Asana and Pranayama for Body Mass Index and Heart Rate During Substance Use Rehabilitation: A Randomized Controlled Trial

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Abstract (300 word limit)

Statement of the Problem: Physical recovery is an important concern during treatment for substance use disorder. This trial examined whether yoga postures, breathing exercises or both could improve body mass index (BMI) and heart rate in people receiving rehabilitation.

Methodology: Sixty participants at a rehabilitation centre in Shimla, India, were randomly assigned to asana, pranayama, a combined programme or control. The yoga programmes ran for 12 weeks, with three 30-minute sessions each week.

Findings: The pattern of results varied by practice. Mean BMI was lowest with asana (23.051 kg/m²), followed by the combined programme (23.456) and pranayama (23.851). Heart-rate means were 67.950 beats/min for pranayama, 68.603 for combined practice and 68.859 for asana, with improvements relative to control.

Conclusion and Significance: These findings support considering yoga alongside rehabilitation. Posture-based practice showed the most favourable BMI result, whereas breathing-based practice showed the most favourable heart-rate result. The two approaches may therefore contribute differently to physical recovery.

Keywords: Yoga; substance use disorder; body mass index; heart rate; rehabilitation

Photograph



Dr Manoj Sahu

Recent Publications (minimum 5)

1. Kumar S, Sahu M, Ghosh K. Evaluating the Effects of Yoga on the Body Mass Index and Heart Rate among Individuals with Substance Use Disorder: A Randomized Controlled Trial. *Applied Psychophysiology and Biofeedback. 2026;51(1):79-90.* doi:10.1007/s10484-025-09727-9

2. Kumar S, Sahu M, Ghosh K. Comparative Effects of Yoga Practices on Self-Esteem and Blood Pressure in Substance Use Disorders: An Randomized Control Trial. *Substance Use & Misuse. Published online 2 June 2026:1-10.* doi:10.1080/10826084.2026.2679003

3. Dhaka S, Sahu M, Sonowal K, et al. Post-Activation Performance Enhancement in Badminton Players: A Randomized Crossover Study Comparing the Acute Effects of Four Squat Protocols on CMJ Performance. *Physical Education Theory and Methodology. 2026;26(1):177-183.* doi:10.17309/tmfv.2026.1.17

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5. Changmai S, Singh VK, Sahu M, et al. A Yogic Intervention On Strength Endurance, Flexibility And Body Fat Percentage; A Comparative Study. *Revista Electronica de Veterinaria. 2024;25(1S):1932-1935.* doi:10.69980/redvet.v25i1S.1856

Biography (150 word limit)

Dr Manoj Sahu is an Assistant Professor in the Department of Physical Education Pedagogy at the Lakshmibai National Institute of Physical Education, Gwalior, India. His co-authored research examines yoga in substance use rehabilitation and physical conditioning in sport. His publications address cardiovascular measures, body mass index and psychological well-being. He guided the study presented here alongside Dr Kuntal Ghosh.

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