

**Centre for Physiology and Biochemical Research (CPBR)**

**The Russian Society for BioPsychiatry (RSBP)**

**Ukrainian Society for Biological Psychiatry (USBP)**

**International Stress and Behavior Society (ISBS)**

**Institute of Experimental Medicine (IEM RAMS)**

# **CONFERENCE PROCEEDINGS**

**14-th Multidisciplinary International Conference  
on Neuroscience and Biological Psychiatry  
“Stress and Behavior” ISBS Conference**

**Dedicated to 120<sup>th</sup> anniversary  
of the Institute of Experimental Medicine (IEM)**

**St-Petersburg, Russia  
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describe childhood victimization experiences in a sample of university students in St-Petersburg, Russia.

**Materials and Methods:** Cluster sampling was used and 743 students from 15 universities participated in the study (63% female). The mean age was 20.47 (SD = 0.89, range = 19 – 25). Childhood victimization experiences were assessed with an adult self-report version of the Juvenile Victimization Questionnaire. Participation in the study was anonymous.

**Results and Discussion:** The results of the study showed that the rate of victimization in this sample is rather high. More than half of the sample (51.2%) indicated that they have experienced some sort of child maltreatment (34.59% of the sample stated that they experienced physical violence and 3.77% indicated that they suffered sexual abuse on behalf of an adult they knew). Almost 21% of study participants reported experiencing sexual assault (completed or attempted) before the age of 18. Peer victimization also appeared to be prevalent in this sample: 12.38% indicated sexual harassment and violence on behalf of peers. Exposure to conventional crime and witnessing violence were reported by the majority of study participants. The data is consistent with similar international research, but further studies are warranted to explore victimization rates in different community groups and assess the psychological sequelae of such victimization.

## HEART RATE VARIABILITY AS A MEASURE OF MENTAL WORK CAPACITY

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**Introduction:** We have previously shown that the amplitude of heart rate modulation at the frequency of approximately 0.33 modulations per cardiointerval is associated with the level of frontal cortex activation, arousal level, and mental mobilization readiness. The aim of this study is to investigate the association between mental work capacity and heart rate variability.

**Materials and Methods:** The total score of the computer game tetris was taken as an integral measure of mental work capacity. In a group of 13 males, before and during tetris, 300 cardiointervals were recorded with an ECG equipment. Then frequency analysis of these records was performed with the discrete Fourier transform.

**Results and Discussion:** Correlation analysis showed that there is positive association between tetris scores and the amplitude of heart rate periodograms within the frequency bound by 0.26-0.31 modulations per cardiointerval. This association was tighter for the rest records than for the records obtained during the Tetris test. The strongest correlations were found at the frequency of approximately 0.29 modulation per cardiointerval ( $r=0.94$ ). Multiple correlation analysis results ( $R$ -square = 0.88;  $p<0.0001$ ) showed that the amplitude of the heart rate periodogram at the frequency of 0.29 modulations per cardiointerval should be taken as a measure of mental work capacity.

## EFFORT-REWARD IMBALANCE, OVERCOMMITMENT, AND MENTAL ILLNESS IN CHINESE NURSES – CROSS-SECTIONAL AND PROSPECTIVE ASSOCIATIONS

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**Introduction:** So far, there is little evidence from China about the association between work stress and mental illness. The aim of this study was to test whether work stress increases the risk of mental illness in a sample of Chinese nurses.

**Materials and Methods:** A total of 3088 registered female nurses working in hospitals were recruited in a baseline survey, 1744 nurses without mental illness at baseline were followed-up for one year. Work stress at baseline was defined in terms of non-reciprocity between high efforts