POINT OF VIEW

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PREVALENCE OF PATHOLOGICAL EMOTIONAL STATES AND PSYCHOMETRIC PROPERTIES OF THE DASS 42 QUESTIONNAIRE AMONG THE POPULATION OF THE REPUBLIC OF SAKHA (YAKUTIA)

The aim of the study was to assess the prevalence of pathological emotional states and psychometric properties of the DASS 42 questionnaire in two groups of the population of the Republic of Sakha (Yakutia): employees of ALROSA diamond mining company in Mirny town and residents of two rural areas. The results of the study showed that women had higher scores on all scales of the DASS 42 questionnaire than men, and a higher frequency of anxiety (40 and 18%, respectively, p <0.001) and signs of stress (28 and 13%, respectively, p = 0.003). No statistically significant dependence of scale scores and the frequency of psychoemotional disorders on age and place of residence was found. The questionnaire showed reliability and construct validity, the absence of cross-cultural differences in the perception of test questions among different groups of the population of the Republic of Sakha (Yakutia). The results of the study of the psychometric characteristics of the DASS-42 questionnaire indicate the possibility of its use as a tool for screening depression, anxiety and stress among the population of Yakutia.

Keywords: depression, anxiety, stress, DASS 42, psychometric properties, Republic of Sakha (Yakutia)

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Introduction. According to the Global Burden of Disease study 2021, anxiety and depressive disorders are common in all age groups worldwide, and their contribution to the overall disease burden is increasing [8]. The underlying burden of these diseases is measured in terms of years lived with disability (YLD) and disability-adjusted life-years (DALY). In terms of YLD, depressive disorders were the second most common and anxiety disorders were the sixth most common among all diseases in 2021. Age-standardized DALYs increased by 16.4% for depressive disorders and 16.7% for anxiety disorders between 2010 and 2021 (GBD, 2021) [7, 8]. The Republic of Sakha (Yakutia) is a region with extreme climatic conditions, where factors such as cold, seasonal decrease in natural light, insufficient level of socio-economic development, and low quality of life contribute to the development of stress, anxiety and depression [2, 11-13]. To develop effective strategies in the field of mental health, it is necessary to assess the situation in different population groups, which requires the use of reliable tools for diagnosing these conditions. In this regard, the aim of the study was to assess the prevalence of depression and anxiety disorders, as well as the psychometric properties of the DASS 42 questionnaire in population groups of the Republic of Sakha (Yakutia).

Materials and methods. The analysis included data from two groups of the population aged 20 and older: employees of ALROSA diamond mining company in Mirny town - 252 people and residents of the rural Churapchinsky and Tattinsky districts of Republic of Sakha (Yakutia) - 114 people, a total of 366 people (267 women and 99 men), examined according to a single protocol. The questionnaire was filled out in paper form. One of the sections of the program was an assessment of the psychoemotional state of respondents using the Depression, Anxiety, and Stress Scale-42 (DASS-42). DASS-42 contains three scales designed to diagnose depression, anxiety, and stress [9, 10]. The analysis also used the Results of the 2020 All-Russian Population Census [1].

Statistical data processing was carried out using IBM SPSS Statistics, v.26 software. Categorical variables are presented as frequencies and percentage distribution in the format n (%), quantitative variables as quartile distribution (Me (Q1-Q3)). Pearson $\chi 2$, Mann-Whitney, Kruskal-Wallis criteria were used to compare groups. Spearman's rank correlation analysis was used to assess the relationship between quantitative or ordinal vari-

ables. Cronbach's alpha was calculated to assess the reliability of the test. Factor analysis was conducted using the principal component method. The critical value of the statistical significance level (p) was taken to be 5%.

Results and discussion. Women and men were comparable in age, the median values and interquartile ranges of age were 47 (41–58.5) years for men and 47 (38.5–61) years for women (p=0.896). Women were statistically significantly more likely to have higher scores on the three scales of the DASS 42 questionnaire (Table 1).

An assessment of the distribution of the value of the total score for each of the 3 scales showed that symptoms of anxiety of varying severity were detected in 34%, signs of depressive disorders in 17%, and stress in 24% of the respondents. The high prevalence of anxiety, depression and stress among residents of northern territories than among residents of other latitudes has been confirmed in other studies [2, 11-13]. This is associated with a complex of factors, such as climatic, biological and socio-economic. For example, lack of sunlight and disruption of circadian rhythms, vitamin D deficiency, limited opportunities for socialization and physical activity, low quality of life, limited access to medical and psychological care, stress due to changes in traditional lifestyles, social transformations, sleep disorders, and others [2, 11-13].

Distribution by gender showed signs of depressive disorders in 18% of women and 14% of men (p = 0.385), anxiety symptoms in 40% of women and 18% of men (p <0.001), stress in 28 and 13%, respectively (p = 0.003). Table 2 shows the distribution of respondents by the severity of the disorders identified. Moreover, no statistically significant differences in the frequency of severe (severe and very severe) disorders were found between men and women. Overall, 43% of women and 21% of men (p <0.001) have signs of either depression or anxiety, with stress symptoms observed in 28% and 13%, respectively (p=0.003).

Numerous studies in different countries and cultures have shown a high frequency of depression indicators among women [4, 8]. This was also noted in the Yakut population by other researchers [3]. The reasons for these differences continue to be studied in the context of the influence of social attitudes, changes in ovarian hormone levels, etc. [4].

The scores of the three scales of the questionnaire showed a weak negative correlation with the age of the respondents (Table 3). Comparison of age

Table 1

Scores and Internal Consistency of the DASS 42 Questionnaire

Indicator	Women	Men	Both sexes	P
Depression				
Me (Q1; Q3)	4 (1–8)	2 (0–6)	4 (1–8)	< 0.001
Cronbach's Alpha	0.88	0.88	0.88	
Anxiety				
Me (Q1; Q3)	6 (3–11)	3 (1–7)	5 (2–10)	< 0.001
Cronbach's Alpha	0.84	0.85	0.85	
Stress				
Me (Q1; Q3)	9 (4–15)	4 (1–11)	8 (3–14)	< 0.001
Cronbach's Alpha	0.92	0.93	0.93	

Note. Data are presented as median (Me) and interquartile range (Q1; Q3). In Tables 1-2: p is the achieved level of statistical significance of differences when comparing men and women.

Table 2

Distribution of respondents by categories of the DASS 42 questionnaire scales depending on gender

Sex	Scores				
	Normal	Midl	Moderate	Severe	Extremely severe
Depression					
Women	219 (82.0)	21 (7.9)	20 (7.5)	6 (2.2)	1 (0.4)
Men	85 (85.9)	9 (9.1)	3 (3.0)	2 (2.0)	0 (0.0)
Both sexes	304 (83.1)	30 (8.2)	23 (6.3)	8 (2.2)	1 (0.3)
p	0.569				
Anxiety					
Women	159 (59.6)	23 (8.6)	54 (20.2)	19 (7.1)	12 (4.5)
Men	81 (81.8)	7 (7.1)	5 (5.1)	6 (6.1)	0 (0.0)
Both sexes	240 (65.6)	30 (8.2)	59 (16.1)	25 (6.8)	12 (3.3)
p	<0.001				
Stress					
Women	192 (71.9)	32 (12.0)	31 (11.6)	9 (3.4)	3 (1.1)
Men	86 (86.9)	9 (9.1)	3 (3.0)	0 (0.0)	1 (1.0)
Both sexes	278 (76.0)	41 (11.2)	34 (9.3)	9 (2.5)	4 (1.1)
p	0.019				

Note: Data are presented as n (%).

Table 3

Correlations between the scales of the DASS 42 questionnaire

Scale		Age	Depression	Anxiety	Stress
Depression	r	-0.14	1	0.77	0.78
	p	0.006		<0.001	<0.001
Anxiety	r	-0.14	0.77	1	0.76
	p	0.009	<0.001		<0.001
Stress	r	-0.19	0.78	0.76	1
	p	<0.001	<0.001	<0.001	

Note: In Table 3-4: r is the value of the Spearman correlation coefficient, p is the significance level of the correlation coefficient.

groups did not reveal statistically significant differences in the scores of the scales and the frequency of pathological emotional states.

A strong positive correlation of 0.76–0.78 was observed between the scores of the scales of the questionnaire.

The psychometric properties of questionnaires include reliability, validity, and sensitivity to change. The format of this study allows us to study reliability in the form of internal consistency and construct validity of the questionnaire. Cronbach's alpha was calculated to check the internal consistency of the test. When including all 42 questions, the Cronbach's alpha value in the group as a whole was 0.95 (0.95 for women, 0.96 for men), indicating a high degree of consistency of the characteristics describing the object. In a similar analysis within each of the 3 scales, Cronbach's alpha was 0.88 for depression, 0.85 for anxiety, and 0.93 for stress (Table 1).

To test the validity of the original subscales, a factor analysis was performed using the principal component method; the Varimax method with Kaiser normalization was used to rotate the factors. The suitability of the original data for factor analysis was determined by the Kaiser-Meyer-Olkin (KMO) test value, which was 0.94. The three-factor solution contained 48% of the total variance, and the four-factor solution accounted for 52%.

To assess the construct validity of the DASS 42 questionnaire, an analysis of the correlations between the questionnaire scale scores and external criteria was performed, which were questions on the frequency of sleep disorders (Table 4). These questions had the following wording:

1. How often over the past 4 weeks have you had problems falling asleep?

2. How often over the past 4 weeks have you had frequent awakenings during the night?

3. How often over the past 4 weeks have you woken up too early in the morning?

Respondents assessed their condition using the following gradations: “Never” - 1; “Sometimes” - 2; “Often” - 3; “Almost always” - 4; “Constantly” - 5.

The choice of sleep disorders for studying the construct validity of the questionnaire was due to the information about the two-way relationship between sleep disorders and depression, anxiety disorders. Just as depression (anxiety) can lead to insomnia, so insomnia can lead to depression and anxiety. 90% of patients with depression and 50% of people with anxiety complain of sleep disorders [5, 6].

Table 4

Correlations between the scores of the DASS 42 questionnaire scales and external criteria

Scale		External criteria		
		Frequency of problems with falling asleep	Frequency of frequent awakenings during the night	Frequency of waking up too early in the morning
Depression	N	365	364	363
	r	0.251	0.194	0.087
	p	<0.001	<0.001	0.100
Anxiety	N	365	364	363
	r	0.285	0.265	0.191
	p	<0.001	<0.001	<0.001
Stress	N	365	364	363
	r	0.221	0.196	0.087
	p	<0.001	<0.001	0.097

Table 5

Agreement rates between the DASS 42 questionnaire scale scores in 2 groups

Scale	Groupe 1: employees of ALROSA, Mirny	Groupe 2: residents of the Churapchinsky and Tattinsky districts
The share of people for whom Russian is their native language according to the 2020 All-Russian Population Census	78.8%	0.27-0.58%
Cronbach's Alpha		
Depression	0.89	0.88
Anxiety	0.84	0.87
Stress	0.93	0.93
All questions of the questionnaire	0.96	0.95

The analysis showed that depression scores positively correlate with the frequency of disorders for questions 1 and 2 (Table 4). Anxiety correlated with the frequency of all three types of sleep disorders. Stress scores showed the same correlation as depression.

In addition to the gender and age aspects, this study assessed the cross-cultural aspect of the Russian-language version of the questionnaire. The group of workers from the Mirny district (group 1) represents the urban population, and residents of the Churapchinsky and Tattinsky districts represent the rural population (group 2). According to the 2020 All-Russian Population Survey, among those who indicated their native language, Russian was indicated as their native language by 78.8% in the Mirny district. In the Tattinsky district, it was 0.58%, and in the Churapchinsky district, it was 0.27% [1]. The analysis did not reveal statistically significant differences in the frequency of depression, anxiety, and stress between the groups ($p > 0.05$). At the same time, it cannot be ruled out that there may be some differences in the perception of the questions related to belonging to different cultures. In this regard, the internal consistency of the questionnaire as a whole, as well as the questions of individual scales, was studied in these groups. The analysis showed that Cronbach's alpha showed high consistency in both groups and showed virtually no differences (Table 5).

Conclusion. Thus, our study of the groups of urban and rural population of the Republic of Sakha (Yakutia) using the DASS-42 questionnaire revealed symptoms of anxiety of varying severity in 34%, signs of depressive disorders - in 17%, stress - in 24% of respondents. At the same time, women were characterized by higher scores on all scales of the

DASS 42 questionnaire than men, and a higher frequency of anxiety (40 and 18%, respectively, p <0.001) and signs of stress (28 and 13%, respectively, p = 0.003). The analysis did not reveal a statistically significant dependence of scale scores and the frequency of psychoemotional disorders on age and place of residence. The identified high frequency of pathological emotional states requires further research. The questionnaire showed reliability and construct validity, the absence of cross-cultural differences in the perception of test questions among different groups of the population of the Republic of Sakha (Yakutia). The results of the study of the psychometric characteristics of the DASS-42 questionnaire indicate the possibility of its use as a tool for screening depression, anxiety and stress among the population of Yakutia.

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The authors declare no conflict of interest.

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FATTY LIVER DISEASE AS A RISK FACTOR FOR HEMOSTASIS DISORDERS IN PATIENTS WITH COVID-19

Purpose of the study: To study the association of GERD with hemostasis disorders in COVID-19.

Methods: A retrospective analysis of the results of 760 autopsies in 2021 was conducted. The studies were conducted at the pathology department of the State Budgetary Healthcare Institution Irkutsk Regional Clinical Hospital of the Order of the Badge of Honor. The analysis of the obtained data was carried out in the Statistica 13 program.

Object of the study: medical documentation - "Act of pathological anatomical autopsy". Results: A retrospective analysis of 760 autopsies of patients with COVID-19 performed in 2021 was carried out. There were 370 men (49%), age 66 [57.0; 74.0]; 390 women (51%), age 68.5 [60.0; 76.0], women were significantly older than men (p = 0.015). Hemostasis disorders were detected in 227 (30%) cases, age 68 [59.0; 76.0]. There were 122 men (54%); women 105 (46%). p=0.015

Conclusions: 1) Hemostasis disorders were detected in 30% of those who died from COVID-19. 2) FLD was more common (19%) in those who died from COVID-19 and had hemostasis disorders than in those who died from COVID-19 without hemostasis disorders (12%) p = 0.019 3) PE was detected in 15% of those who died from COVID-19.

4) The risk of developing hemostasis disorders in those who died from COVID-19 and had FLD is 1.4 times higher than in those who did not have FLD, and the risk of developing PE is 1.7 times higher. The obtained results may indicate an association of GBP with hemostatic disorders in COVID-19

Keywords: fatty liver disease, pulmonary embolism, COVID-19, hemostasis disorder, thrombosis.

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