



## Pain SIG Research Review Topic Weight Bias and Pain

**Introduction:** The impact of stigma and bias on mental and physical health has been well documented across marginalized communities.<sup>1,2</sup> The American Psychological Association defines stigma as, “the negative social attitude attached to a characteristic of an individual that may be regarded as a mental, physical, or social deficiency....and can lead unfairly to discrimination against and exclusion of the individual.”<sup>3</sup> One important area of stigma research applicable to physical therapy practice is weight stigma<sup>4</sup>. As with persistent pain, the patient’s perception is the patient’s experience. Explicit comments such as, “Your knee pain would improve if you would just lose 50 pounds,” are potentially harmful, as are comments intended as neutral but experienced as negative based on expectations or past experience, such as “Those shorts don’t quite fit you right” being heard as “You’re too heavy for those shorts”. Weight stigma can also be internalized; the individual’s own biases and perception of weight leads to negative self-talk or behaviors. Importantly, weight stigma may be experienced and/or internalized no matter where the patient falls on the weight spectrum.

### General Literature Overview:

Pain is clearly a common and important primary diagnosis or co-morbidity within physical therapy practice. Physical therapists often discuss the impact of a patient’s weight on the condition being treated, and yet purely physiologic explanations related to body size, such as increased joint loading, are often insufficient to explain the patient’s pain experience. This review looks at recent evidence from counseling psychology and obesity management literature indicating that experiencing stigma related to weight may be a psychosocial contributor to an individual’s experience of pain. Olson et al (2019) found that in general populations without diagnosed pain conditions, weight stigma is generally present and is associated with pain regardless of an individual’s BMI. Experienced stigma, whether from external sources (such as the clinician’s comments) or internalized stigma (from the patient’s own beliefs and values) appear to mediate pain (Bidstrup et al, 2022), and may worsen pain perception whether or not a pain condition

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<sup>1</sup> Mak, W. W. S., Poon, C. Y. M., Pun, L. Y. K., & Cheung, S. F. (2007). Meta-analysis of stigma and mental health. *Social Science & Medicine*, 65(2), 245–261. <https://doi.org/10.1016/j.socscimed.2007.03.015>

<sup>2</sup> Turan, J. M., Elafros, M. A., Logie, C. H., Banik, S., Turan, B., Crockett, K. B., Pescosolido, B., & Murray, S. M. (2019). Challenges and opportunities in examining and addressing intersectional stigma and health. *BMC Medicine*, 17(1), 7. <https://doi.org/10.1186/s12916-018-1246-9>

<sup>3</sup> <https://dictionary.apa.org/stigma> (American Psychological Association, 2022)

<sup>4</sup> Wu, Y.-K., & Berry, D. C. (2018). Impact of weight stigma on physiological and psychological health outcomes for overweight and obese adults: A systematic review. *Journal of Advanced Nursing*, 74(5), 1030–1042. <https://doi.org/10.1111/jan.13511>

such as low back pain or fibromyalgia is present. Internalized stigma in particular appears to have an effect across the weight spectrum and may amplify the effects of experienced stigma. Olson et al (2019) offers a conceptual model for how stigma may amplify the pain experience.

Okifuji and Hare (2015) noted that the relationship between weight stigma and pain had not yet been established in the literature. They proposed that causality may be a negative feedback loop, with the relationship between the two being multifactorial in nature. In contrast, Olson et al (2022) suggests a causal relationship, where internalization of weight stigma leads to increased pain experience. Olson's research suggests that emphasizing weight loss as the primary intervention in the presence of intra- or inter-personal weight stigma could in fact amplify pain.

Literature on weight stigma in physical therapy practice is limited. Setchell et al (2015) provides a good starting point for consideration. Their findings indicate that patients' perceptions of physical therapy, including the physical space of the clinic, and the assumptions they make about clinician beliefs and attitudes may influence the patient's experience, even before meeting the clinician. Clinicians' own language and presentation may further reinforce negative patient assumptions or they may ease patient concerns, creating a more positive experience and stronger therapeutic alliance.

Given our profession's historical emphasis on biomechanical factors mediating pain, this reviewer urges physical therapists and physical therapist assistants to consider the impact of these internal and external factors on the therapeutic alliance and patient outcomes. Physical therapists who better understand the impact of experienced and internalized weight stigma may positively impact their patients' pain by promoting an environment of trust and comfort during the patient care experience. In addition, there is a need for more research regarding (1) the presence or absence of explicit and implicit biases around weight within the physical therapy community; (2) patient experiences with weight stigma specific to physical therapy; (3) the impact of weight stigma on physical therapy outcomes, alone and in the presence of intersectional identities; and, (4) what, if any, interventions related to weight stigma may help improve patient experience and patient outcomes.

### Articles:

Bidstrup, H., Brennan, L., Kaufmann, L., & de la Piedad Garcia, X. (2022). Internalised weight stigma as a mediator of the relationship between experienced/perceived weight stigma and biopsychosocial outcomes: A systematic review. *International Journal of Obesity*, 46(1), 1–9. <https://doi.org/10.1038/s41366-021-00982-4>

- **Abstract:**

OBJECTIVE: To systematically review studies that have assessed the mediating role of internalised weight stigma on the relationship between experienced/perceived weight stigma and any biopsychosocial outcomes. METHODS: PsycINFO, PsycExtra, Web of Science,

CINAHL, Medline and Embase were systematically searched. Identified studies were double screened (HB and XPG). RESULTS: Seventeen studies (across 16 articles) met our inclusion criteria (N = 21,172), and almost all studies measured only psychological outcomes (n = 15). Eight studies found consistent evidence for internalised weight stigma as a mediator of the relationship between experienced/perceived weight stigma and disordered eating outcomes. Preliminary evidence was found for the mediating role of internalised weight stigma on the relationship between experienced/perceived weight stigma and body shame, body dissatisfaction, exercise behaviour, healthcare experiences and behaviours, bodily pain and parental weight talk. However, the findings were inconsistent for depression and anxiety, although only two studies reported these. CONCLUSION: This review provides preliminary evidence for internalised weight stigma as an intervening variable in the relationship between experienced/perceived weight stigma and adverse health outcomes. Results suggest that there are potential benefits of interventions addressing internalised weight stigma to improve health outcomes. However, these findings must be considered in the context of the psychometric limitations of the Weight Bias Internalisation Scale, which was used in all but one study.

Olson, K. L., Panza, E., Lillis, J., & Wing, R. R. (2022). Association of Weight-Related Stigmas with Daily Pain Symptoms Among Individuals With Obesity. *Annals of Behavioral Medicine*, kaac025. <https://doi.org/10.1093/abm/kaac025>

- **Abstract:**

Individuals with obesity are disproportionately impacted by pain-related symptoms. This study evaluated experienced weight stigma and internalized weight bias (IWB) as predictors of pain symptoms in daily life among individuals with obesity. Adults with obesity (n = 39; 51% female, 67% White, 43.8 ± 11.6 years old, BMI = 36.8 ± 6.7 kg/m<sup>2</sup>) completed a baseline assessment (demographics, experienced weight stigma, IWB) and a 14-day Ecological Momentary Assessment (EMA) period involving five daily prompts of pain/aches/joint pain, muscle soreness, experienced weight stigma, and IWB. Generalized linear models were used to assess experienced weight stigma and IWB at baseline as prospective predictors of EMA pain/soreness symptoms. Multi-level models were used to test the association of momentary weight stigma experiences and IWB with pain/soreness at the same and subsequent EMA prompts. IWB at baseline, but not experienced weight stigma, was associated with more frequent pain symptoms (p < .05) and muscle soreness (p < .01) during EMA. Momentary IWB (but not experienced stigma) was associated with more pain/aches/joint pain and muscle soreness at the same and subsequent prompt. Internalized (but not experienced) weight bias was prospectively associated with pain symptoms in daily life among individuals with obesity. Results are consistent with growing evidence that weight-related stigmas represent psychosocial factors that contribute to weight-related morbidity typically attributed to body size.

Olson, K. L., & Mensinger, J. L. (2019). Weight-related stigma mediates the relationship between weight status and bodily pain: A conceptual model and call for further research. *Body Image*, 30, 159–164. <https://doi.org/10.1016/j.bodyim.2019.07.005>

- **Abstract:**

Women are disproportionately impacted by pain compared to men, highlighting the need to better understand factors that contribute to this gender disparity. Previous findings suggest weight-related stigma may be associated with pain among women attempting to lose weight. The goal of this study is to determine if experienced and/or internalized weight bias mediate the relationship between body mass index (BMI) and pain-related impairment in a large, community-based sample of women across the weight spectrum (N = 309; MAge = 56.5, SD = 14.5; MBMI = 28.5, SD = 7.1), and to evaluate whether this relationship differs for women with a pain condition. Analyses were performed using the Conditional-PROCESS Macro to examine the relationships between BMI, pain-related impairment, internalized and experienced weight-stigma, and the potentially moderating effect of pain-related conditions on these relationships. After adjusting for covariates, both experienced stigma and internalized weight stigma statistically mediated the BMI and pain-related impairment relationship; however, in the tests of moderated mediation, the indirect effect of internalized weight bias only held true for those without pain conditions. These findings offer a preliminary conceptual model and highlight the importance of pain research to include weight-related stigma.

Okifuji, A., & Hare, B. D. (2015). The association between chronic pain and obesity. *Journal of Pain Research*, 8, 399–408. <https://doi.org/10.2147/JPR.S55598>

- **Abstract:**

Obesity and pain present serious public health concerns in our society. Evidence strongly suggests that comorbid obesity is common in chronic pain conditions, and pain complaints are common in obese individuals. In this paper, we review the association between obesity and pain in the general population as well as chronic pain patients. We also review the relationship between obesity and pain response to noxious stimulation in animals and humans. Based upon the existing research, we present several potential mechanisms that may link the two phenomena, including mechanical/structural factors, chemical mediators, depression, sleep, and lifestyle. We discuss the clinical implications of obesity and pain, focusing on the effect of weight loss, both surgical and noninvasive, on pain. The literature suggests that the two conditions are significant comorbidities, adversely impacting each other. The nature of the relationship however is not likely to be direct, but many interacting factors appear to contribute. Weight loss for obese pain patients appears to be an important aspect of overall pain rehabilitation, although more efforts are needed to determine strategies to maintain long-term benefit.

Setchell, J., Watson, B., Jones, L., & Gard, M. (2015). Weight stigma in physiotherapy practice: Patient perceptions of interactions with physiotherapists. *Manual Therapy*, 20(6), 835–841. <https://doi.org/10.1016/j.math.2015.04.001>

- **Abstract:**

**Background:** Weight management is increasingly considered part of physiotherapists' scope of practice in order to improve patient outcomes by, for example, reducing load on joints, or improving chronic pain. However, interactions with patients involving weight may result in patient perceptions of negative judgement from health professionals, which can result in

poorer health outcomes. How physiotherapist/patient interactions involving weight are perceived by patients has not yet been investigated. **Objectives:** To explore patients' perceptions of interactions with physiotherapists that involved weight, and investigate how these perceptions may inform physiotherapy practice. Design: Face-to-face interviews with physiotherapy patients, with follow up interviews conducted by telephone. Data were analysed thematically. **Method:** First interviews were held in a physiotherapy practice with follow up interviews conducted two weeks later. Interviews were audio recorded, transcribed and analysed using an inductive thematic method established by Braun and Clarke. **Findings:** Thirty interviews with 15 patients were analysed. Four main themes relevant to weight were identified: 1) perceptions of being 'in physiotherapy' including pre-conceptions, the physical environment, and exposing the body, 2) emphasis placed on weight in physiotherapy interactions, 3) communication styles, and 4) judgement perception. **Conclusion:** Some patients perceived negative weight judgements from elements of physiotherapy interactions and environments. Physiotherapists need to be aware of this perception because it may result in poorer patient outcomes and patients avoiding physiotherapy appointments. The results suggest strategies to counteract weight stigma include: adjusting the physical environment of the clinic, portraying an understanding of complex determinants of weight, and employing collaborative, non-judgemental communication styles.

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