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MUSICAL EDUCATION AND COGNITIVE FUNCTION IN INTERNATIONAL ACADEMIC SOCIETY: HOW TO USE IT FOR TEACHING MEDICINE

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Abstract. This article contains one of the ideas about making education more effective. We studied how musical skills can correlate with the indices of cognitive functions both in students and in the elderly. Our research data included the results from 200 students and 50 old responders. Obtained results demonstrate that music education has a significant impact on cognitive function.

Key words: teaching neurology, cognitive function, international academic society

Introduction. Nowadays people are used to image treatments as a period of consuming medicines, many students think that tablets which were prescribed by doctors are the only way to get recover. However it is a fatal error. First of all, the main healer is our organism and responsibilities of doctors are to make appropriate conditions for certain healing process or to supply organism with necessary substances. For these responsibilities doctors often prescribe medicines most of which have side effects and teach students to do so. The international paradigm offers that if there is no extra-need for medicines, doctors initially can try unconventional treatments. Unconventional medicine or alternative medicine is a collective name for therapies that have in common that they are not studied much classically in medical schools.

One of the most spread diseases among the elderly population is impairments of cognitive function. Cognitive function (CF) is the number of supreme brain abilities, which provide a person with the capabilities of being human. These capabilities are thinking, spatial orientation, comprehension, calculation, education, speech, memory, making decision, ability to explore and some others. The first signs of an abatement in these abilities could include impaired attention and memory. If the condition continues to worsen, it can cause the manifestation of cognitive degradation sings. Eventually it can lead to dementia. Majority confuse cognitive function with intelligence. Intellect from Latin language «intellectus» that means «perception», «understanding», «reason» or «mind» — level of psyche, which includes abilities of realizing, abilities of learning and remembering based on experience, using knowledge to make opportunities and to control environment. Ability to realize problem and find the solution, which includes cognitive abilities such as: feeling, perception, memory, thinking and imagination. In order to show difference between CF and intellect, we can image, that if intellect is a building, then cognitive function is a fundament of this building. It means without healthy CF you cannot increase your intellect level.

One might wonder, «Which factors lead to worsening of CF?», «Which factors lead to strengthening of CF?», and «How to keep CF healthy?». CF starts the development from the birth of child and continuous until age 19-20. Neurological and psychological diseases during period of CF`s development can cause the cognitive dysfunction. Nevertheless there are lots of factors and activities which strengthen the CF. Five factors which positively influence to CF, were chosen and impact each of them was studied. They are «Musical education», «Lan-

guage learning», «Reading literature», «Mathematics» and «Quality of sleep». By training these factors until elderly age, one can keep her CF healthy.

Purpose. To study influence of musical education on cognitive function among youngsters and elderly population.

Material and methods. Musical education method represents impact of practicing on musical instruments and assimilation of musical sciences. This method can be included into the management of different disorders as an active method. Unlike the passive method, in this method a patient plays melody herself. Consequently, patient training with musical skills takes a very long time and according to this, treatment is carried out very long. A good solution to this problem could be the addition of practical music lessons in the school and university programs. The musical skill which learned before adulthood will accompany a person all her life. In old age, this skill can become of the main factors for keeping healthy CF. However each of these factors should be proved by research in order to recommend this method to the patients with cognitive impairments. For the research, 200 students aged 15 to 19 and 50 seniors over the age of 60 were tested. One hundred out of our 200 students had musical skills and the other half had not. Among 50 seniors, 25 were musicians, the rest were ordinary old people. We used classical MoCA test which is widely used all over the world for cognitive assessment.

Test devided into 8 stages, each successfully completed stage gives the points. The maximal number of points that was possible to achive was 30. If the number of total points is less than 26, it means that tested person has a impairments of CF. In the case, when the the total score is less than 18, we can think of dementia in a responder.

Results. All obtained data were compaired based on their features. Pie charts (Pic.I), (Pic.II) show statistic of research based on results.

Pie charts A and B demonstrate the ratio between students with absolutely good CF and students with slight impairments of CF. Pie chart A is the ratio among the students with musical education and another pie chart is the ratio among the students without musical skills.

Percentages of pie chart A show that 1% out of 100 students with musical education had impairment in CF, and other 99% are students with healthy CF. In pie chart B , there can be obserbed significant changes. Persentage of students with cognitive impairments increased up to 7%, consequently percent of healthy students equals to 93.

Based on percenteges, by 6% there are more students with cognitive impairments among the students without musical skills. So, the difference is not so considerable.

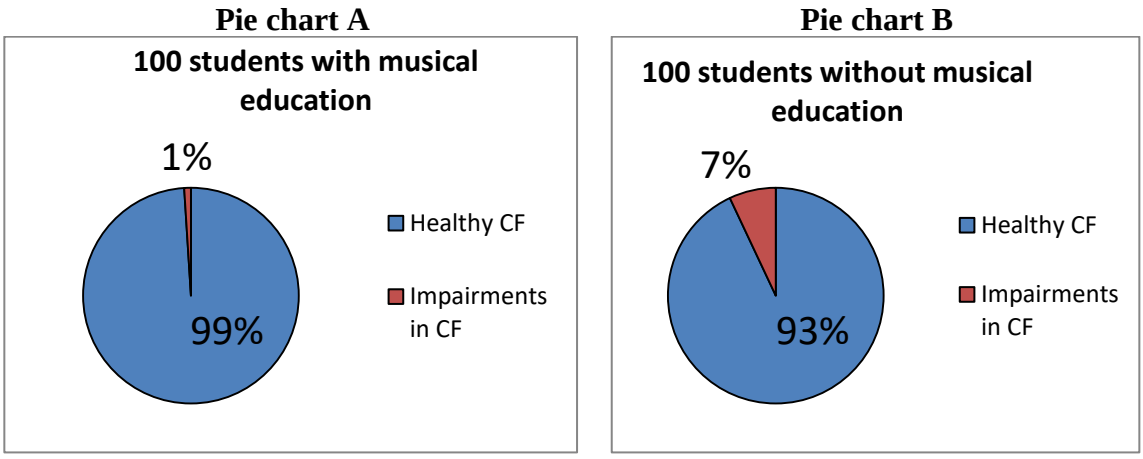

Fig. 1. The indexes of cognitive impairments among students

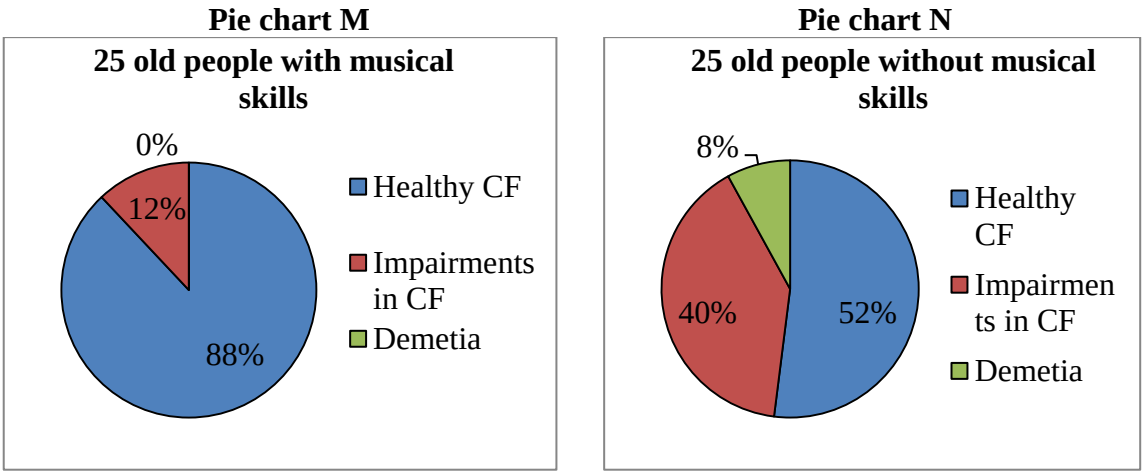

Fig.2. The indexes of cognitive impairments among elderly population

These two pie charts illustrate the proportion of old people with healthy CF, with impairments in CF and with dementia. Pie chart M presents propotion among elderly population with musical skills, meanwhile pie chart N contains data of old people without musical skills. Overall, the main difference between these pie charts is that dementia was not observed in our study, among old people with musical skills. In pie chart M, there are two indexes, index of seniors with healthy CF which equal to 88% and rest of persentages belong to group of old people with cognitive impairments.

Next pie chart N, demonstrates considerable changes by compairing with pie chart M. Index of dementia, which was equal to 0, raised to 8%. Likewise index of dementia, index of cognitive impairments had experienced perceptible increase. Compared to pie charts M and N, the index of cognitive impairments increased by 28% and reached 40%. Consequently, rate of healthy CF slides from 88% to 52%.

Conclusion. Taking to account all aspects, it can be concluded that musical education could be one of the unconventional treatments which considerably impact the CF.

The best way to use method of musical education is to incorporate practical music lessons to syllabus of schools and universities, including medical schools. Firstly, as was mentioned earlier, healthy CF will lead to increasing inteligence which is one of main purposes of the students. Secondly, all students , who learnt musical skills, in old age will probably have less danger of cognitive impairments and dementia. It is especially important when we teach students from different countries in international academic society.

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