The Effectiveness of Aerobic Kickboxing Training for Substance Abuse Rehabilitation in Hong Kong
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Introduction
Overseas studies have proven the positive effect of exercise therapy for illicit drug abusers. However, the effectiveness of well-structured exercise for those in Hong Kong was unknown. The popular and high-energy workout kickboxing was chosen in this study.

Objectives
To evaluate the effect of exercise for physical fitness, cognitive function, mental health and relapse prevention for rehabilitees in Drug Treatment and Rehabilitation Centers (DTRCs) in Hong Kong.

Methodology
After the baseline assessments of physical fitness, cognitive function, mental health and relapse risk, subjects were assigned into treatment or control group by convenience sampling based on the availability of clients in DTRC. Treatment group received an 8-week aerobic kickboxing training with 2 training sessions per week. After completion of training program, post-evaluation was conducted. For control group, re-assessment was conducted 8 weeks after the baseline assessment.

Result
From September 2013 to July 2014, 80 female subjects (mean age = 22.6±3.9 years) were assigned into treatment (n=40) or control group (n=40). The mean substance abuse history was 6.7±3.0 years. Poly-substance abusers accounted for 71.3% and
77.5% were ketamine abusers. Among all subjects, 75.3% have exerted their cardiovascular system with moderate to vigorous exercise intensity for at least 15 minutes in each training session. For the demographic and baseline assessments, no significant difference between groups was found. In the post-evaluation, treatment group performed significantly better than control group in sit-and-reach flexibility test ($p=0.012$) and push-up endurance test ($p=0.046$). The waist circumference in treatment group was significantly lower than control group ($p=0.000$). Significant improvement in cardiovascular fitness was revealed only in treatment group ($p=0.000$). The cognitive function was significantly better in treatment group than control group, including episodic memory ($p=0.028$), spatial planning and motor control ($p=0.023$), rule acquisition and attentional set shifting ($p=0.031$). For mental health and relapse prevention, significant improvements in Beck Depression Inventory, Stimulant Relapse Risk Scale and contemplation stage were illustrated in both groups. However, there was no significant difference between groups. Aerobic kickboxing training was proven to be an effective adjunct therapy in terms of physical fitness and cognitive function for female substance abuse rehabilitation program in Hong Kong.