

Methods: Young adults (n=270) performed a simplified virtual slot machine producing wins, two types of near-misses (before/after payline) and full-misses, with simultaneous measurements of heart rate (HR) and skin conductance responses (SCR). Self-reports of perceived chance of winning, pleasure and motivation to play were given by the participants on each trial.

Results: Near-misses were associated with the largest HR acceleration compared to wins and full-misses, and larger HR deceleration and SCRs compared to full-misses. Differential autonomic and subjective reports were observed for near-misses subtypes, suggesting that near-misses are processed differently depending on their position before or after payline. Females showed larger SCR responses and increased motivation following wins compared to males.

Conclusions: Slot machine gambling outcomes elicit differential physiological and subjective responses in young adults. Specifically, near-misses produce larger autonomic responses compared to regular full-misses. However, near-misses are complex, multifaceted events producing various emotional responses depending on their characterization. Males and females respond differently to wins, highlighting the importance of considering sex differences in experimental research on autonomic responses in gambling.

Disclosure: No significant relationships.

Keywords: Gambling; near-miss; autonomic responses; sex differences

EPP0549

Assessment of the gifted adolescents' functional state of the organism under the psychological stress

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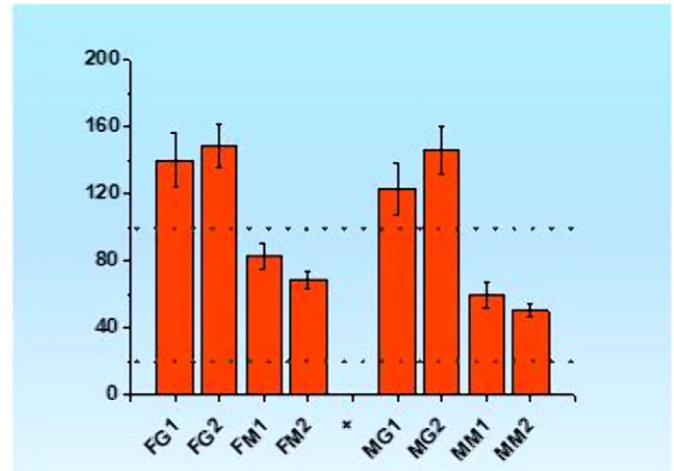
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Introduction: Many studies have shown that gifted children and youth have difficulties in education, emotional regulations, psychological adjustment process etc.

Objectives: Our aim is to evaluate the adaptive capacity, the functional state of the gifted adolescents' organism under external potential stressor.

Methods: The research has been conducted in schools of Yerevan, RA. The initial sample consisted of 500 high school students aged 16-18. Renzulli's Three-Ring Conception of Giftedness was used to reveal gifted adolescents. In the course of study 35 of 500 participants were defined as gifted. The quasi-experimental design has been used with 35 participants in the comparison and experiment group each. For comparative analyses, we used Heart rate variability (HRV) method. As a potential stressor, the intellectual workload was selected. The ECG indicators have been recorded for 5 minutes each before and after the intellectual workload. We are presenting the results through Stress Index.

Results: As we can see from the picture 1. the Stress Index (SI) of gifted girls and boys are higher from norm (the norm is 20-100). For control groups, the SI is within the norm. The SI for gifted groups of adolescents significantly higher from those of control groups. The data indicates, that for gifted adolescents the activity of central mechanisms prevails over autonomous mechanisms.



Conclusions: The level of stress in gifted adolescents is higher than that of the control group and rises in case when the task wasn't solved. High results speak about psycho-emotional tension and stress. Further research is needed to understand the psychological background of such reactions.

Disclosure: No significant relationships.

Keywords: Gifted adolescents; functional state; Stress Index

EPP0550

Towards EEG Biomarkers of Emotional Burnout Syndrome: gender related variations in functional connectivity under Resistance stage formation

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Introduction: The phenomenon of burnout generates the most interest due to relation to complete or partial disengagement of emotions, cognitive impairment, impairment of long-term and working memory. The neurophysiological mechanisms of emotional burnout remain insufficiently studied. Data related to gender specific characteristics of burnout formation are contradictory.

Objectives: To establish the gender related EEG markers of burnout was our aim.

Methods: 621 volunteers (443 females) aged 18 to 24 years participated in this study. EEG was registered during the resting state (3 min, closed eyes condition). The interhemispheric and intrahemispheric average coherence across all EEG segments in all frequencies from 0.2-45 Hz was estimated. Psychological testing was performed before the registration of EEG. To determine the level of burnout formation the Boyko's Syndrome of Emotional Burnout Inventory (SEB) was used.

Results: The Resistance phase of emotional burnout was formed in 139 women and 42 men. Development of Resistance stage in female includes formation of new intrahemispheric connections predominantly in the left frontal region (alpha1,2,3-subbands) and the midline frontal-central axis (Fz-Cz, alpha1,2 and theta2-subbands).

At the same time new intrahemispheric links in men under Resistance stage development are formed mainly in the right frontal region (alpha1,2,3-subbands).

Conclusions: Connectivity patterns displayed gender-related variations that are associated with the difference in the alterations in the attention focusing, working memory, and emotional processes under burnout formation.

Disclosure: No significant relationships.

Keywords: functional connectivity; gender; emotional burnout; Resistance stage

EPP0553

Is repetitive Transcranial Magnetic Stimulation really effective in the treatment of major depression? – Results of a Meta-Analysis

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Introduction: Clinical studies demonstrated the efficacy of rTMS treatment in major depressive disorder. However, the results of meta-analyses are contradictory due to the heterogeneity of the included studies.

Objectives: The aim was to analyse the effectiveness of rTMS for treatment-resistant major depression.

Methods: A systematic literature review of English-language articles published in the last 10 years was performed on PubMed and Scopus databases according to PRISMA guideline principles. To assess the effects of rTMS on response and remission rates, random-effects model and inverse variance method were used.

Results: 23 randomized double-blind sham-controlled studies met the inclusion criteria for quantitative analysis for response (n= 1020 patients) and 12 studies for remission (n= 846 patients). The relative risk for response and remission were 2.19 (95% CI: 1.68-2,86, p=0.000 n=912) and 2.65 (95% CI: 1.32-5,31, p=0.002, n=603), respectively using rTMS as add on treatment (in patients after two antidepressant treatment failures) compared to standard pharmacotherapy. I² analysis showed no considerable heterogeneity in the combined effect sizes neither for remission studies (I²=23.36%) nor for response studies (I²=0.00%).

Conclusions: Transcranial magnetic stimulation became an evidence-based, effective treatment for treatment-resistant major depressive disorder, either as a monotherapy or as an augmentation of pharmacotherapy. However, because of the lack of standardized protocol, a substantial methodological heterogeneity exists. According to our results, rTMS was significantly more effective than sham rTMS in both response and remission outcomes, which is consistent with previous meta-analyses, but the effect size was a bit smaller than what was reported previously.

Disclosure: No significant relationships.

Keywords: rTMS; Depression; metaanalysis

EPP0555

A review of brain stimulation and neuromodulation therapies as a treatment of depression as a behavioural and psychological symptom of vascular dementia

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Introduction: Vascular dementia (VaD) accounts for approximately 15% of all cases of dementia. While there are many different definitions of vascular dementia, it is generally understood to refer to “disease with a cognitive impairment resulting from cerebrovascular disease and ischaemic or haemorrhagic brain injury”. Research suggests that 30% of patients with VaD also suffer from depression. The treatment of depression in VaD with pharmacological therapy is relatively well-established, with the first line drug being a selective serotonin reuptake inhibitor (SSRI). However, a relatively under-researched area is the use of brain stimulation and neuromodulation therapies for the treatment of depression in VaD.

Objectives: This review aims to provide a critical analysis on the efficacy and safety of brain stimulation therapies in treating depression in VaD to determine whether it is an appropriate treatment option.

Methods: The databases used were PubMed and WebofScience. The available literature was analysed which resulted in three papers which met the inclusion criteria and were critically appraised.

Results: In all three studies, depressive symptoms improved after ECT was administered, regardless of the specific tool used to measure the severity of depression. The side effects experienced were also only temporary and resolved independently which speaks to the safety of ECT as a treatment option.

Conclusions: The results of the study prove that ECT is a safe and effective option in treating depression in VaD. However, more research is needed for the medical community to fully understand the different treatment options and say with certainty which is the safest and most effective.

Disclosure: No significant relationships.

Keywords: vascular dementia; Depression; ECT; brain stimulation therapies

EPP0557

Electroconvulsive Therapy’s use in Idiopathic Intracranial Hypertension with Mood Disorder: caution, promise, and progress

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Introduction: Idiopathic Intracranial Hypertension (IIH) is a condition characterized by an increase of intracranial pressure (ICP) with no identifiable cause to date. One-half of patients who suffer from IIH have co-morbid mood disorders, such as Major Depressive Disorder (MDD), that can be refractory to pharmacologic treatment.