

DETERMINING THE EFFECTS OF PHYSICAL ACTIVITY ON ISCHEMIC HEART DISEASE

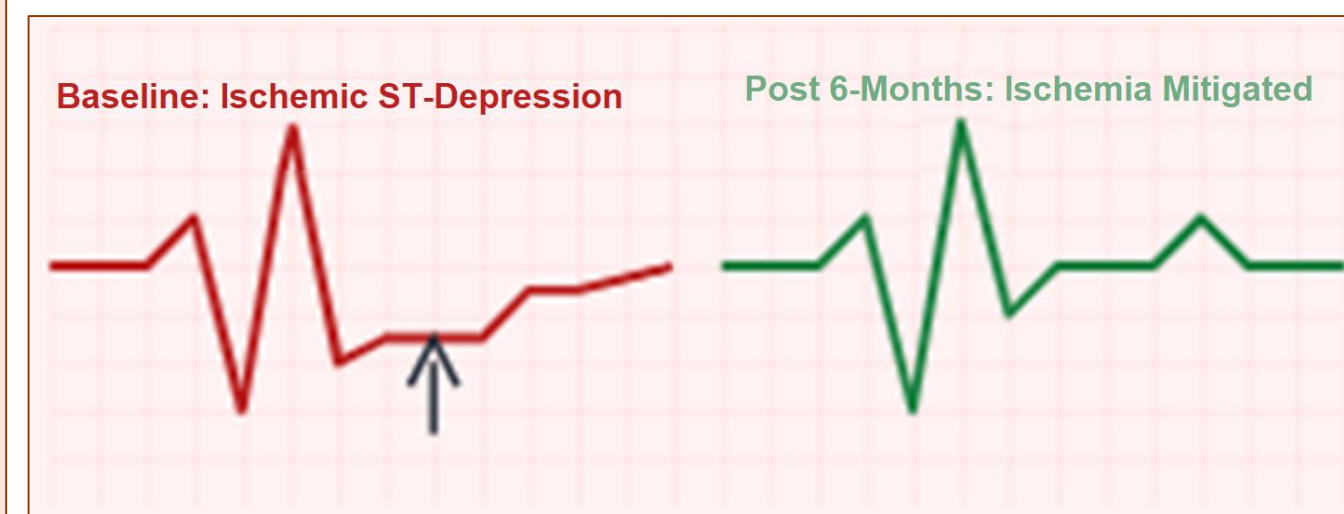
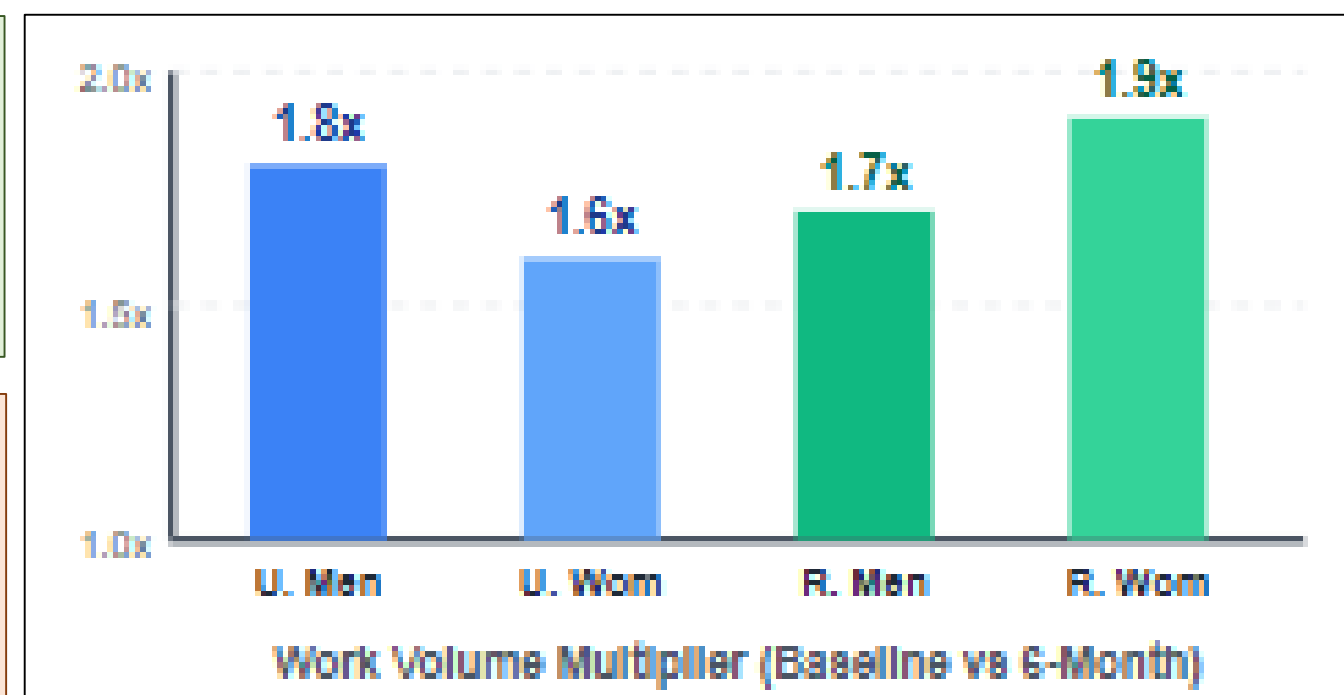
Virmani S.¹, Rajabova R. S.²

¹ International Faculty, TSMU* Main Campus, Tashkent, Uzbekistan; email: dr.sunnyv1811.finsta@gmail.com; sanskar.virmani@tma.uz

² Dept. of Internal Diseases in Family Medicine № 1 & Cardiology Dept. № 1, Multidisciplinary Clinic № 2 of TSMU*; email: rajabovarano4@gmail.com

Purpose

To quantify the cognitive dissonance between subjective physical activity (PA) recall and objective ischemic thresholds in urban and rural patients with Ischemic Heart Disease (IHD). Furthermore, to evaluate the clinical efficacy of a personalised, mHealth-guided cardiovascular rehabilitation intervention.



Methods

Study Design: Prospective cohort clinical study (2022–2025).

Cohort: 183 IHD patients with Stable Angina Pectoris (FC II-III). Mean age 64.2 ± 5.1 years.

Urban/U: n=89 (47 Men, 42 Women); **Rural/R:** n=94 (51 Men, 43 Women)

Baseline

Assessments: Subjective (ODA-23+ Questionnaire, diaries) vs. Objective (Clinical cycle ergometry to map exact external workload [kgm/min] and ischemic thresholds).



Intervention: 6-month personalised PA regimen (dosed walking, breathing) dynamically monitored via the "HealthRunApp" mobile app, titrated to safe HR limits based on baseline ergometry.

Results: Baseline Hypodynamia

Cognitive Dissonance: ~65% of men subjectively rated PA as "medium/high." However, objective ergometry exposed low or very low physical tolerance in 80% of urban patients and 88.4% of rural women.

Sedentary Extremes: Diaries revealed profound systemic hypersomnolence (Urban men: 11.4 ± 1.8 hrs/day sleep; Rural women: 11.6 ± 1.8 hrs/day sleep + 5.7 ± 0.7 hrs/day passive TV).

Comorbidities: Arterial hypertension noted in 84.3% (Urban) and 80.8% (Rural).

6-Month Efficacy

Objective Work Volume (Cycle Ergometry): Achieved highly significant increases across all demographics following the intervention ($p < 0.01$).

Ischemic Mitigation

Exercise Duration: The duration of exertion safely tolerated on the bicycle ergometer increased significantly ($p < 0.001$).

Arrhythmogenic Burden: The occurrence of load-induced pathological markers (ST-segment shifts, supraventricular & ventricular extrasystoles) decreased drastically ($p < 0.001$).

Conclusions

Risk Stratification Flaws: A severe baseline disconnect exists between self-perceived health literacy and objective physiological tolerance. Unverified, subjective PA recall is dangerously inadequate.

Clinical Mandate: Objective modalities (e.g., cycle ergometry) are absolutely paramount to uncover true ischemic thresholds in SAP patients.

Intervention Success: mHealth-guided cardiac rehabilitation successfully reverses severe hypodynamia, significantly extends objective ischemic thresholds, and safely attenuates life-threatening arrhythmogenic burden.

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*TSMU: Tashkent State Medical University