



ANXIETY LEVEL AMONG STUDENTS AND ITS RELATION TO SELF-ASSESSMENT OF HEALTH

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Author contribution: A – study design; B – data collection;
C – statistical inference; D – manuscript production.

Abstract

Aim is to assess the anxiety level among university students and establish its relation to self-assessment of health.

Methods. These are the results of examination of 62 students of Borys Grinchenko Kyiv University among which there were 30 males (48,4 %), and 32 females (51,6%), average age of the surveyed was $19,55 \pm 1,97$ (95 % CI: 19,05–20,05) years old. Types of anxiety were defined according to C.D. Spielberg and Y.L. Khanin; health state was defined by using V.P. Voitenko questionnaire (1991) representing self-assessment of health.

Results. The state of anxiety has been characterized among the university students in 59,7 % (37/62) of cases as adequate state anxiety (very low and low), and in 66,1 % (41/62) of cases as average level of trait anxiety. According to self-assessment, among half of the students (51,6 %; 32/62) unsatisfactory and bad health states were revealed. Current health state of the students was considerably connected to state anxiety ($r=0,53$; $p=0,00001$) and trait anxiety ($r=0,45$; $p=0,00023$), in both cases the connection was direct, of average intensity and statistically significant.

Conclusions. The state of anxiety has been characterized as adequate state anxiety (very low and low), and as average level of trait anxiety, and current health state – as unsatisfactory and bad (51,6 %; 32/62), being defined as direct, of average intensity, and considerably related to state and trait anxiety.

Keywords: student, state and trait anxiety, self-assessment of health.

Introduction

Healthcare of student youth being a special category of population in social and ontogenetic aspects remains one of the priority tasks in preventive medicine. Student years mostly fall on youthful age (17-21 years old) when biological maturation comes to the end, morphofunctional indicators reach their definitive level, and interaction of all physiological systems of organism takes shape. At this age, the impact of academic studies demanding a great deal of intellectual and psychoemotional strain, perceiving and processing various information under shortage of time and growth of requirements to extent and quality of knowledge is connected to specific peculiarities of lifestyle and leisure of students. It becomes the reason of extreme sensitivity of students to adverse

social and environmental factors, development of intellectual fatigue, exhaustion and failure of adaptative compensatory mechanisms creating potential health risk and promoting morbidity and social disadaptation [1, 2, 12 16].

Anxiety is an increased propensity of a person to go through apprehension in any life situations including the ones when there is no reason for it. The issue of anxiety impact on students has been investigated by many scientists. Reasonable changes of mental state and anxiety are typical for first-year students of higher education institutions. This cohort of students is characterized with high level of anxiety development and «internal» strain [5, 8, 9, 15, 14]. During the first year of studies at a higher education institution correlation between emotional processes and somatotypes



is shown: among the representatives of astenoid somatotype trait anxiety, general state and mood are a bit worse [7].

The anxiety changes indicated are caused by numerous reasons among which the main ones are new conditions of studying, the system of education different from the school one, higher pace of studying, a great extent of learning materials, change of the common surrounding, low level of autonomy, lack of persistence and cooperativeness, and other aspects of students' lives [3, 5, 17].

Studying at a higher education institution leads to improvement of mental status and decreasing of students' anxiety. Some authors give the data that every other year of studying there is indicated a steady tendency for stabilization of self-esteem, decreasing of trait anxiety, aggressiveness display, domination, increasing of abilities to use the styles of individual reaction in conflict situations, growth of communicative and organizational activities, growth of purpose to self-improvement, etc [10, 11]. Currently, there are not enough complex scientific researches showing relation of mental state and anxiety level to level of somatic (physical) health.

Research objective is to assess the anxiety level among university students and establish its relation to self-assessment of health.

Methods

62 students of Borys Grinchenko Kyiv University have been examined. There were 30 males (48,4 %), and 32 females (51,6%), average age of the surveyed was $19,55 \pm 1,97$ (95 % CI: 19,05–20,05) years old. Types of anxiety were defined according to C.D. Spielberg and Y.L. Khanin [4]. The Spielberg-Khanin questionnaire allows us to establish the levels of trait and state anxiety. It requires answering 40 questions, coding the statements given by the surveyed into points, counting the total number of points, determining a total indicator for each kind of anxiety. Total indicator is observed as the level of development of a particular kind of anxiety for the surveyed. The higher the sum is, the more the anxiety is distinct. According to Spielberg-Khanin methodology, 5 conclusions are formed about the level of anxiety:

- very high anxiety – 3,5-4,0 points;
- high anxiety – 3,0-3,4 points;
- average anxiety – 2,0-2,9 points;
- low anxiety – 1,5-1,9 points;
- very low anxiety – 0,0-1,4 points.

For self-assessment of health the V.P. Voitenko questionnaire (1991) was used [18]. The

questionnaire provides answering 28 questions. Then the sum of points is counted (the higher the sum of points is, the worse the state of health is), and the conclusion on the health state of the surveyed is given:

- 0 points – good health state;
- 1-5 points – satisfactory health state;
- 6-10 points – unsatisfactory health state;
- 11-20 points – bad health state;
- more than 20 points – very bad health state.

Statistical description of the sample was implemented using the method of order statistics assessment. There were measured: average mean value (M), mean square deviation value (σ) and 95 % confidence interval (95 % CI). Relation between anxiety and self-assessment of health being given as qualitative indicators was accomplished by calculation of χ^2 criterion, and being given as quantitative indicators – by calculation of nonparametric test of Spearman. Data processing was completed using STATISTICA 6.0 software product (StatSoft Company, USA).

Results and discussion

62 students of Borys Grinchenko Kyiv University have been examined: 30 males (48,4 %), and 32 females (51,6%), average age of the surveyed was $19,55 \pm 1,97$ (95 % CI: 19,05–20,05) years old. Types of anxiety were defined according to C.D. Spielberg and Y.L. Khanin [4]. The Spielberg-Khanin questionnaire allows us to establish the levels of trait and state anxiety. It requires answering 40 questions, coding the statements given by the surveyed into points, counting the total number of points, determining a total indicator for each kind of anxiety. Total indicator is observed as the level of development of a particular kind of anxiety for the surveyed. The higher the sum is, the more the anxiety is distinct. According to Spielberg-Khanin methodology, 5 conclusions are formed about the level of anxiety:

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It is known that trait anxiety is relatively stable and is not related to situation as it is a personality trait, and state anxiety, on the contrary,

can be caused by any specific situation. That is why defining these two kinds of anxiety among university students is fundamental. All the students were surveyed a month after the beginning of studies at the university (in October). In general, within the group of the surveyed students the trait anxiety level corresponded to $2,20 \pm 0,45$ (95 % CI: 2,08–2,31) points (average level), and the state anxiety level corresponded to $-1,88 \pm 0,50$ (95 % CI: 1,75–2,01) points (low level). The distribution of conclusions about two kinds of anxiety is given in the table 1.

From the table 1 we can see that 66,1 % (41/62) of students had average level of trait anxiety. It is almost twice more than the low and very low levels of trait anxiety summed up together – 32,2 % (20/62). According to the levels of state anxiety the surveyed students were divided another way: in this case average level was defined among 38,7 % (24/62) of students, and the low and very low anxiety levels summed up together were among 59,7 % (37/62) of students.

Table 1

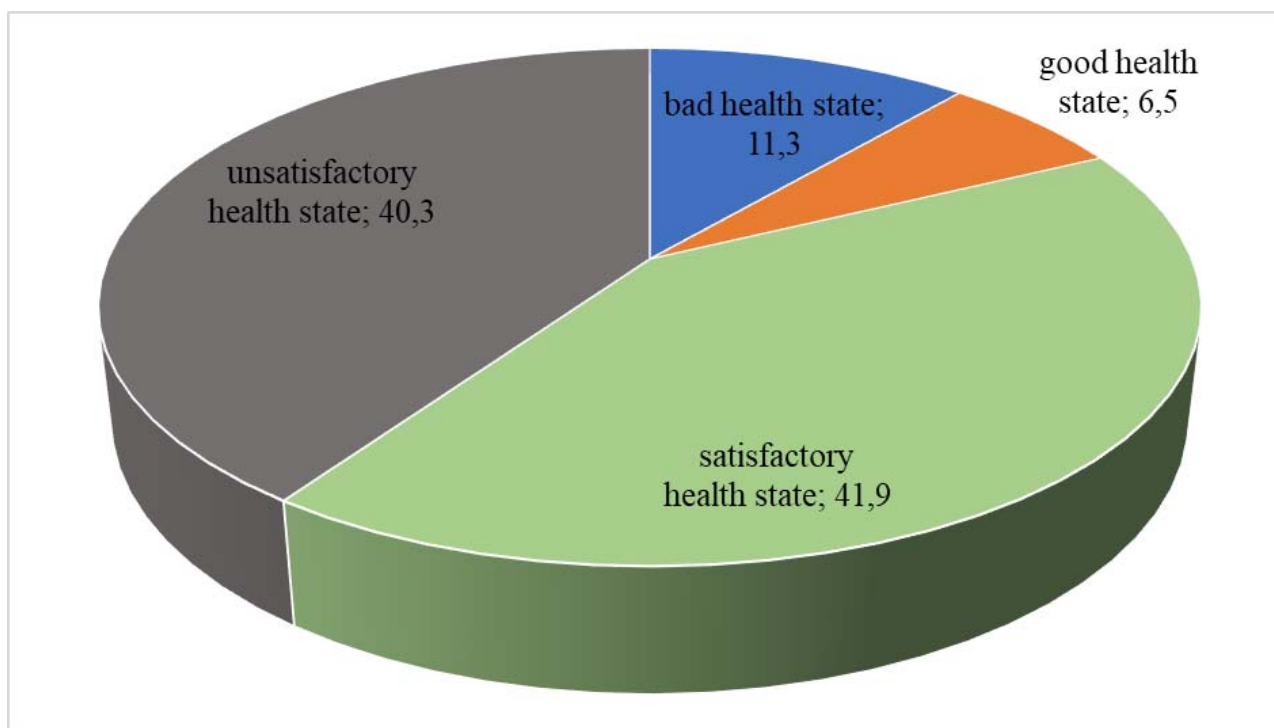
Distribution of conclusions on anxiety among students according to Spielberg-Khanin methodology

| Anxiety levels | Trait anxiety | | State anxiety | |
|----------------|---------------|------|---------------|------|
| | Abs. | % | Abs. | % |
| Very low | 3 | 4,8 | 14 | 22,6 |
| Low | 17 | 27,4 | 23 | 37,1 |
| Average | 41 | 66,1 | 24 | 38,7 |
| High | 1 | 1,6 | 1 | 1,6 |
| Very high | 0 | 0 | 0 | 0 |

So, by state anxiety for most students (59,7 %; 37/62) studying at university at the beginning of academic year did not cause strain, concern, preoccupation or nervousness. These students had quite adequate emotional reaction to beginning of studies at university. Only one-third of the students (38,7 %; 24/62) having average level of state anxiety were concerned about beginning of studying at university. Though, 2/3 of the students (66,1 %; 41/62) by the level of trait anxiety tended to be constantly anxious caused by not only attitude to studies but other life stimuli. Taking into account that the discussed level of trait anxiety is

average, we can consider that it shows natural and compulsory peculiarity of vigorous activity in the years of youth.

Further the analysis of the students' health state was conducted according to their self-assessment. Satisfactory health state was revealed among 41,9 % (26/62) of students, unsatisfactory health state – among 40,3 % (25/62) of students, bad health state – among 17,3 % (7/62) of students, and good health state – among 6,5 % (4/62) of students (pic. 1). So, among the most surveyed students (51,6 %; 32/62) unsatisfactory and bad health state was revealed.



Pic. 1. Distribution of conclusions on students' health state according to their self-assessment (%).

Further objective of the research was to establish the relation of anxiety to self-assessment of health among the surveyed students. During studying the correlation between distribution of findings on the students' anxiety level and distribution of findings on their health state being qualitative indicators the χ^2 Pearson criterion was used. For the pair of indicators «self-assessment of health-state anxiety» it was 13,92 ($p=0,12495$), and for the pair «self-assessment of health-trait anxiety» it was 8,07 ($p=0,52703$). In this case, there was not revealed statistically significant relation of distribution of findings on the students' anxiety to distribution of findings on their health state.

Different findings were received during studying the relation of anxiety to self-assessment of health in case when the mentioned indicators were presented as sums of points which were qualitative indicators. In this case, a nonparametric test of Spearman was counted. According to Spearman test, the relation of self-assessment of health to state anxiety was 0,53 ($p=0,00001$), and the relation of self-assessment of health to trait anxiety was 0,45 ($p=0,00023$). In both cases, the relation was direct, of average intensity, and statistically significant. This means that increasing of both kinds of anxiety was related to the students' deterioration of health state according to their self-assessment.

The findings received by us prove and complement the current ideas of students' anxiety levels. Our data has corresponded to T.V. Sinielnikova's findings of the research (2014), showing prevalence among most students of average anxiety level [13]. However, some authors indicate a greater number of students with high anxiety level. Thus, O.O. Strakhova and A.M. Kolomiets (2019) have given date on high anxiety level among 17 % of the students [15], and M.V. Krychfalushchii and co-authors (2015) лyшій M.B. have indicated that 16,9 % of students have low, 47,6 % have average, and 35,3 % have high levels of trait anxiety, and 27,5 %, 54,9 % i 17,6 % of state anxiety, respectively [6]. In our case, high anxiety level occurred only among 1,6% of students.

Conclusions

Anxiety state among university students is characterized in 59,7 % (37/62) of cases with adequate state anxiety (very low and low), and in 66,1 % (41/62) of cases with average level of trait anxiety. According to self-assessment, among half of the students (51,6 %; 32/62) unsatisfactory and bad health states were revealed. Current health state of students is considerably related to state anxiety ($r=0,53$; $p=0,00001$) and trait anxiety ($r=0,45$; $p=0,00023$), in both cases the correlation is direct, of average intensity and statistically significant. The established facts need to be



considered while planning recreation events for students during their studying at university.

Conflict of interests

The authors claim no conflict of interests.

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