

Materials of Conferences

**THE STUDENTS' – ORPHANS'
RESPIRATORY SYSTEM FUNCTIONAL
STATE, AS THE PSYCHOSOMATIC
PREDISPOSITION MAKER**

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The psychosomatics frequent manifestations – these are the respiratory system diseases, but the first stress – the respiratory rate and pulse rate change are the induced reaction. The purpose of the study – is the prenosological diagnostics of the students' respiratory system functional disorders, as the marker formation of the psychosomatic diseases, having taken into account the students' social characteristics. The students' two groups have been examined (e.g. 148 students – orphans and 148 persons, who are not orphans). The respiratory system state and the propensity to the psychosomatic diseases have been assessed. The flows decrease at the level of 25 and 75% the exhaled lung volume (MVR25 and MVR75) and the high – speed performance at the students – orphans, having indicated the patency violation of the peripheral tracts. The stress load has been appeared to be higher at all the young men, than that of the young girls; moreover, the stress had been significantly higher in the group of the young men, who were not the orphans. The spirometry and the psychometry can become the formation diagnostics by the basic method of the psychosomatic diseases at the students.

The part of the somatic pathology is being formed against the background of the stress factors, and it is the psychosomatic diseases manifestation. The lungs, under the actions conditions upon the human body of the environmental factors, as the «frontier» human organ, they are taken the significant role in the human body adaptation. The increased contribution of the respiratory system in the homeostatic responses is also associated with this system participation to be maintained the thermal balance [2]. Furthermore, the most common and frequent manifestations of the psychosomatic medicine – these are the respiratory system diseases, but the first stress – the respiratory rate and pulse rate change are the induced reaction [1, 5, 9].

The KPIO indicators analysis of the expiratory forced vital capacity of the lungs is allowed to be revealed the following: the bronchial conduction violation, these violations severity rate, and as well as the level of the lesion. The initial part of the flow – volume curve is characterized by the central respiratory tracts patency. The indicators' decline of the FEV1 (e.g. the forced expiratory volume per 1 sec.), PEF (e.g. the peak expiratory flow), and MVR25 (e.g. the maximum volume rate at the

level of the FVCL 25% exhalation) with the curve's good reproducibility is indicated on the large bronchi' patency violation. The flows' reducing at the level 50 and 75% of the exhaled lung volume (e.g. MVR50 and MVR 75) and their high – speed indicators' performance (e.g. the average velocity in the site of FVCL 25–50% and 75–85% – OC25 – 50% and COC75 – 85%) is characteristic for the patency violation of the peripheral respiratory tracts. Thus, the total obstruction is characterized by all the parameters' decrease, the area site decrease under the curve, the expiratory time increase, but in the severe cases – and the FVCL value decrease [2].

The main purpose and the basic tasks of the study are the following: to be tested the hypothesis on the combined use possibility of the spirometry and the psychometry, in order to be prevented the psychosomatic diseases' and disorders' formation at the students. To be selected and matched the individual medical and psychological techniques of the prenosological psychosomatics diagnosis, having taken into account the students' social characteristics.

So, the special orphan group has been allocated and separated – 148 students from the different courses and the faculties of the OSU and the special control group by the case – control type, who are not the orphans, – 148 students from the different courses and the faculties of the OSU. Thus, the study and the assessment of the respiratory system state and their propensities to the psychosomatic diseases have been performed in the both groups. So, the spirometry has been performed at the АПК «Spiro – Spectrum» of the «Neusoft» Company with the use of the «Quiet Breathing/LVC» special tests (e.g. it is measured the lungs vital capacity, the inspiratory reserve volume, and the respiratory volume), «the Forced expiratory volume» (e.g. 25 respiratory parameters: the volume, high – speed, temporary and relative ones) and «the Maximum lungs ventilation» (e.g. it is specified the maximum amount of the lungs ventilation volume, in recalculating terms of per one minute and the respiratory rate) [7]. So, the psycho-testing has been conducted with the life events scale using (e.g. G.E. Anderson) [3] in the «NC – Psychotest» computer center (e.g. «Neurosoft» Ltd., Russia, Ivanovo). This scale is designed to be measured the student- and the college-aged individuals' the stress load, as the basis of the psychosomatic diseases' formation. They are determined the degrees of the emergency risk of the disease, they are predicted the depression onset. To be measured the stress level, it is necessary to be noted those events in the scale, that have been occurred during the year (e.g. 12 months). The scale is consisted of the 45 items, having described the most common life events that are associated with the high level emotional stress (e.g. the stress

factors). The scale's each items is rated in the points on the scale, which are being summarized up, in the future.

All the data have been processed by the variation statistics methods with the use of «Statistica for Windows 6.0» и «StatPlus Professional», «Version 2009» for Windows software packages of the application programs. Then, the normality checking of the quantitative traits by criterion of the Shapiro-Wilk test, Kolmogorov-Smirnov/Liliforca, D'Agostina kurtosis had been rejected, in this connection, it was found, that the quantitative traits are not followed to the normal distribution. To be compared the both independent samples, it has been used the non-parametric U-criterion Mann – Whitney (e.g. Mann-Whitney U test), and also the Kolmogorov – Smirnov test, and also the Wald – Wolfowitz series test [6].

At the young girls of the first group, the middle – group values of the MVR25 exh., MVR75 exh., and COC25-75 exh. have been made up 67,7; 71,5; 87,2% by proper, having suggested on the bronchial patency worsening, at the level of the medium and the small bronchi. At the young men of the second group, it has been observed the bronchial patency reduction, only at the level of the medium bronchi (e.g. MVR50 inh. – 81,7%). So, the MPV increase (e.g. for 17,7%) and the BR reduction have been observed only at the young men of the second group. The volume indicators dynamics at the young men: the significant differences by the groups have been on the indicators, as FEV1/ MEFV and FEV1 with the predominance in the second group, and FEV1/LVC, LVC inh. and MEFV, which have been higher at the young men – orphaned. As for the first group of the young girls, then, the volume indicators have been lower, than those of the second group of the young girls, and they have been statistically significant – FEV1/LVC and LVC inh. (e.g. $p = 0,0003$ and $0,0001$, respectively).

At the data analysis, the average values КПО MEFV, as at the young men, well as at the young girls, have been appeared to be higher in the second group. Especially, it is concerned the high – speed parameters: MVR25, MVR50, and MVR75, and at that, the difference has been become more significant, at the level of the turbulent and the laminar flows (e.g. MVR25, and MVR75). The COC 25 – 75exh. specific features, peculiarities, and their characteristics have been significantly higher, at the both, as at the young men, well as at the young girls in the first group, which is quite typical for the patency violation of the peripheral respiratory airways.

By the scale of Anderson, the differences by the groups at the young girls have been appeared to be quite unreliable. In the first group, the stress load level has been equal to – 461,76 points, and in the second one – 448,97 points. However, the

level itself of the stress load has been appeared to be high, by the score assessment. At the young men, the stress load has been appeared to be higher, than at the young girls, and at that in the second group of the young men the stress has been significantly higher (e.g. $p = 0,0054$), than in the first one.

Conclusions

1. The stress load has been appeared to be high for all the students. At the young people, the stress load has been appeared to be higher, than at the young girls, especially, in the group of the young men, who are not the orphans.

2. At the students – orphans the flows decrease is observed at the level 25 and 75% of the exhaled lung volume (MVR25 and MVR75) and the high – speed indicators (e.g. the average velocity on the site is 25 – 75% MEFV – COC25 – COC75%), which is quite typical for the patency violation of the peripheral respiratory tracts.

3. The data analysis of the students' spirometry and the psychometry can be the basic method of the psychosomatic disorders and violation formation preventing at the students.

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