: findings from a longitudinal cohort study. Pain. 2024;165(11):2644-2654. doi: 10.1097/j.pain.0000000000003283. PubMed PMID: 38787639; PubMed Central PMCID: PMC11474918.
4. Watt FE. Musculoskeletal pain and menopause. Post Reprod Health. 2018;24(1):34-43. doi: 10.1177/2053369118757537. PubMed PMID: 29412042.
5. Overton R, Amini P, Chew A, Babatunde O, Mason KJ, Rathod S, et al. The effect of hormone replacement therapy on musculoskeletal pain in menopausal women: a systematic review and meta-analysis. Post Reprod Health. 2026;32(1):52-68. doi: 10.1177/20533691251403087.
6. Blümel JE, Arteaga E, Mezones-Holguín E, Zúñiga MC, Witis S, Vallejo MS, et al. Obesity is associated with a higher prevalence of musculoskeletal pain in middle-aged women. Gynecol Endocrinol. 2017;33(5):378-382. doi: 10.1080/09513590.2016.1269741. PubMed PMID: 28084176.
7. Frange C, Hachul H, Hirotsu C, Tufik S, Andersen ML. Temporal Analysis of Chronic Musculoskeletal Pain and Sleep in Postmenopausal Women. J Clin Sleep Med. 2019;15(2):223-234. doi: 10.5664/jcsm.7622. PubMed PMID: 30736875; PubMed Central PMCID: PMC6374090.
8. Nguyen TTB, Hsu YY. Features, measurements, determinants, treatments, and outcomes of musculoskeletal symptoms in postmenopausal women: a scoping review. Geriatr Nurs. 2024;58:416-429. doi: 10.1016/j.gerinurse.2024.05.038. PubMed PMID: 38901307.
9. Espírito Santo J, Lavilla-Lerma ML, Carcelén-Fraile MDC, de Loureiro NEM, Brandão-Loureiro V, Alzar-Teruel M, et al. Associations between the severity of menopausal symptoms and musculoskeletal pain in postmenopausal Portuguese women. Int J Gynaecol Obstet. 2024;165(1):138-147. doi: 10.1002/ijgo.15271. PubMed PMID: 38093603.
10. Wolf DF, Carvalho C, Padovez RFCM, Oliveira MPB, Serrão PRMDS. Effects of physical exercise on muscle function of the knee, pain and quality of life in postmenopausal women with knee osteoarthritis: a systematic review with meta-analysis. Musculoskelet Sci Pract. 2024;71:102929. doi: 10.1016/j.msksp.2024.102929. PubMed PMID: 38489855.