

The Effect of Group Aerobic Exercise on Emotional and Social Cognition of Patients with Schizophrenia: A One-Blind Clinical Study

Today, owing to the high side effects of antipsychotic drugs in the symptomatic treatment of schizophrenia (SZ) patients and their lack of effect on the social, cognitive and occupational function of patients, other non-pharmacological methods such as exercise therapy as a combination therapy have been considered. Therefore, in this study, we try to investigate the effect of group aerobic exercise on emotional and social cognition of patients with schizophrenia. **Methods:** In this one-blind clinical study, 30 males with schizophrenia aged 20 to 60 years who satisfied the inclusion criteria (including informed consent from the patient or his or her legal guardian and no underlying cardiovascular illness) were studied at Kashan's Parham Psychiatric Center. Then, for six months (during the spring and summer of 2022), they did aerobic exercises twice a week for half an hour each, under the direction of a sports coach. Finally, Ekman and Stroop cognitive tests were administered to each patient in the form of interviews and questionnaires before and after the intervention, and the findings were analyzed. **Results:** In our study, the mean age of the subjects was 45.87 ± 10.59 years and the mean age of the onset of disease was 23.00 ± 3.85 years. Aerobic exercise significantly reduced the scores of the construction tests of sequences 1, 2 and 3 and also the Stroop test 1, 2 and 3 at the end of the study compared to the initial values ($P < 0.05$). In addition, it caused a significant increase in the Stroop test score of the direct and inverse span of words and direct numbers after the intervention compared to before the intervention ($P < 0.05$). **Conclusion:** According to our findings, aerobic exercise has a favorable and significant influence on the emotional and social cognition of schizophrenia patients. However, greater sample size studies and the use of diverse approaches to analyze the effect of exercise in these patients are required to more accurately understand the issue and make better recommendations.

Examining of Heavy Metal Concentrations in Hookah Smokers

Hookah smoking has been spreading around the world, especially among young adults. The current study aimed to investigate the concentration of heavy metals and elements and clinical symptoms in hookah users in comparison with non-users. To the best of our knowledge, the present study represents the first scientific contribution indicating levels of several heavy metals and elements in urine and blood in hookah users and non-users as well as evaluating clinical symptoms. This research was implemented in Iran among 100 males divided into two groups (50/group): control and hookah users. Heavy metal contamination (lead, cadmium, arsenic, thallium, zinc, and copper) in blood and urine samples was assayed by graphite furnace atomic absorption spectrometry (GFAAS). Duration of hookah use was 7.06 ± 4.57 years. The mean \pm SD of lead, arsenic, and thallium concentrations was 3.77 ± 2.22 , 8.50 ± 4.34 , and 4.22 ± 2.69 $\mu\text{g/L}$. The mean levels of blood for lead, arsenic, and urinary thallium in hookah users are significantly higher than the control group ($p < 0.05$). The most frequent clinical symptoms in hookah smokers were constipation and fatigue. Findings from this study might guide the development of policies to regulate hookah smoking and prevent adverse health effects associated with hookah smoking.

The Effects of Probiotic Supplementation on Opioid-Related Disorder in Patients under Methadone Maintenance Treatment Programs.

Introduction. Patients under methadone maintenance treatment programs (MMTPs) are susceptible to numerous complications (e.g., mental and metabolic disorders). This study evaluated the effects of probiotics on clinical symptoms, biomarkers of oxidative stress, inflammation, insulin resistance, and serum lipid content in patients receiving MMTPs. **Materials and Methods.** A randomized, double-blind, placebo-controlled trial was conducted among 70 patients receiving MMTPs to receive either

1.9×10^8 CFU/day probiotics (n = 35) or placebo (n = 35) for 12 weeks. Clinical symptoms and metabolic profiles were measured before and after the intervention in patients receiving MMTPs. **Results.** Compared with the placebo group, probiotic supplementation resulted in a significant improvement in the severity of depression ($P < 0.05$). In addition, probiotic administration significantly decreased fasting plasma glucose (FPG), total cholesterol, and low-density lipoprotein cholesterol (LDL cholesterol) ($P < 0.05$). Furthermore, probiotics resulted in a significant reduction in high-sensitivity C-reactive protein (hs-CRP) and a significant elevation in total antioxidant capacity (TAC) and total glutathione (GSH) levels ($P < 0.05$). **Conclusion.** Treatment with probiotics for 12 weeks to patients receiving MMTPs had beneficial effects on symptoms of depression, as well as several metabolic profiles.

The Effect of Selenium Supplementation on Clinical Outcomes, Metabolic Profiles, and Pulsatility Index of the Uterine Artery in High-Risk Mothers in Terms of Preeclampsia Screening with Quadruple Test: a Randomized, Double-Blind, Placebo-Controlled Clinical Trial

Data on the effects of selenium (Se) supplementation on clinical outcomes, metabolic profiles, and pulsatility index (PI) in high-risk mothers in terms of preeclampsia (PE) screening with quadruple tests are scarce. This study evaluated the effects of Se supplementation on clinical outcomes, metabolic profiles, and uterine artery PI on Doppler ultrasound in high-risk mothers in terms of PE screening with quad marker. The current randomized, double-blind, placebo-controlled trial was conducted among 60 high-risk pregnant women screening for PE with quad tests. Participants were randomly allocated into two groups (30 participants each group), received either 200 μ g/day Se supplements (as Se amino acid chelate) or placebo from 16 to 18 weeks of pregnancy for 12 weeks. Clinical outcomes, metabolic profiles, and uterine artery PI were assessed at baseline and at the end of trial. Se supplementation resulted in a significant elevation in serum Se levels (β 22.25 μ g/dl; 95% CI, 18.3, 26.1; $P < 0.001$) compared with the placebo. Also, Se supplementation resulted in a significant elevation in total antioxidant capacity (β 82.88 mmol/L; 95% CI, 3.03, 162.73; $P = 0.04$), and total glutathione (β 71.35 μ mol/L; 95% CI, 5.76, 136.94; $P = 0.03$), and a significant reduction in high-sensitivity C-reactive protein levels (β -1.52; 95% CI, -2.91, -0.14; $P = 0.03$) compared with the placebo. Additionally, Se supplementation significantly decreased PI of the uterine artery in Doppler

ultrasound ($\beta = 0.09$; 95% CI, $-0.14, -0.04$; $P = 0.04$), and a significant improvement in depression ($\beta = 5.63$; 95% CI, $-6.97, -4.28$; $P < 0.001$), anxiety ($\beta = 1.99$; 95% CI, $-2.56, -1.42$; $P < 0.001$), and sleep quality ($\beta = 1.97$; 95% CI, $-2.47, -1.46$; $P < 0.001$). Se supplementation for 12 weeks in high-risk pregnant women in terms of PE screening with quadruplet marker had beneficial effects on serum Se level, some metabolic profiles, uterine artery PI, and mental health.

Investigating of the relationship between spiritual health and mental health in patients undergoing methadone maintenance treatment in Kashan.

Addiction is an individual and social problem that can endanger the mental health of people in addition to the body. Since these people have a more vulnerable personality, the present study aimed to Investigating of spiritual health and mental health in patients undergoing methadone maintenance treatment (MMT) in Kashan city. The current research is cross-sectional-analytical. 282 participants under methadone maintenance treatment were selected. After receiving demographic information, participants' mental health (SCL90) and spiritual health were measured. Then, the data was analyzed and examined with statistical methods (variance analysis and Pearson correlation coefficient test. The average age of the participants was calculated to be 44.92 (9.00). The average age of starting to use drugs was 21.72 (4.04). The most common drug used was opium and its derivatives (64.5%). The average scores of spiritual health and mental health were calculated as 191.52 (37.20) and 139.38 (14.70), respectively. Mental health and spiritual health did not show a significant relationship with any of the demographic variables and substance use ($P > 0.05$). Also, there was no significant relationship between mental health and spiritual health ($P = 0.527$). There was no significant relationship between the mental health and spiritual health of patients undergoing maintenance treatment with methadone, but the majority of them had low spiritual health and mild mental disorders. Therefore, considering the importance of spiritual health, it is necessary to do more studies in this field. The aim of this study was to investigate the relationship between oral health and Vitamin D levels in patients undergoing methadone maintenance treatment in addiction treatment centers in Kashan. Materials and Methods: This cross-sectional study was performed on 202 patients aged 18–60 years who were referred to methadone maintenance treatment clinics in Kashan. The measurement tool included a demographic information checklist and a modified oral health form of the World Health Organization. 2 cc of blood was taken from patients to measure Vitamin D levels. Findings: Out of 181 patients in the study, 73.8% of patients had a methadone dose of < 20 cc per day. One hundred twenty-six patients had a history of drug use. In 86.4% of patients, Vitamin D deficiencies were observed. In these patients, moderate gingival problems and moderate-to-severe dental plaque were 60.2% and 71.9%, respectively. Furthermore, the range of decayed, missing, and filled teeth (DMFT) index in these patients was 23.57 ± 7.90 . No significant relationship was indicated between DMFT index and Vitamin D level. Conclusions: It is difficult to determine the main causes of oral problems among addicts. Apart from the direct effects of addiction, these patients exhibit a wide range of unhealthy behaviors such as poor oral hygiene, high sugar intake, and poor nutrition. On the other hand, most patients experience a reduction in Vitamin D status.