Body Mass Index and Chronic Pain Outcomes in a Tertiary Pain Practice: A Cross-Sectional Analysis

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In specialist pain care, BMI tracks knee pain and physical function rather than overall pain severity.

Why ask this

Obesity and chronic pain co-occur, but the evidence comes mostly from general populations. We asked whether BMI shapes specific, clinically relevant outcomes in a referred tertiary pain cohort.

Cohort

307
consecutive patients (310 screened)

29.1
mean BMI, kg/m² (SD 7.1)

73%
overweight or obese

Methods

- Single-centre intake review; 3 excluded (missing BMI or pain score)
- Outcomes: BPI intensity and interference, pain sites, treatment, relief, 19 comorbidities
- Spearman, Kruskal–Wallis, Mann–Whitney, Fisher exact; Benjamini–Hochberg FDR per family
- Jonckheere–Terpstra trend across BMI categories
- Robust linear regression (age, sex, smoking, alcohol); ordinal logistic sensitivity model
- Secondary analyses exploratory

Knee pain doubles above BMI 30

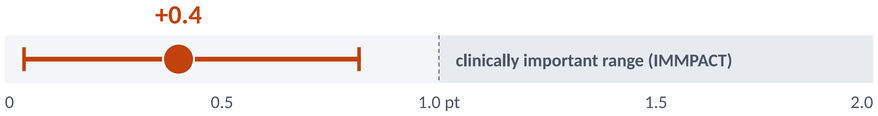
Only 1 of 6 pain sites survived FDR correction (adjusted p = 0.011). Prevalence was flat below 30, then stepped up.



RR 2.02 (95% CI 1.38–2.96)

Pain intensity: real, but small

Adjusted β = 0.043 per BMI unit (95% CI 0.004–0.082; p = 0.036). Per 10 BMI units, on the 0–10 scale:



Monotonic rise across BMI categories (Jonckheere–Terpstra z = 2.47, p = 0.014); unadjusted ρ = 0.14 (95% CI 0.02–0.25, p = 0.016).

Activity-related interference only

BPI interference items correlated with BMI:

ASSOCIATED	NOT ASSOCIATED
Walking ability	Mood
Normal work	Sleep
General activity	Relationships
	Enjoyment of life

No difference by BMI

- Treatment approach
- Reported relief
- Any of 19 comorbidities (after correction)

Implication & limits

Use BMI to inform knee-pain and function assessment rather than overall severity. Cross-sectional, single-centre, referred cohort: cannot establish causality or exclude pain-driven weight gain.

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