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INFLUENCE OF DISTANCE LEARNING ON MENTAL HEALTH OF APPLICANTS OF HIGHER EDUCATION INSTITUTIONS OF THE STATE EMERGENCY SERVICE OF UKRAINE

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Abstract

The problem of the impact of distance learning on the mental health of applicants of higher education institutions of the State Emergency Service of Ukraine is considered in the article. It was found out that distance learning has both positive and negative aspects. The most significant positive aspects include the possibility of distance learning, which is important in the conditions of prevention the spread of COVID-19 among the applicants. There are also a number of advantages in mastering of important professional skills, including: the development of independence; the formation of critical thinking; improving the use of modern information technologies and others. At the same time, it has been determined that online learning in the conditions of indefinite duration and social isolation has a negative impact on the mental health of applicants of higher education institutions of the State Emergency Service of Ukraine. The indicators of the studied criteria do not depend on the age peculiarities of the respondents, but at the same time they depend on the educational status and gender factors. The students of higher education institutions have a decrease of general well-being and quality of life, and an increase of anxiety. No significant differences were found among the cadets. The respondents of both groups have difficulty with attention focusing and memorizing of new learning material. At the same time the authors presume that if the duration of quarantine measures is increased, it is quite possible to break the adaptation barrier among the cadets, that will have a negative impact on their mental health and social skills.

Keywords: distance learning, COVID-19, health, mental health, applicants of higher education, the State Emergency Service of Ukraine.

1 INTRODUCTION

The problem of mental health of the subjects of educational process has always been the center of attention of psychologists, teachers, doctors, but recently it has become increasingly important. One of the reasons of such situation is the great change in the conditions of the educational process and lack of data concerning the influence on the applicants of higher education of a sharp, unplanned transition from full-time to distance learning under the conditions of indefinite duration and social isolation.

In March 2020, the Director General of the World Health Organization, Tedros Adhan stated about a global pandemic of coronavirus infection COVID-19 [1]. Due to the rapid spread of the infection, governments around the world have taken unprecedented measures: travel restrictions, curfews, the abolition of sports and cultural activities, the closure of various institutions and organizations, including educational institutions. More than 1,2 billion participants of the educational process were forced to leave classrooms, laboratories, training areas and sit at the computers learning the distance education technologies [2], including more than 2 thousand applicants, cadets and students of establishments of higher education of the State Emergency Service of Ukraine.

The rapid transition to online learning has affected, first of all, the subjects of the educational process, cadets and students of higher education institutions. Under the conditions of national quarantine, they studied from home using a computer, tablet or other gadgets. Despite of having so many benefits of such form of learning, including the development of independence in the knowledge deepening, the formation of critical thinking, improving the skills in modern information technology, scientists state the significant shortcomings, especially in the case of possible problems with physical and mental health.

Today it is already known that during the distance learning the subjects of the educational process feel the physical health defects, including: deterioration of visual acuity; pain in the back and neck; computer headaches; weight gain; insomnia; less often, but there are much more serious problems, such as carpal tunnel syndrome, tendinitis, traumatic epicondylitis, de Quervain's disease, tendosynovitis, etc. [3, 4].

However, the problem of the impact of distance learning on the mental health of applicants remains poorly explored.

2 PURPOSE

The purpose of the research is to study the impact of the distance learning on mental health of cadets and students in higher education institutions of the State Emergency Service of Ukraine in the conditions of uncertain duration and social isolation, depending on the educational status of the respondent (cadet/student), age and sex.

3 METHODOLOGY

The general scientific methods (analysis, synthesis, systematization and generalization) were used to solve the research problems. Our study involved 150 applicants from the Cherkasy Institute of Fire Safety named after the Chernobyl Heroes of the State Emergency Service of Ukraine, of which 76% - boys, 24% - girls. Among the respondents - 70 cadets and 80 students. The age range of respondents was $21,0 \pm 1,4$. For the psychodiagnostic examination the "State-Trait Anxiety Inventory (STAI)" and measure WHO5 – well-being index (that reflects a person's subjective well-being and quality of life and can be a screening method for diagnosing depression) were used [4].

To identify the links between psychoemotional disorders and social factors, we used the author's questionnaire, which contained the questions about the specifics of educational activities and leisure during lockdown, and were structurally divided into three blocks: teaching load, general condition and mood, social communication.

All questionnaires and inventories were used in electronic form and were filled by respondents two times: before lockdown (March 2020) and during lockdown (May 2020).

For quantitative data processing such methods of mathematical statistics were used: correlation analysis by Pearson's correlation coefficient for analysis of mutual relations of the psychological characteristics of cadets and Student's t-test to determine the significant differences on the level ($p \leq 0.05$). The statistical processing of the obtained data was performed using the computer program SPSS 20.0.

4 RESULTS

According to the results of the study, it can be noted that the vast majority of applicants of higher education during the full-time study in a higher education institution had a low level of reactive anxiety (92% of cadets and 84% of students). 8% of cadets and 12% of students had moderate anxiety. It was diagnosed only in 4% of students the high level of anxiety. The personal anxiety also did not differ significantly from the status of the applicant. The vast majority of applicants (60% of cadets and 71% of students) had a moderate level of anxiety; 37% of cadets and 25% of students had low level of anxiety; it was found out the high level of anxiety in 3% of cadets (that was connected with the personal problems) and in 4% of students (that was connected with the personal and academic problems).

Low-level reactive anxiety is typical for 72% of male cadets and 65% of female cadets, and 78% and 61% of students, respectively. 63% of male cadets and 51% of female cadets have the moderate personal anxiety. 67% of male students and 76% of female students have the moderate personal anxiety.

The WHO 5 study showed the absence of significant differences according to the index of subjective well-being and quality of life between the comparable groups of applicants. The vast majority of both cadets (78%) and students (81%) have the best level of well-being. At the same time, 78% of male students show the greater life satisfaction, while male cadets have only 63%. In our opinion, this is due to the peculiarities of the cadets' training, as they not only study but also serve: they have rest restrictions, they have daily duty, and they feel constant control by their superiors.

The results of a survey based on a specially developed questionnaire showed that on average cadets spend 4 hours in front of gadgets, while students spend 5-6 hours. At the same time, cadets spend more time outdoors than students. The vast majority of applicants (81% of cadets and 74% of students) of both groups prefer real-life communication.

The results obtained in the process of distance learning showed that 65,4% of cadets and 80,1% of students have the moderate and high level of personal anxiety with the low level of reactive anxiety. The

anxiety indicators and the WHO 5 general well-being index do not depend on the age characteristics of the respondents, but at the same time they depend on educational status and gender factors. The cadets (70,3% of male and 60,2% of female) have the moderate level of anxiety with a tendency to high, students have the high, especially evident in female (85,1%), which has an impact on the manifestation of psycho-emotional disorders in stressful conditions.

It was found out that the time spent in front of the computer (tablet, smartphone) in the case of distance learning increased in 71% of cadets and 83% of students. At the same time, the time spent by applicants outdoors decreased by an average of 17,2% among the students and 15,5% among the cadets, that affected on the decrease of physical activity. Besides 43% of cadets and 38% of students of higher education institutions noticed the difficulty concentrating in comparison with the full-time education, the problems with the memorizing of new educational material.

Respondents' opinions concerning the general well-being and quality of life during the lockdown were divided in the following way: 47% of cadets and 31% of students said that they felt better at home than when they attended a higher education institution in person; 25% of cadets and 39% of students at home felt more tired; 28% of cadets and 30% of students said that their general well-being had not changed. At the same time, 88% of cadets (63% of male and 37% of female) said that they had more time to sleep at home, that is understandable because the applicants were out of service.

According to the analysis of the data we obtained, the social communication was violated in higher education applicants, so 71% of all surveyed applicants noted that they lacked the real communication with both teachers and peers. 29% of respondents explained that they had enough communication through the social networks.

5 CONCLUSIONS

Summarizing the results of our study, it can be noted that the distance learning has both positive and negative aspects. The most significant positive aspects include the possibility of distance learning, which is important in the case of preventing the spread of COVID-19 among the applicants. There is also a number of advantages in mastering important professional skills, including the development of independence, the formation of critical thinking, improving the use of the modern information technology. At the same time, such form of education in the conditions of indefinite duration and social isolation, as our study proved, has a negative impact on the mental health of applicants of higher education institutions of the State Emergency Service of Ukraine, first of all the students. It was found that the studied indicators do not depend on the age factors of the respondents ($r = 0,856$), but at the same time have a dependence on the educational status ($r = 2,750$) and gender factors ($r = 2,910$). Thus, students have the lower indicators of the studied criteria of mental health: the index of general well-being and quality of life ($t = 2,156$), the level of anxiety ($t = 2,370$) compared with the group of cadets during the lockdown. In the latter, although there is a tendency to reduce the studied data, but statistically they are not confirmed in any case, as well as there were no significant differences between groups in the period of full-time study (at $p \leq 0,05$). Respondents of both groups during the online learning also have a lack of social communication and problems with the functioning of cognitive properties. It is especially noticed in female.

The difference in the obtained results between the groups of applicants during the lockdown, in our opinion, is due to the professional selection for studying and training of cadets, especially according to the criteria of psychological stability. However, it should be noted that the study did not cover a long period of time (March-May 2020), with the further distance learning it is possible to violate the adaptation barrier in cadets, that will negatively affect on their mental health and social skills.

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