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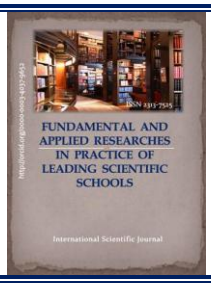

Specificities of Mental States' Self-Regulation Found in Individuals with Different Levels of Social Feeling (by Means of MUSE Neuro-Headband)

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Specificities of mental states' self-regulation found in individuals exposed to stress factors are disclosed. The experts have chosen a number of stimulus words believed to be indicators of social change stresses. Specificities of the examinees' self-regulation have been established by means of the MUSE neuro-headband that availed to analyze time proportions between the states of rest and excitement.

Key words: social feeling, social change stress, tension, disadaptation, MUSE neuro-headband.

Introduction

Recent years witnessed intense interest to inquiries into interrelations between social development and mental health. Significance of macro-social factors that effect on population's respective mental states increases due to fact that Ukraine today is in its transitional stage of advancement, that is, the country does not only go through substantial changes in economics and politics but experiences depreciation of common values and loss of the ideals.

Having analyzed a number of works devoted to problems of psycho-social stresses, we came to conclusion that historic transformations which give rise to seismic socio-cultural changes take a heavy toll on population's mental health. Radical and wide-scale transformations in the life of the society may result in its members' disadaptation and social disintegration. On the level of the individual, these phenomena manifest themselves in the form of social standoffishness, incapability of adaptation to changed social conditions of living, breakdown of existential patterns, etc. In this event, psychological ill-preparedness to radical social changes and urgent necessity to adapt oneself to a practically new social reality stays to be one of the root causes of social feeling unwell. The present-day life of the society in times when crisis covered almost all of its spheres brings young people numerous problems whose

overcoming or non-solution will inevitably tell on both the contemporaneity and the future life of our country. Waves of social changes germinate feelings of unprotectedness and angst, and lower psychological resistance; the youth loses psychological and social guide marks, whereas social strain and uncertainty aggravate. In this situation, the phenomenon of social feeling which mirrors basic trends of social mood and thoughts in both the youth's environment and the society on the whole, serves as the most illustrative indicator of psychological state.

The surveys of social feeling held in Ukraine demonstrate it tends to worsening with the country's population. The reasons for such moods can be explained by a number of factors. Firstly, it is a stress of social changes in all their complexity. Secondly, it is population's psychological unpreparedness to radical social changes and people's necessity to fit in with practically new social reality. Thirdly and finally, it is a social-economic crisis that does not only lead to sharp decadence of financial status but necessitates changes in life patterns.

Miscarriages in social-economic policy have resulted in numerous negative social phenomena characterized by powerful stress-producing effect on population's mental health. This is precisely why we believe it necessary to analyze the effects of social factors, inclusive of macro-social, on psychological well being of Ukrainian population.

Available (negative) changes in social, economic and political situations in this country necessitate people's adaptation to new conditions. It is due to this necessity that a great lot of people get and let grow the stress of social changes. Situation has two ways: some portion of people will successfully get adapted, and some – won't. Correspondingly, it will find its expression in the level of social well/ill-being or the social feeling (see E. Golovakha and N. Panina). The human's social feeling is determined by the degree of satisfaction of his/her social needs, which, in their turn, derivate from available system of production and distribution of social benefits. Correspondingly, the more a human being feels insufficiency of social benefits, the worse will be his/her social feeling.

Objectives and goals

The present work ***aims at*** the study of mental states' self-regulation specificities in individuals with different levels of social feeling (making use of the MUSE neuro-headband).

Study materials

E. Golovakha and N. Panina's *Integral Index of Social Feeling*; and the *MUSE neuro-headband,* an equipment for the establishment of biofeedback. MUSE is an EEG-based neuro-headband equipped with sensors that fix brain waves. Four electrodes provide for the biofeedback that allows for the establishment of the proportion of time between the examinee's stay in the state of relative rest, and his/her state of excitement. The parameters under measurement were as follows: 1) tension which is understood as the state of anxiety, excitement, and failure to relax accompanied by muscle tension; 2) rest – the state characterized by the ability to relax, inclusive of muscle relaxation, the possibility to distance oneself from external and internal irritators, and to stay in a state of relative calm.

Methods and series formation specificities: the excerpt was formed by way of randomization, with the use of approximation method, and with the involvement of 60 students-examinees ageing 18-23.

Methodology:

Stage 1: according to the *Integral Index of Social Feeling,* the respondents were divided into three groups of 20 individuals each whose level of experience of nervous-psychic tension and dominant coping strategies were studied.

Stage 2: using the MUSE neuro-headband, the time proportion between the examinees' relative rest and excitement were calculated, as well as their ability to get back to the state of

rest after the stressor's effect was studied. The study consisted of three series: Series 1 – the respondents' brain activity readings were taken while in the states of rest, neutrality and excitement; with that, all examinees were given a keynote of relaxation; Series 2 – the respondents heard a number of stimulus words related to current situation in the country, and the brain activity readings were taken once again, thus giving the explorers a proportion of the times of rest and tension in two series; the stimulus words were as follows: economic crisis, unemployment, Anti-Terrorist Operation, war, inflation, bribery, corruption, informational war, low income; Series 3 – 10 minutes after stimulus words were heard, the brain activity readings were taken again, thus allowing for the establishment of the respondents' ability to calm down and get back to the state of relative rest.

Study results and discussion

In the course of study, the following parameters were analyzed: 1) tension, or the state of anxiety, excitement, and failure to relax accompanied by muscle tension; 2) rest, or the state characterized by the ability to relax, inclusive of muscle relaxation, the possibility to distance oneself from external and internal irritators, and to stay in a state of relative calm.

With the help of the MUSE neuro-headband, we managed to establish the time proportions between the respondents' states of relative rest and tension prior and upon presenting the stimulus words, as well as to mark out specificities of their responses to a stressor. To establish whether or not there exists a statistically significant difference in average values within the first, the second and the third study series, that is, to know the examinees' response to stimulus words, we have made use of the Student's t-test for dependent samples.

Comparing the average "Tension" criterion values available for the Series 1 and 2, we have found that the tension rises in respondents with low level of social feeling. The average value of tension made 20% for Series 1, and it was 21,55% for Series 2. With that, statistically significant differences were detected ($p<0,05$). Respective data are presented in Table 6.

At the same time, no statistically significant differences were found in average values within Series 2 and 3 where they make 21,55% and 21,35% correspondingly. That was the proof that the examinees of that group were not promptly (within 10 minutes' period) able to calm down after they heard the stimuli words, and gain their previous state of relative rest. Respective data are presented in Table 7.

As to the values found within the "Rest" criterion, the statistically significant differences were observed in the same between Series 1 and 2 in the group of the examinees with low level of social feeling, with average figures making 37,25% and 32,10% correspondingly. The data are presented in Table 8. That means that the hearing of the stimuli words resulted in worsening of the state of rest in the respondents.

Whereas no statistically significant differences in Series 2 and 3 were detected between the average values related to the "Rest" criterion, these average values amounted to 32,25% and 32,20% correspondingly. That is, the respondents could not quickly calm down and get back to the state prior to application of stimuli effect. Respective data can be found in Table 9.

With respect to respondents with high level of social feeling, their distinctive specificities were as follows: when the "Tension" criterion average values were obtained, no statistically significant differences were found between them in Series 1 and 2 (average figures amounted to 5,85% and 6,10% correspondingly, see the values presented in Table 10). Similarly, no statistically significant differences were detected in average values obtained for Series 2 and 3 (6,05% and 5,85% correspondingly, see the values presented in Table 11). It is interesting to mention that the average values for Series 1 and 3 were the same, both amounting to 5,85%, that is, even after the slightest changes in the psychic status, the examinees were able to gain

their previous state. We saw that the respondents almost did not respond to stimulus words, which is the evidence of their ability to cut somewhat off from the external irritants.

Similar figures were obtained with respect to the "Rest" criterion. There were no statistically significant differences in average values of Series 1 and 2 – 55,30% and 55,10% correspondingly (see Table 12 for respective results). Noer there were statistically significant differences in average values of Series 2 and 3 – 55,15% and 55,20% correspondingly (see Table 13). These results once again prove that the respondents with high level of social feeling do not only weaker respond to stimulus words, but quickly gain their previous state.

As to the examinees with average level of social feeling, the results were as presented hereunder. There exists a statistically significant difference between the "Tension' criterion average values found within Series 1 and 2 - 13,84% and 15,16% correspondingly. That means that the examinees rather sharply responded to stimulus words, which manifested itself in the rise of the level of their tension (see Table 14). However, the statistically significant difference was found in average values related to Series 2 and 3 – 15,10% and 14,40% correspondingly. That is, despite the increase of the level of tension, , the examinees were able to lower it within a short period of time, and get relaxed (see the values presented in Table 15).

With respect to the "Rest" criterion, no statistically significant differences in average values within Series 1 and 2 were observed (44,00% and 44,45% correspondingly, see Table 16). However, the above-mentioned statistically significant differences were found in average values within Series 2 and 3 – 44,50% and 45,05% correspondingly (see the values presented in Table 17). That is, having to some extent responded to stimulus words, the examinees with average level of social feeling were found to be able to calm down and get back to their previous state of relative rest.

Conclusions

In the course of this study, having made use of the MUSE neuro-headband, we managed to establish some psychological specificities of individual's response to a stress factor. In particular, respondents with low level of social feeling, when addressed to with stimulus words characterizing current political, economic and social situation in the country, proved to be unable to promptly calm down and relax demonstrating rather high degree of tension and low – of rest.

On the contrary, those with high level of social feeling practically did not respond to stimuli, whilst the statistics found no changes in the parameters of their tension and rest. These examinees were able to abstract themselves from external irritants and stay in the state of relative rest and relaxation.

The student-age population with average level of social feeling showed a fairly strong response to the stimuli with simultaneous growth of tension. However, unlike other groups of respondents, these young people quickly gained back their state of relative rest which can be explained by their efficient application of coping strategies, meditation and relaxation practices, etc.

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