

UDC: 159.91: 371.264

DOI: <https://doi.org/10.24195/2414-4665-2017-9-4>**Dmytro Kharchenko,***Doctor of Psychology, professor, head of the Department of Psychology,***Yuliia Chystovska,***PhD (Candidate of Psychological Sciences), associate professor,**Department of Psychology,**The Bohdan Khmelnytsky National University of Cherkasy,**81, Shevchenko Boulevard, Cherkasy, Ukraine,*

## **CORRELATION OF ANXIETY AND PSYCHOSOMATIC DISTURBANCES**

*The paper aims to study the level of state and trait types of anxiety, as well as the level of psychosomatic disorders in people with different degrees of anxiety. 187 students aged 18-43 years took part in the experiment. The following methods were applied in the research: in order to study the level of state and trait anxiety State-Trait Anxiety Inventory by Spielberger was used, the psychosomatic aspects of physical disorders were investigated using the Giesener Beschwerdebogen – a questionnaire designed to detect a subjective map of patients' physical suffering. The processing of the received data was carried out using statistical software Statistica v. 7.0 and SPSS v.13. The Student t-test was used to verify the reliability of the results obtained. According to inter-correlation analysis of the indicators of intensity of psychosomatic disturbances and anxiety, all psychosomatic complaints correlate both with state and trait types of anxiety. It has been concluded that the intensity of psychosomatic disturbances correlates with the level of both state and trait types of anxiety. It can also be concluded that people with high trait anxiety tend to have high state anxiety.*

**Keywords:** *state anxiety, trait anxiety, psychosomatic disorders.*

### **Introduction**

Psychological and psychosomatic disorders can arise as a result of the contradiction in the biological and social evolution of a person. In other words, the contradictions between the way of life of a modern person and physiological properties of his/her nervous system or physiological and environmental contradiction, as well as between social stereotypes of emotional expression and natural, physiological mechanisms of emotional response or socio-environmental contradictions [4]. Consequently, unfavorable socio-environmental conditions that cause emotional stress and increased anxiety can be the cause of psychosomatic disturbances.

The socio-environmental contradiction is connected with the confrontation between the natural instincts of a human being and social norms of morality. It is also aggravated by the phenomena of mass consciousness facing the instinct of self-preservation. These are today's economic shocks, the threat of unemployment, uncertainty in the future. In the period of social crisis, the growth of such tensions is contributed by the crises of social institutions of the society, the growth of crime, the threat of terrorism, war, etc., especially when they serve as a subject of speculation in mass media. All this in general can lead to so-called social-stress disorders [1].

Physiological and environmental contradictions are exacerbated by the rapid development of scientific and technological progress and related changes in the style of life, which makes great demands on the human nervous system. Thus, information overload can lead to information stress with subsequent negative influence on the human psyche. The physiological and environmental causes of harmful influence on the human psyche involve

hyperreflexion, that is, excessive, non-physiological propensity to rational thinking with the inhibition of its figurative and intuitive mechanisms. It can result in imbalance of functional asymmetry of the cerebral hemispheres, prolonged increased activity of the frontal areas of the brain or hyperfrontality. [5]. If a person cannot adapt to the information load, this can lead to a specific so-called information stress that results in an increase of the emotional support of thinking due to negative emotions, first of all anxiety.

The reduction of general physical working capacity and overall tonus is the result of hypodynamia, which is a cause of not only these unwanted changes, but also a decrease in reflex activation of the cerebral cortex and insufficient reflex stimulation of the internal organs, which may result in a series of so-called classical psychosomatic disorders. These psychosomatic disturbances from the evolutionary-physiological point of view can be caused by the orthostatic position of human body, in particular the emergence of cardiovascular system diseases [2]. It should be noted that according to World Health Organization data, today the highest mortality rate is due to cardiovascular disorders.

Excessive amount of easily digestible carbohydrates and synthetic ingredients in the modern human diet leads to violations of the internal ecology of the organism – the imbalance of microflora. This in turn leads to such somatopsychic effects as satisfaction deficit syndrome, decrease in the information value of a dish.

Such socio-environmental factors as extended light regime, high speed movement, and intense lifestyle lead to violations of individual biorhythms, shifting their synchronization with biological ones. This may be the cause

of unbalanced neurohumoral regulation, which is carried out at the hypothalamic-pituitary level [7]. In addition, the interbrain is a central part in the development of emotional stress. All these adverse socio-environmental conditions can lead to emotional stress, increased anxiety and probable psychosomatic disturbances.

The paper **aims to** examine the correlation between anxiety and psychosomatic disturbances.

The following tasks should be solved:

- investigating the level of reactive and personal anxiety.
- determining the level of psychosomatic disturbance in people with varying degrees of anxiety.

### Research Methods

In order to study the level of anxiety, we used scales developed by Charles Spielberger in 1966-1973. According to his conception, there are state anxiety as a condition and trait anxiety as a personal property.

State anxiety is a reaction to danger, which is either real or imagined, the emotional state of diffuse objectless fear, characterized by an uncertain sense of threat, in contrast to fear, which represents a reaction to real danger.

Trait anxiety is an individual psychological property that manifests itself in increased tendency to experience anxiety in various life situations, including those whose objective characteristics do not presuppose it. From the author's point of view, it is possible to measure the differences between two types of psychic manifestation, namely, between temporary features and relatively constant predisposition. Understanding anxiety in Spielberger's theory is determined by the following provisions:

1. Situations that constitute a certain threat for a person, which causes the state of anxiety. Subjectively anxiety is felt as an unpleasant emotional experience of varying intensity;
2. The intensity of anxiety is proportional to the magnitude of threat or significance of its cause. The duration of the state of anxiety depends on these factors.
3. People with high anxiety perceive situations or circumstances that potentially contain the possibility of failure or threat, more intensively;
4. The situation of anxiety is accompanied by changes in behavior or mobilizes protective mechanisms [6].

State-Trait Anxiety Inventory by Spielberger is a combined scale of three well-known tests: Cattel Anxiety Scale, "Anxiety Manifestation", Taylor Manifest Anxiety Scale and Welsh's Anxiety Scale. The inventory consists of two parts 20 tasks each. The first scale is designed to determine how the surveyed feels during the experiment, that is, to diagnose the current state, and the tasks of the second scale are aimed at analyzing how the subject feels in everyday life, that is, anxiety as a personal property is diagnosed.

Each scale has its own instruction; the duration of the survey is about 5-8 minutes. Every task is evaluated according to a 4-point scale. Verbal interpretation of the positions of the assessment scale in the first and second parts is different. The inventory allows individual and group use. In our case, individual version was applied.

State-Trait Anxiety Inventory was adapted to the Russian language by Yu. Khanin in 1978 [3]. He carried out the standardization of the technique and developed normative standards. The Ukrainian method was adapted by us, although the respondents were suggested both Russian language and Ukrainian language versions simultaneously.

Testing was carried out on a standardized form, designed specifically for such purposes.

Psychosomatic conditionality of physical incompleteness was investigated using Giesener Beschwerdebogen – a technique designed to identify a subjective map of physical suffering of patients suggested by E. Bruchler and J. Sinner in 1967 [3].

Standardization was conducted on a sample in Germany (n=1601 persons) and patients of the psychosomatic clinic of the University of Giessen (n=4076 people).

In Russia, standardization of the questionnaire was conducted in two samples: I – healthy respondents (n=286 people) and II – patients with neurotic and psychosomatic disorders (n=467 people). The study of psychometric characteristics using Giesener Beschwerdebogen for somatic complaints was aimed at calculating its validity and reliability.

The questionnaire consists of 57 complaints that can be attributed to such areas as general well-being, vegetative disorders, internal organs dysfunction. The degree of their intensity is estimated according to a 5-point scale. In addition to complaints, their dependence on mental or physical factors according to a patient is examined. The authors of the technique by means of factor analysis singled out four main and one additional scale:

Scale 1. "Exhaustion" – characterizes a non-specific factor of exhaustion, indicating a total loss of vital energy, the need for help.

Scale 2. "Gastric complaints" – displays the syndrome of nervous (psychosomatic) stomach disorders.

Scale 3. "Pains in Limbs" – reflects the subjective suffering of a patient of allergic or spastic nature.

Scale 4. "Circulatory Problems" – indicates that the patient has disorders in the cardiovascular area.

Scale 5. "Intensity of complaints" or "Pressure" – characterizes the general intensity of complaints.

All scales of the questionnaire have a distribution close to normal.

The experiment involved 187 students aged 18-43 years studying at different faculties.

Processing of the received data was carried out using statistical software Statistica v. 7.0 and SPSS v.13.

### Research Results

Based on inter-correlation analysis of the indices of the intensity of psychosomatic disorders and anxiety we have found that all psychosomatic complaints correlate both with state and trait anxiety (Table 1). The intercorrelation matrix data have shown that there is a close connection between state and trait anxiety. Table 1 demonstrates the correlation between the indicators of psychosomatic disturbances. Psychosomatic disorders are more closely

related to personal anxiety only according to the parameters of limb pains and heart complaints ( $r = 0.31$  and  $0.37$  respectively). Indices of limb pains and heart complaints have lesser correlations with state anxiety and, moreover, according to Student's t-test they are not significant ( $P > 0.05$ ). Indices of psychosomatic failures "exhaustion", "gastric complaints" and "pressure" are closely related to state rather than trait anxiety.

The carried out correlation analysis has shown that both the indicators of state and trait anxiety are closely correlated with each other ( $r = 0.60$  at  $P < 0.01$ ), as can be seen from Table 1. It can be concluded that although the author of the technique points out the significant differ-

ence between state and trait types of anxiety but nevertheless they are closely interconnected. It seems difficult to imagine a person with a high level of personal anxiety as a character trait and the low level of state anxiety, at least in our study we have not found such a phenomenon.

According to the correlation analysis of the data presented in Table 1, state anxiety index is much closer, as compared to the trait anxiety, associated with the indicator of psychosomatic disorders of "gastric complaints" type ( $r = 0.46$  and  $0.38$  respectively). The indicator of "heart complaints" on the contrary, is more closely related to trait anxiety ( $r = 0.37$ ).

Table 1.

*Results of inter-correlation analysis of investigated variables*

Exhaustion	Exhaustion	Gastric	Limb pains	Circulatory	Preassure	State
Gastric	0.46					
Limb pains	0.48	0.57				
Circulatory	0.53	0.51	0.67			
Preassure	0.77	0.78	0.82	0.74		
State	0.45	0.46	0.28	0.25	0.46	
Trait	0.44	0.38	0.31	0.37	0.45	0.60

According to State-Trait Anxiety Inventory by Spielberger, modified and standardized by Yu. Khanin, the respondents were divided into groups according to their levels of anxiety. Two samples with extreme manifestations of anxiety, namely, with its lowest and highest levels in terms of average intensity of psychosomatic complaints were taken as a basis to trace the differences.

The research outcomes suggest that the average indicators of the intensity of psychosomatic complaints have significant differences in the groups of the students with different levels of anxiety. Such a pattern is observed in the groups with both state and trait types of anxiety. Since the patterns of distribution of the groups and the dependence of psychosomatic disturbances have the same tendency, we present only the data for indicators of personal anxiety.

The analysis of the experiment results makes it possible to state that in the respondents with a high level of trait anxiety according to all scales without exception, the average values of psychosomatic disturbances are significantly ( $P < 0.05$ ) higher, but according to the "Intensity of complaints" scale the validity of the differences according to Student's t-test was  $P < 0.01$ . The average indicators according the "Pressure" scale in the subjects with the high anxiety level were 25.5 points, while those with the low anxiety level had 14.2 points. The same tendency is observed according to all scales, although the difference in other scales is not so pronounced.

## REFERENCES

1. Aleksandrovskiy, Yu. A. (1986). Pogranichnyie psihicheskie rasstroystva [Borderline mental disorders]. *Nauka i zhizn – Science and life*, 2 [in Russian].
2. Burlachuk, L.F., Morozov, S.M. (2001). *Slovar-spravochnik po psihodiagnostike [Dictionary on psychodiagnostics]*. Saint Petersburg: Piter [in Russian].

3. Sandomirskiy, M.E. (2000). Sostoyanie psichicheskoy adaptatsii v usloviyah hronicheskogo psichoemotsionalnogo stressa v svyazi s lichnostno-tipologicheskimi harakteristikami [State of psychic adaptation in terms of chronic psychoemotional stress of personal nature]. *Candidate's thesis*. Moscow [in Russian].

4. Shults, L. (2002). *Yazyk intuitsii [Language of intuition]*. Moscow: EKSMO – Press [in Russian].

#### ЛІТЕРАТУРА

1. Александровский Ю.А. Пограничные психические расстройства / Ю. А. Александровский. – Ростов-на-Дону: Феникс, 1997. – 576 с.

2. Белкания Г., Дарцмелия В. Гипертония и прямохождение / Г. Белкания, В. Дарцмелия // Наука и жизнь. – 1986. – №2.

3. Бурлачук Л.Ф., Морозов С.М. Словарь-справочник по психодиагностике / Л.Ф. Бурлачук, С.М. Морозов. – СПб.: Питер, 2001. – 528с.: ил. – (Серия «Мастера психологии»).

4. Сандомирский М.Е. Состояние психической адаптации в условиях хронического психоэмоцио-

5. Spielberger, C.D., Gorsuch D.L., Lushene R.E. (1970). *Manual for the State-Trait Anxiety Inventory*. Palo Alto: Consulting Psychologists Press [in English].

6. Ustun, T. B. (1995). *Mental Illness in General Health Care: An International Study*. Chichester: John Wiley & Sons [in English].

нального стресса в связи с личностно-типологическими характеристиками / М.Е. Сандомирский. – Дисс... канд. Мед. Наук. – М., 2000. – 289 с.

5. Шульц Л. Язык интуиции / Л. Шульц. – М.: ЭКСМО – Пресс, 2002. – 448с.

6. Spielberger C.D. Manual for the State-Trait Anxiety Inventory / C.D. Spielberger, D.L. Gorsuch, R.E. Lushene. – Palo Alto: Consulting Psychologists Press, 1970.

7. Ustun T. B. Mental Illness in General Health Care: An International Study / T. B. Ustun, N. Sartorius // Chichester: John Wiley & Sons. – 1995. – 235 p.

*Дмитро Миколайович Харченко,*

*доктор психологічних наук, професор, завідувач кафедри психології,*

*Юлія Юрївна Чистовська,*

*кандидат психологічних наук, доцент кафедри психології,*

*Черкаський національний університет імені Богдана Хмельницького,*

*бульвар Шевченка 81, м. Черкаси, Україна*

#### ВЗАЄМОЗВ'ЯЗОК ТРИВОЖНОСТІ З ПСИХОСОМАТИЧНИМИ РОЗЛАДАМИ

У статті розглянуто результати теоретичного аналізу факторів, що призводять до підвищеного тривожного стану, який може бути причиною виникнення психосоматичних порушень. Мета дослідження – дослідити величину рівня реактивної та особистісної тривожності та визначити рівень психосоматичних недомогань у осіб з різним ступенем тривожності. В експерименті взяли участь студенти стаціонарної та заочної форми навчання віком 18-43 років, загальна кількість – 187 осіб. Для досягнення поставленої мети використовувалися такі методи: для дослідження рівня реактивної та особистісної тривоги і тривожності – методика Ч. Д. Спілбергера, психосоматична обумовленість фізичних недомогань досліджувалась за допомогою Гісенівського опитувальника – анкети, що призначена для виявлення суб'єктивної картини фізичних страждань. Обробка отриманих даних проводилась з використанням комп'ютерних програм Statistica v. 7.0 та SPSS v.13. Для перевірки достовірності отриманих результатів використовувалась t-критерій Стьюдента. На основі інтеркореляційного аналізу показників інтенсивності психосоматичних недомогань і тривожності з'ясувалось, що всі психосоматичні скарги корелюють як з реактивною, так і з особистісною тривожністю. Представлено результати аналізу інтенсивності психосоматичних недомогань у осіб з різним ступенем тривожності, а саме: у осіб з високим рівнем особистісної тривожності за всіма без винятку шкалами середні величини психосоматичних недомогань є достовірно ( $P < 0.05$ ) вищими, а за шкалою «Тиск» або «Інтенсивність скарг» достовірність відмінностей за t-критерієм Стьюдента  $P < 0.01$ . Середні показники за шкалою «Тиск» у осіб з високою тривожністю склали 25,5 балів, а у респондентів із низьким рівнем тривожності – 14,2 бали. Така ж тенденція спостерігається за всіма шкалами, що правда відмінності за ними не так яскраво виражені. Як свідчить кореляційний аналіз даних, показник реактивної тривожності значно тісніше, в порівнянні з особистісною, пов'язаний з показником психосоматичних недомогань «шлункові скарги» ( $r = 0,46$  і  $0,38$  відповідно). Показник «серцевих скарг» навпаки, тісніше пов'язаний з особистісною тривожністю. Такі дані дали змогу зробити висновок, що інтенсивність психосоматичних недомогань пов'язана з рівнем як реактивної, так і особистісної тривожності. Також можна зробити висновок, що люди з високою особистісною тривожністю мають як правило і високу реактивну тривожність.

**Ключові слова:** реактивна тривога, особистісна тривожність, психосоматичні недомогання.

*Submitted on July, 5, 2017*