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# Impact of Physical Activity on Stress Levels and Methadone Maintenance Treatment Outcomes

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Praneeja Matta  
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## **Impact of Physical Activity on Stress Levels and Methadone Maintenance Treatment**

### **Outcomes**

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**Introduction:** While the opioid epidemic has continued to intensify over the last decade, unfortunately the likelihood of achieving stable long-term abstinence using methadone maintenance treatment (MMT) remains as low as 60 percent. Perceived stress has been identified as a factor predictive of premature termination and relapse, making stress reduction an important area of study in MMT. However, little research is available on the effects of active stress-coping mechanisms on MMT outcomes.

**Objective:** To address this gap, the current study was conducted to examine the impact of physical activity on stress reduction and treatment outcomes.

**Methods:** This was a retrospective cohort study in which ninety-three consecutive admissions to a university sponsored, community-based, outpatient medication-assisted treatment facility in Pennsylvania were reviewed. The 46 individuals (49.5%) who remained active in treatment at 6 months post-admission represented the study sample. Thirty-four of these individuals completed an initial assessment with the 4-item Perceived Stress Scale (PSS4) allowing investigators to determine stress levels at admission. The 27 individuals scoring above the 25th percentile were categorized as “high stress” and retained for further interviewing. Of these 27 individuals, 22 completed both the 10-item Perceived Stress Scale (PSS10) to assess stress levels at

approximately 6 months post-admission as well the Global Physical Activity Questionnaire (GPAQ), which measured physical activity levels at admission and 6 months post-admission.

**Results:** The mean age at time of study was  $40.52 \pm 11.84$  years; 68% of study participants were male, 65% were Caucasian, 79% were unemployed, and 91% were unmarried. In the first 180 days of treatment, subjects were dosed on average of 164.02 days (91.1%) with the average dose equaling  $85.40 \pm 40.2$  milligrams per day. Consistent with prior research, results indicated that stress levels dropped significantly from admission to 6 months post-entry from a mean stress level of  $2.82 \pm .59$  to  $1.88 \pm .80$ ,  $t(22)=4.971$ ,  $p < .01$ . Results also indicated that physical activity levels dropped, but not significantly, from admission to 6 months post-entry, from  $177.06 \pm 188.09$  to  $126.59 \pm 125.97$  MET-minutes,  $t(22)=1.406$ ,  $p=.174$ . No relationship between changes in stress and activity levels was observed.

**Conclusion:** Our data, based on a limited sample, suggests that treatment is associated with decreased levels of stress levels in this population. Interestingly, patients attributed their decreased physical activity levels to reduced or nonexistent drug-seeking activity, as well as to the demanding time-commitment of MMT. Our failure to find significant effects of exercise may be a consequence of sampling procedures and sample size. To better address this question, future controlled studies might focus on incorporating physical exercise in MMT treatment to determine if those who regularly engage in physical activity demonstrate better outcomes in MMT. Identification of positive effects will allow the medical community to introduce non-pharmaceutical approaches to the treatment of opioid use disorders.