

Gelotophobia, attitudes to illness and self-stigmatisation in patients with non-psychotic mental disorders and brain injuries

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Abstract

Gelotophobia, or the fear of being laughed at, has been described as an inability to enjoy humour and laughter in social interaction. A number of studies have shown its increased levels under various mental disorders. Gelotophobia in psychiatric patients may appear either as a primary syndrome, or as a secondary disorder connected to the patient's reaction to their social position (self-stigmatisation). In turn, self-stigmatisation is closely related to the personality of the patient and, in particular, to their attitudes to illness. Since the fear of being laughed at has been studied within both the clinical concept and the continual model of individual differences, the question of differentiation between normal and pathological fear of being laughed at is topical, while borderline groups are of particular interest. The aim of the present study was to examine the relationship between gelotophobia, attitudes to illness, and self-stigmatisation in patients with minor, non-psychotic mental disorders, as well as those with brain injuries, who also had mild mental disorders, without having the status of psychiatric patients. The sample consisted of 73 patients with non-psychotic mental disorders, and 30 patients with brain injuries. The methods used included PhoPhiKat-30, ISMI-9 (Internalized Stigma of Mental Illness Inventory), and TOBOL (Types of the Attitudes to Disease). The results revealed at least a slight level of gelotophobia in 31% patients with non-psychotic mental disorders, and 20% in those with brain injuries. Gelotophobia correlated with certain types of attitude to illness in each group. Subjects displaying high levels of gelotophobia were in general characterised by disadvantageous attitudes to illness. In the group of psychiatric patients, gelotophobia was

associated with self-stigmatisation, whereas in the group of neurological patients it was not. Thus, in this study gelotophobia was examined for the first time in patients with non-psychotic mental disorders, as well as in those with brain injuries. Different mechanisms of gelotophobia development were suggested for the two groups.

Keywords: gelotophobia, brain injuries, non-psychotic mental disorders, attitudes to illness, self-stigmatisation

1. Introduction

Gelotophobia was first described by Michael Titze as a pathological fear of being laughed at (Titze 1996). He regarded it as a special form of social phobia. People with high levels of gelotophobia do not experience laughter and smiling in interactions as something positive, but rather as a means to put them down. They find it hard to distinguish between good-natured, friendly and aggressive kinds of humour and laughter, and because of this, they easily become suspicious when hearing laughter from others. They are convinced that they are themselves actually ridiculous, and are therefore to be laughed at for a good reason (Ruch, Proyer 2008; Platt 2008; Ruch et al. 2014).

Willibald Ruch and René T. Proyer formulated a questionnaire to identify gelotophobia, a short version of which (GELOPH<15>) is the main instrument of its study today (Ruch & Proyer 2008). Russian adaptation of the scale confirmed the relevance of this phenomenon for Russia (Stefanenko et al. 2011; Ivanova et al 2012). In spite of the fact that gelotophobia was initially revealed on a clinical sample, now most studies are conducted on healthy people within the psychology of individual differences. Various interrelations of gelotophobia with other psychological indicators have been found. Thus, individuals with gelotophobia are characterised by high introversion and neuroticism (Ruch, Proyer 2009b), low hope/optimism, curiosity, bravery, love, and zest (Proyer, Ruch 2009), low self-esteem, they are less likely to experience joy, and more prone to experience fear, shame, sadness and guilt (Stefanenko et al. 2011). Gelotophobia showed a strong positive connection with shame, but the fear of being laughed at was connected to humiliation only when it contained derision (Judit & Séra 2016). Tracey Platt revealed that extreme gelotophobes, compared to marked gelotophobes, experience more surprise and greater shame (but not greater fear) in response to ridicule, they also have higher subjective intensity ratings of fear, but they did not differ in the number of physical symptoms experienced, including muscle tension, sweating and blushing (Platt 2019). Gelotophobia correlated to lower body appreciation and appearance control beliefs and higher body surveillance and body shame (Moya-Garófano et al. 2019). Gelotophobes characterise their humour style as inept, socially cold, and mean-spirited. They report less frequent use of humour as a means of coping, and indulge less frequently in self-enhancing and social humour. On the other hand, their ability to create humour may not be impaired (Ruch et al. 2009).

Ruch and Proyer (2009a) described two other phenomena related to gelotophobia, namely, gelotophilia (the joy of being laughed at) and katagelasticism (the joy of laughing at others). They developed a questionnaire to identify gelotophobia, gelotophilia and katagelasticism (PhoPhiKat-45) (Ruch & Proyer 2009a), along with a shorter version (PhoPhiKat-30). A Russian adaptation of the PhoPhiKat-30 was provided by Ivanova et al. (2016).

Data collected from a number of studies has shown that the level of gelotophobia tends to increase in psychiatric patients with various mental disorders, such as personality disorders, schizophrenia-spectrum disorders, mood disorders, anxiety, eating disorders and autism spectrum disorders (Forabosco et al 2009; Havranek et al. 2017; Brück et al. 2018; Samson et al. 2011; Stefanenko et al. 2014; Lyubavskaya et al. 2018). In view of this fact, it is reasonable

to assume that in this case gelotophobia results from living with a diagnosed mental disorder, which may lead to stigmatisation and self-stigmatisation (Forabosco et al. 2009).

Stigmatisation is defined as a biased attitude towards a person due to their physical, social or psychological problems. Stigmatisation of mentally ill people in modern society is a well-known problem which discourages patients in the process of rehabilitation and resocialisation. Significant progress has been made in understanding the dimensions of mental illness stigma, and the processes by which public stereotypes are translated into discriminatory behaviour (Corrigan & Watson 2002). Nonetheless, this cultural phenomenon remains highly influential.

Patients internalise negative stereotypes about mental illness, which exist in society as a part of culture. Link (1997) uses the term 'self-stigmatisation' to describe this phenomenon. It refers to the patient's own ideas and concepts about the relationship between their illness and their social status. Persons with mental illnesses may internalise mental illness stigma and experience diminished self-esteem and self-efficacy (Watson et al. 2006). Factors that affect a situational response to stigma include collective representations that are primed in that situation, the person's perception of the legitimacy of stigma, and the person's identification with a larger group of individuals with mental disorders (Corrigan & Watson 2002). Self-stigmatisation may have important consequences: people with high self-stigma tend to hide their disorder from others in a variety of contexts, as well as endorsing negative attitudes and beliefs about receiving treatment (Kanter et al. 2008). However, sometimes internalizing prejudice and discrimination is not a necessary consequence of stigma. Many people recognise stigma as unjust and take it on as a personal goal to change (Corrigan & Rao 2012).

Self-stigmatisation as a form of adaptation to an illness is natural and reasonable. However, without adequate understanding of a particular illness, self-stigmatisation turns into a destructive process, with disturbance of social adaptation as a possible consequence. Self-stigmatisation can make a significant contribution to the development of an individual's paranoid tendencies and suspicion of their evaluation by others, including one that takes the form of laughter. Self-stigmatisation is closely related to patient's personality and, in particular, to their attitudes to illness. In this study, we applied the typology of attitudes to illness ("attitudes to disease" in the original study) most known and widely used in Russia, provided by Vasserman et al. (2005), which includes the following types (typical patterns of relationship and attitudes to one's own illness):

- Harmonious (realistic): assessing one's own condition without the tendency to either exaggerate or underestimate its severity. The desire to actively promote the success of treatment in everything.
- Ergopathic: "escape from the disease into work". A selective attitude towards examination and treatment due to the desire to continue work and maintain professional status.
- Anosognostic: denial of the disease and its possible consequences.
- Anxious: anxiety about the disease, its possible complications, the inefficacy and even the dangers of treatment. Unlike the hypochondriac type, there is a greater interest in objective data (results of analyses, opinions of clinicians) than in subjective feelings.
- Hypochondriac: excessive concentration on subjective painful and unpleasant sensations. Exaggeration of the actual disease and suffering.
- Neurasthenic: outbreaks of irritation, especially in case of pain, unpleasant feelings, or treatment failures.
- Melancholic: disbelief in recovery. Active depressive statements up to suicidal thoughts.
- Insensitive: indifference to one's own fate, to the outcome of the disease, to the results of treatment.
- Sensitive: excessive vulnerability, concern at possible adverse impressions if other people know about the disease.

- Egocentric: exposing one's own suffering and experiences to others in order to arouse sympathy and attention. The constant desire to show others their exclusivity with regard to the disease.
- Paranoid: a conviction that the disease is the result of external causes, someone else's evil intent.
- Dysphoric: angry-gloomy, angry mood, a constant grim and unhappy look. Tendency to blame others for the illness.

These types of attitudes to illnesses are universal with reference to both somatic (Nikolaeva & Elnikova 2014; Famin et al. 2014; Odynets et al. 2018; Vasilieva 2005; Babaylova et al. 2014), as well as mental illnesses (Petrova 2015; Ivashchenko 2012; Chugunov et al. 2014). However, some of them are more or less inherent to the two types. The prevalence of particular types has been studied more deeply for somatic diseases. For example, patients on haemodialysis are characterised by ergopathic, sensitive and harmonious types of attitude to illness that indicate good adaptive capabilities in those patients (Vasilieva 2005). In the group of patients with primary open-angle glaucoma, all 12 types of attitude to illness are presented, but the ergopathic type is reliably more common, while the melancholic is less frequent (Babaylova et al. 2014). In cases of mental illness, patients with schizophrenia presented more frequently as sensitive, ergopathic, anxious and hypochondriac (Ivashchenko 2012), whereas patients with affective syndromes under substance dependence disorders presented as anxious, egocentric, dysphoric and anosognostic types (Chugunov et al. 2014), and patients with affective syndromes under general medicine – anxious, sensitive, hypochondriac and neurasthenic types (Petrova 2015).

Since the fear of being laughed at has been studied within both frameworks – the clinical concept and the continual model of individual differences – the question of differentiation between a common fear of being laughed at and gelotophobia as a psychopathological syndrome is relevant. That is why in this study we turned to patients with a non-psychotic, borderline spectrum of psychiatric disorders.

Patients with non-psychotic mental disorders are one of the most difficult groups of patients to manage, because their symptoms depend largely on a number of psychological and social factors, such as personality traits, the social competence of the patient, the maturity of their coping strategies, their socio-cultural environment, and family support (Dmitrieva et al. 2015). Thus, the prevailing type of attitude to illness, self-stigmatisation and gelotophobia may influence the patient's state as well as the effectiveness of therapy.

Gelotophobia in psychiatric patients may appear as a primary syndrome, related to general anxiety and paranoid tendencies, or, as mentioned above, as a secondary disorder, connected to the patient's reaction to their social position (self-stigmatisation). In this regard, we were also interested to examine a group of patients who also have mild mental disorders, without having the status of a psychiatric patient. In this regard, we involved patients with brain injuries in the study. Compared to mental illnesses, brain injuries may be less stigmatised in Russian culture, or at least they may be stigmatised in a different way. Such people are mostly regarded as victims of misfortune (for instance, a car accident or a stroke), which could befall anyone. On the other hand, mentally ill people are perceived as fundamentally different, odd, and even scary, so much that they should be isolated from society (Brazevich & Sidorova 2013).

Any brain damage leads to some mental disorder (Dobrokhotova 2016). Considering that the latter can significantly affect feelings, thinking, and behaviour, and can decrease the patient's coping ability, it is obvious that the sense of humour in mental disorders also undergoes significant changes and dysfunctions, and can be associated with maladaptability (Stefanenko 2014). Neither group of patients have yet been studied in relation to gelotophobia. At the same time, they vary in their level of stigma within society. Having a mental disorder is often considered as being embarrassing, abnormal, while suffering brain damage is, on the contrary,

a tragic event which can even be considered as heroic, and showing resilience. It is for this reason that in this study we compared patients with non-psychotic mental disorders and those with brain injuries.

The aim of the present study is to examine the relationship between gelotophobia, attitudes to illness and self-stigmatisation in patients with non-psychotic mental disorders and brain injuries. First, we hypothesise that patients with brain injuries have a less pronounced self-stigmatisation compared to the psychiatric patients. Second, we assume that there exists a connection of self-stigmatisation with gelotophobia in both groups. Third, based on the above, we think that gelotophobia score in the psychiatric group should be higher. Fourth, we hypothesised that gelotophobia is related to the prevalence of certain types of the attitudes to illness, given that it may indicate disadvantageous effect of gelotophobia in both groups of patients.

2. Method

2.1. Participants

The study sample consisted of 103 subjects in total, divided into two groups:

- 1) 73 patients with non-psychotic mental disorders (absence of pronounced mental disorder, relatively intact critical faculties, absence of pronounced behavioural disorders) (65 female, 8 male) aged 18 to 75 years (ICD-10: F43.22, F43.21, F06.361+F06.41, F40.8, F41.2, F41.0, F45.32, F48.0, F60.4, F45.3, F41.8, F06.41, F06.61, F61.0, F34.0, F06.361, F40.2, F06.69, F06.48, F92.9, F43.33+F06.01, F45.30, F42.0, F06.68);
- 2) 30 neurological patients with brain injuries (17 female, 13 male) aged 18 to 45 years (ICD-10: T90.5, D33.3, I67.1, I69.3, T94.1, T90.1, T02.8, I69.1, Q28.2, D33.0, I63.3, T94.0, T90.2, I69.2), with a level of consciousness on the CRS and RLA scales not lower than 8 and 20 respectively.

2.2. Methods

The **PhoPhiKat-30** (Ruch & Proyer 2009a) is a 30-item questionnaire for the subjective assessment of gelotophobia, gelotophilia, and katagelasticism. All 30 statements utilise a four-point answer scale (1 = strongly disagree; 2 = moderately disagree; 3 = moderately agree; 4 = strongly agree). Sample items would be “When they laugh in my presence I get suspicious” (gelotophobia), “When I am with other people I enjoy making jokes at my own expense to make others laugh at me” (gelotophilia), and “Laughing at others is part of everyday life. If you do not like it, then get back at them” (katagelasticism). We used the Russian version of the PhoPhiKat-30 (Ivanova et al. 2016). Gelotophilia and katagelasticism did not differ significantly between the groups. In this regard, these scales were applied in further analysis in the study.

The **TOBOL** method (Types of Attitudes to Disease) created in the V.M. Bekhterev laboratory of clinical psychology (Vasserman et al. 2005) is based on a psychological typology of attitudes to illness proposed by Andrey E. Lichko and Nikolay Ya. Ivanov in 1980, which allowed the diagnosis of 12 types of attitudes to illness: sensitive, anxious, hypochondriac, melancholic, insensitive, neurasthenic, egocentric, paranoiac, anosognostic, dysphoric, ergopathic and harmonious. Elaborated on the basis of clinical judgments, the questionnaire includes sets of statements on 12 topics: the patient’s attitude to the illness, to its treatment, to the doctors and medical staff, to their family, the people around them, work (study), loneliness, the future and their self-assessment of well-being, mood, sleep and appetite. Each set contains from 10 to 16 statements. Prevailing statements of the ‘attitude to illness’ category would be

“My illness scares me”, “I try not to think about my illness and to live a carefree life”, “I’m healthy and illness doesn’t bother me” etc. Each set of statements also contains one additional comment: “None of the statements suits me”. The patient is offered to choose two statements from the whole list of every set which best describe their attitude.

In the process of formulating the method, the statements were assessed several times by expert groups of professional clinicians. On the basis of these assessments, the items were first selected from the initial pool, and then received diagnostic coefficients. An item may be included in several scales (types of attitude to illness) with higher or lower diagnostic coefficients.

The examinee protocol is assessed using standard tables with keys (diagnostic coefficients) for each of the scales. For example, the sensitive type would be assumed in case of agreement with such statements as: “My well-being is very dependent on how I am treated by others” and “I try not to show others when I feel sick” (from the “well-being” set); “My mood goes down because of the expectation of possible trouble, anxiety for loved ones, uncertainty about the future” and “Any slightest trouble greatly upsets me” (from the “mood” set); “If something upsets me I can't sleep for a long time” (from the “sleep” set), etc.

The prevailing type(s) of attitude to illness may be defined as the most expressed, moreover the authors proposed analysing the holistic individual profile on the 12 scales which reflects a complex, multidimensional model of a patient’s relation to their illness.

All the types were grouped into three blocks using two criteria: “adaptability – maladaptability” (the influence of attitudes to illness on the patient’s adaptation) and “inter-intrapsychical intentions of maladaptability” (if the latter is revealed). The first block includes harmonious, ergopathic and anosognostic types of attitude to illness, when psychological and social adaptations are essentially not broken. The two other blocks include types with psychological adaptation imbalance.

The TOBOL may be compared to an English-language questionnaire Illness Attitude Scales (IAS) (Stewart & Watt 2000; Hedman et al. 2015), which is more focused on the level of health anxiety. By contrast, the TOBOL method qualitatively defines different patterns of attitudes to illness, each of which may be associated with a greater or fewer level of health anxiety. That is why the IAS is used also for healthy samples, while the TOBOL requires the presence of a concrete illness.

The **Internalized Stigma of Mental Illness Inventory (ISMI-9)** (Hammer & Toland 2016) is a nine-item unidimensional short form of the original self-report instrument ISMI-29, developed by Jennifer Boyd et al. (2014). The scale is aimed at measuring the internalised stigma of mental illness. The statements utilise a four-point answer scale (1 = strongly disagree; 2 = moderately disagree; 3 = moderately agree; 4 = strongly agree). We used the Russian version of the ISMI-9 (Vorontsova et al. 2019).

Since the ISMI-9 describes the self-stigma of mental illness, for the patients with brain injuries we used its modified version. For example, the original item for mental patients: “No one would want to get close to me because of my mental illness” we reformulated for neurological patients the following way: “No one would want to get close to me because of my condition”).

The level of internalised stigma was assessed using 4 degrees of expression (Lysaker et al. 2007):

- 1.00-2.00: minimal to no internalised stigma
- 2.01-2.50: mild internalised stigma
- 2.51-3.00: moderate internalised stigma
- 3.01-4.00: severe internalised stigma

The patients undertook the tests after a preliminary interview in the following order: the TOBOL method, PhoPhiKat-30, and ISMI-9.

3. Results

Mean scores, medians, standard deviations, skewness, and kurtosis were computed for all the scales (table 1). For normally distributed variables the Pearson correlation analysis was performed, otherwise Spearman's rank correlation analysis was performed. To estimate differences between groups, the U Mann-Whitney test was used.

Table 1. Means, medians, standard deviations, skewness, kurtosis and Cronbach's alpha for all the measures

Measure	Patients with brain injuries						Patients with non-psychotic mental disorders					
	M	Me	SD	SK	KU	α	M	Me	SD	SK	KU	α
Age	31.83	31.00	8.33	0.26	-1.26		49.45	54.00	16.58	-0.52	-0.91	
Gelotophobia	1.84	1.70	0.68	0.77	0.77	0.83	2.25	2.20	0.53	0.51	0.35	0.79
Gelotophilia	2.03	1.90	0.59	0.66	-0.03	0.78	1.99	2.00	0.43	0.22	0.24	0.73
Katagelasticism	2.36	2.30	0.65	-0.18	-0.04	0.72	2.23	2.20	0.51	0.19	0.35	0.80
Self-stigmatisation	1.76	1.71	0.55	0.25	-0.92	0.82	1.93	2.00	0.48	0.52	0.29	0.77
Harmonious type	10.23	0.00	13.25	1.09	0.11		12.03	0.00	15.05	0.84	-0.63	
Ergopathic type	14.00	14.00	12.15	0.48	-0.62		16.33	17.00	12.22	0.21	-0.81	
Anosognostic type	6.93	0.00	12.07	1.52	0.92		5.00	0.00	10.83	2.43	5.87	
Anxious type	10.10	9.000	9.05	0.75	0.34		15.59	13.0	11.08	0.57	-0.79	
Hypochondriac type	10.67	10.00	9.18	0.83	0.66		14.92	15.0	9.20	0.65	0.02	
Neurasthenic type	8.30	9.00	6.35	0.14	-1.28		12.73	11.00	8.65	0.59	-0.43	
Melancholic type	6.50	4.00	8.24	1.42	0.97		8.48	5.00	9.46	1.19	0.89	
Insensitive type	4.43	3.00	5.32	1.39	1.55		5.56	3.00	6.59	1.43	1.59	
Sensitive type	14.03	13.50	8.16	0.23	-1.22		19.27	19.00	8.34	0.08	-0.69	
Egocentric type	7.80	5.50	5.43	0.28	-1.02		10.92	11.00	6.08	0.40	-0.64	
Paranoiac type	5.30	4.00	4.68	0.71	-0.64		7.37	7.00	4.93	0.35	-0.53	
Dysphoric type	5.93	4.00	5.79	0.75	-0.54		7.04	4.00	7.29	1.00	0.24	

Note: M = mean, Me = median, SD = standard deviation, SK = skewness, KU = kurtosis, α = Cronbach's alpha.

The cut-off points for gelotophobia (i.e., 2.5 for slight, 3.0 for marked, and 3.5 for extreme fear; Ruch & Proyer 2008) were applied and yielded 68.5% (n = 50) patients with no fear, and 23.29% (n = 17) with slight fear, 5.48% (n = 4) with marked fear, and 2.74% (n = 2) with extreme fear of being laughed at in patients with non-psychotic mental disorders. So 31.5% patients with non-psychotic mental disorders exceeded the cut-off point for gelotophobia, i.e. demonstrated at least a slight manifestation (Ruch & Proyer 2008). This is twice as much as has been revealed in healthy people in Russia (15%) (Ivanova et al. 2016).

Neurological patients also exceeded the normative values, with gelotophobia determined in 20% of the patients, among them 16.7% (n = 5) had a slight fear, 3.3% (n = 1) had an extreme fear of being laughed at. However, they had less pronounced gelotophobia compared to mentally disordered patients (U=0.001, p=0.05).

Gelotophobia was indeed related to the prevalence of certain types of attitudes to illness (table 2). Among the neurological patients, gelotophobia was related to just 5 types (anxious, neurasthenic, melancholic, paranoiac, and dysphoric), and the connections were stronger compared to the other group. Among the psychiatric patients, gelotophobia was associated with

almost all types except for the ergopathic, melancholic, and, surprisingly, the paranoiac. At the same time, most of the correlations were lower.

In both groups, gelotophobia was associated with the anxious, neurasthenic and dysphoric types. Only in the neurological patients was it highly related to the paranoiac and melancholic types, whereas only in the psychiatric patients did it correlate negatively with the harmonious and anosognostic types, and positively with the hypochondriac, insensitive, sensitive and egocentric types.

Table 2. Correlations of gelotophobia with the types of attitudes to illness

Measure	Patients with brain injuries		Patients with non-psychotic mental disorders	
	r	p	r	p
Harmonious type	-0.08	0.66	-0.33	0.01
Ergopathic type	-0.35	0.06	-0.19	0.09
Anosognostic type	-0.01	0.98	-0.32	0.01
Anxious type	0.40	0.03	0.33	0.01
Hypochondriac type	0.34	0.06	0.24	0.04
Neurasthenic type	0.46	0.01	0.36	0.01
Melancholic type	0.45	0.01	0.22	0.06
Insensitive type	0.28	0.13	0.28	0.02
Sensitive type	0.11	0.57	0.44	0.01
Egocentric type	0.33	0.08	0.38	0.01
Paranoiac type	0.59	0.01	0.13	0.28
Dysphoric type	0.44	0.02	0.24	0.04

To confirm the most significant links, we used U-tests for all the analyses (e.g., that with at least slight vs. no fear of being laughed at in the two patient groups) (table 3). In the group of patients with brain injuries, all of the above correlations were confirmed as differences in the expression of different types in the groups of gelotophobes versus non-gelotophobes. In the group of patients with non-psychotic mental disorders, the differences between gelotophobes versus non-gelotophobes on the anxious, hypochondriac, insensitive and dysphoric types were insignificant, while the remaining interactions (with harmonious, anosognostic, neurasthenic, sensitive and egocentric types) were confirmed.

In contrast to our expectations, the two groups of patients did not differ in their level of self-stigmatisation ($p>0.05$). 41% of the mentally ill patients and 30% of the neurological patients exceeded the level of internalised stigma (2.01) (Lysaker et al. 2007). However, the psychiatric patients showed a wider distribution of this indicator, ranging from a minimal to a severe degree of self-stigmatisation, whereas there were only mild and moderate levels in the neurological patients. As expected, gelotophobia correlated with self-stigmatisation ($r=0.31$, $p=0.009$) in the mentally ill patients, while this connection was not observed in the neurological patients.

Table 3. Differences between the groups of gelotophobes vs. non-gelotophobes in the types of attitudes to illness

Measure	Patients with brain injuries						Patients with non-psychotic mental disorders					
	gelotophobes		non-gelotophobes		U	p	gelotophobes		non-gelotophobes		U	p
	M	SD	M	SD			M	SD	M	SD		
Harmonious type	5.17	8.16	11.50	14.09	55.50	0.41	5.91	10.58	14.84	16.02	395.5	0.02*
Ergopathic type	8.17	9.04	15.46	12.54	48.50	0.23	13.87	11.58	17.46	12.45	484.5	0.28
Anosognostic type	1.50	3.67	8.29	13.08	56.00	0.42	0.74	2.56	6.96	12.53	439.5	0.03*
Anxious type	18.33	10.61	8.04	7.52	30.00	0.03*	18.78	13.31	14.12	9.69	447.5	0.13
Hypochondriac type	18.00	12.34	8.83	7.45	39.00	0.09	18.22	10.88	13.40	7.99	421.5	0.07
Neurasthenic type	15.83	3.43	6.41	5.45	12.00	0.01*	16.65	7.93	10.92	8.43	330.5	0.01*
Melancholic type	16.50	11.73	4.00	4.81	28.50	0.03*	12.00	11.64	6.86	7.88	445.5	0.12
Insensitive type	10.17	8.35	3.00	3.12	38.00	0.08	8.52	8.71	4.20	4.87	430.5	0.08
Sensitive type	17.00	6.32	13.29	8.51	49.50	0.25	23.83	8.18	17.18	7.60	306.0	0.01*
Egocentric type	10.50	6.35	7.12	5.10	51.50	0.29	13.67	6.25	9.64	5.62	361.0	0.01*
Paranoiac type	9.17	3.87	4.33	4.42	28.50	0.03*	7.91	4.83	7.12	4.99	515.0	0.48
Dysphoric type	11.33	6.65	4.58	4.82	29.00	0.03*	9.26	7.82	6.02	6.89	421.0	0.06

*p<0,05

4. Discussion

The results of the study showed that gelotophobia exhibits relevance to major psychiatric diseases, but also for mild, non-psychotic level mental disorders. Over 30% of these patients revealed at least a slight expression of gelotophobia. Compared to the data obtained by Brück et al. (2018) in individuals with borderline personality disorder (BPD), the gelotophobia in the sample examined is much less pronounced (31.5% vs. 87%), which can be explained by the different structure of the study group, most of which were patients with adjustment disorders and non-psychotic organic disorders, whereas in BPD patients the more frequent occurrence of gelotophobia can be explained by specific cognitive-affective dispositions in the processing of social information (for example, an overarching expectation of rejection) (Brück et al. 2018).

This was the first time that gelotophobia had also been found in patients with brain injuries, who may be regarded as an intermediate group between somatic and psychiatric disorders. 20% of these patients exceeded the cut-off point for gelotophobia, which is close to its frequency in the general Russian population (Ivanova et al. 2016). In the group of patients with mental disorders, gelotophobia negatively correlated with the types of attitudes to illness included in the first block (harmonious and anosognostic). Given that this block is characterised by a relative preservation of mental and social adaptation, negative connections with the fear of being laughed at indicate its disadvantageous effect in this group of patients. At the same time, the negative relationship between gelotophobia and the anosognostic type of attitude to illness in psychiatric patients suggests that the more a person is critical of illness, the more prone they are to have a fear of being laughed at. Thus, it is possible that the presence of a normal level of gelotophobia will indicate a more adequate perception of the fact that the patient has a mental disorder, and it acts as one of the markers of integrity of relatively intact critical ability. This assumption is consistent with the view that in schizophrenia gelotophobia may reflect a less pronounced emotional and personal defect and fewer thinking disorders (Stefanenko 2014). In both groups, gelotophobia was also associated with the other two blocks characterised by disadvantageous types of attitudes to illness (anxious, neurasthenic, dysphoric). These

connections were stronger in the neurological patients, which may be linked to more sustained criticism, especially when it comes to an apparent external defect. They assess their condition adequately, and consequently they fear being laughed at, especially considering the identified types of attitude to illness in these patients. It is not clear what appears first: the resulting paranoiac nature of the concept regarding the causes of their illness and its chronic course, which in turn leads to gelotophobia, or primary gelotophobia, which leads to a disadvantageous attitude to the illness.

In the group of patients with brain injuries, all of the above correlations were confirmed as differences in the expression of different types in the groups of gelotophobes versus non-gelotophobes by U-tests. In the group of patients with non-psychotic mental disorders, some interactions (with harmonious, anosognostic, neurasthenic, sensitive and egocentric types) were confirmed, but the differences between gelotophobes versus non-gelotophobes on the anxious, hypochondriac, insensitive and dysphoric types were insignificant.

The difference between the results gained by the two methods of analysis may be related to the limitation of the study, namely, the relatively small sample sizes, especially for the patients with brain injuries. On the other hand, such samples are quite usual in clinical studies because of the difficulties related to both patient recruitment and the realisation of the procedure itself, which is quite tiring for people with such severe conditions.

However, in general those patients with high values of gelotophobia are characterised by disadvantageous attitudes to illness: they less frequently have a harmonious attitude to illness, and have more pronounced neurasthenic, sensitive and egocentric types.

In spite of the fact that the mental disorders in the psychiatric group studied were not severe, gelotophobia was still more expressed in this group compared to the patients with brain injuries. Thus, we can assume the existence of some suspiciousness, paranoid tendencies as a component of gelotophobia in these patients. Following on from this, one can assume that in neurological patients the fear of being laughed at may function as a part of normal adaptive personality, whereas in psychiatric patients psychopathology can contribute more to the development of gelotophobia. On the other hand, we can consider gelotophobia as an adaptive component of the disorder and a criterion for relatively intact critical ability, which requires further research.

In line with our hypothesis, in psychiatric patients gelotophobia was associated with self-stigmatisation, meaning that the two phenomena reinforce one another. These patients may be suspicious of any kind of laughter, and may tend to attribute it to their psychiatric diagnosis; or vice versa, because of their diagnosis they tend to expect laughter to be directed at them from others. On the contrary, the same relationship was not revealed in the neurological patients. In line with our hypotheses, they revealed a less pronounced self-stigmatisation and less frequent gelotophobia compared to the psychiatric patients. Having in fact an often similar spectrum of mental disorders, these people may play different social roles of somatic (neurological) or psychiatric patients, which stigmatise them to different degrees. Some of them still could fear of being laughed at, but the source of their fear is different.

Thus, we may assume that in psychiatric patients, and even those with minor mental disorders, self-stigmatisation and gelotophobia are interrelated. The presence of a mental illness may lead to acute experiencing of ridicule, which is consistent with the model of causes and consequences of gelotophobia (Ruch et al. 2014). In turn, primary gelotophobia may also increase self-stigmatisation. However, in patients with brain injuries, despite the fact that they often have physical defects in their appearance, the mechanisms of the development of the fear of being laughed at are not related to self-stigmatisation.

References

- Babaylova, O. M., Panova, I. E. & Klevakina, Yu. S. (2014). 'Vnutrennyaya kartina bolezni kak osnova adaptatsii k zbolevaniyu u patsientov s glaukomoy' [Internal picture of the disease as the basis of adaptation to the disease in patients with glaucoma]. *Vostok – Zapad. Tochka zreniya*. 1. Retrieved June 13, 2019 from <https://eyepress.ru/article.aspx?13993>.
- Boyd, J. E. et al. (2014). 'Internalized Stigma of Mental Illness (ISMI) scale: A multinational review'. *Comprehensive Psychiatry* 55, pp. 221-231.
- Brazevich, S. S. & Sidorova, A. Yu. (2013) 'Invalidnost': problemy preodoleniya stigmatizatsii i stanovleniya tolerantnogo soznaniya' [Disability: problems of overcoming stigma and becoming tolerant consciousness]. *Modern problems of science and education* 1. Retrieved May 10, 2019 from <http://www.science-education.ru/ru/article/view?id=8192>.
- Brück, C., Derstroff, S. & Wildgruber, D. (2018). 'Fear of being laughed at in borderline personality disorder'. *Frontiers in Psychology* 9: 4, pp. 1-5.
- Chugunov, V. V., Grigoryan, A. Z. & Gorodokin, A. D. (2014). 'Osobennosti vnutrennego otnosheniya k bolezni sredi kontingenta patsientov, stradayushchikh affektivnymi rasstroystvami v strukture addiktsiy' [Features of dynamic change of inner disease-relation type in cohort of patients suffering from addictions]. *Zaporozhye Medical Journal* 6, pp. 61-65.
- Corrigan, P. W. & Rao, D. (2012). 'On the self-stigma of mental illness: stages, disclosure, and strategies for change'. *The Canadian Journal of Psychiatry* 57 (8), pp. 464-469.
- Corrigan, P. W. & Watson, A. C. (2002). 'Understanding the impact of stigma on people with mental illness'. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA)* 1 (1) pp. 16-20.
- Dmitrieva, T. B. et al. (eds.) (2015). *Psikhiatriya. Natsional'noe Rrukovodstvo. Kratkoe Iizdanie [Psychiatry. National guideline. The short edition]*. Executive editor is Aleksandrovskiy, Yu. A. M.: GEOTAR – Media publ.
- Dobrokhotova, T. A. (2016). *Neyropsikhiatriya. Izdanie 2-e, ispravlennoe [Neuropsychiatry. Second Edition, corrected]*. M.: BINOM publ.
- Famin, A. V., Kirpinhenka, A. A. & Famin, F. A. (2014). 'The types of attitude towards disease and quality of life in patients with acute pancreatitis'. *Novosti Khirurgii* 22, pp. 306-312.
- Forabosco, G., Ruch, W. & Nucera, P. (2009). 'The fear of being laughed at among psychiatric patients'. *Humor: International Journal of Humor Research* 22, pp. 233-251.
- Hammer, J. H. & Toland, M. D. (2016). 'Internal structure and reliability of the internalized stigma of mental illness scale (ISMI-29) and brief versions (ISMI-10, ISMI-9) among Americans with depression'. *Stigma and Health. Advance online publication*. Retrieved April 03, 2019 from <http://dx.doi.org/10.1037/sah0000049>
- Havranek, M. M., et al. (2017). 'The fear of being laughed at as additional diagnostic criterion in social anxiety disorder and avoidant personality disorder?' *PLoS ONE* 12 (11), pp. 1-11.
- Hedman, E. et al. (2015). 'Optimal cut-off points on the Health Anxiety Inventory, Illness Attitude Scales and Whiteley Index to Identify Severe Health Anxiety'. *PLoS ONE* 10 (4), pp. 1-12.
- Ivanova A. et al. (2012) 'The fear of being laughed at in healthy people and psychiatric patients. Assessing gelotophobia in Russia'. *Bridging Eastern and Western Psychiatry* 8 (1), pp. 10-17.
- Ivanova, E. M. et al. (2016). 'Russkoyazychnaya adaptatsiya oprosnika gelotofobii, gelotofilii i katagelastitsizma PhoPhiKat' [Russian-language adaptation of the questionnaire of a gelotophobia, gelotophilia and katagelastism PhoPhiKat]. *Voprosy psikhologii* 2, pp. 162-171.

- Ivashchenko, N. E. (2012). 'Issledovanie vnutrenney kartiny bolezni pri shizofrenii' [A study of an internal picture of the disease under schizophrenia]. *Psychiatry, Psychotherapy and Clinical Psychology* 2, pp. 37-45.
- Judit, B. & Séra, L. (2016). 'The relationship between gelotophobia, shame, and humiliation'. *The European Journal of Humour Research* 4, pp. 93-101.
- Kanter, J. W., Rusch, L. C. & Brondino, M. J. (2008). 'Depression self-stigma'. *The Journal of Nervous and Mental Disease* 196 (9), pp. 663-670.
- Link, B. G. et al. (1997). 'On stigma and its consequences: evidence from a longitudinal study of men with dual diagnoses of mental illness and substance abuse'. *Journal of Health and Social Behaviour* 38, pp. 177-190.
- Lysaker, P. H., Roe, D., & Yanos, P. T. (2007). 'Toward understanding the insight paradox: Internalized stigma moderates the association between insight and social functioning, hope, and self-esteem among people with schizophrenia spectrum disorders'. *Schizophrenia Bulletin* 33, pp. 192-199.
- Lyubavskaya, A. A., Oleychik, I. V. & Ivanova, E. M. (2018). 'Osobennosti gelotofobii, gelotofilii i katagelastitsizma u patsientov s depressivnym sindromom' [Features of a gelotophobia, gelotophilia and katagelasticism in patients with a depressive syndrome]. *Clinical Psychology and Special Education* 3 (27), pp. 119-134.
- Moya-Garófano, A., Torres-Marín, J. & Carretero-Dios, H. (2019). 'Beyond the Big Five: the fear of being laughed at as a predictor of body shame and appearance control beliefs'. *Personality and Individual Differences* 138, pp. 219-224.
- Nikolaeva, E. & Elnikova, O. (2014). 'Attitude to the diseases of the people with different health levels'. *Procedia - Social and Behavioral Sciences* 159, pp. 96-100.
- Odynets, T., Brisikin, Y. & Sydorko, O. (2018). 'Psycho-emotional state and quality of life characteristics in women with post-mastectomy syndrome with different types of attitude to the disease'. *Physiotherapy Quarterly* 26 (1), pp. 9-12.
- Petrova, N. N. (2015). 'Kliniko-psikhologicheskaya kharakteristika rasstroystv nastroeniya u patsientov obshchemeditsinskoy praktiki' [Clinical psychological characteristic of mood disorders in patients of general medicine]. *Klinicheskaya i meditsinskaya psikhologiya: issledovaniya, obuchenie, praktika: elektron. nauch. zhurn.* 3 (9). Retrieved July 24, 2019 from <http://medpsy.ru/climp>.
- Platt, T. (2008). 'Emotional responses to ridicule and teasing: Should gelotophobes react differently?' *Humor: International Journal of Humor Research* 21 (2), pp. 105-128.
- Platt, T. (2019). 'Extreme gelotophobia: Affective and physical responses to ridicule and teasing'. *Current Psychology*, pp. 1-9.
- Proyer, R. T. & Ruch, W. (2009). 'Intelligence and gelotophobia: The relations of self-estimated and psychometrically measured intelligence to the fear of being laughed at'. *Humor: International Journal of Humor Research* 22 (1/2), pp. 165-182.
- Ruch, W. & Proyer, R. T. (2009a). 'Extending the study of gelotophobia: On gelotophiles and katagelasticians'. *Humor: International Journal of Humor Research* 22 (1-2), pp. 183-212.
- Ruch W. & Proyer R. T. (2009b). 'Who fears being laughed at? The location of gelotophobia in the Eysenckian PEN-model of personality'. *Personality and Individual Differences* 46 (5-6) pp. 627-630.
- Ruch W., Beermann U. & Proyer R. T. (2009). 'Investigating the humor of gelotophobes: Does feeling ridiculous equal being humorless?' *Humor: International Journal of Humor Research* 22 (1/2), pp. 111-144.
- Ruch W. et al. (2014). 'The state-of-the art in gelotophobia research: A review and some theoretical extensions'. *Humor: International Journal of Humor Research* 27 (1) pp. 23-45.
- Ruch, W. & Proyer, R. T. (2008). 'Who is gelotophobic? Assessment criteria for the fear of being laughed at'. *Swiss J. Psychol.* 67, pp. 19-27.

- Samson, A., Huber, O. & Ruch, W. (2011). 'Teasing, ridiculing and the relation to the fear of being laughed at in individuals with Asperger's syndrome'. *J. Autism. Dev. Disord.* 41, pp. 475-483.
- Stefanenko, E. A. (2014). *Psikhologicheskie Osobennosti gelotofobii pri shizofrenii i affektivnykh rasstroystvakh: dis. kand. psikhol. nauk* [Psychological features of a gelotophobia underat schizophrenia and affective disorders: Ph.D. thesis in Psychological Science].
- Stefanenko, E. A. et al. (2011). 'Diagnostika strakha vyglyadet' smeshnym: russkoyazychnaya adaptatsiya oprosnika gelotofobii' [The Fear of Being Laughed at Diagnostics: Russian Adaptation of Gelotophobia Questionnaire]. *Psikhologicheskii zhurnal* 32 (2), pp. 94-108.
- Stefanenko, E. A. et al. (2014). 'Osobennosti otnosheniya k yumoru i smekhu u bol'nykh shizofreniy' [Features of attitude to humour and laughter in patients with schizophrenia]. *S.S. Korsakov Journal of Neurology and Psychiatry = Zhurnal nevrologii i psikiatrii imeni S.S. Korsakova* 1. pp. 26-29.
- Stewart, S. H. & Watt, M. S. (2000). 'Illness Attitudes Scale dimensions and their associations with anxiety-related constructs in a nonclinical sample'. *Behaviour Research and Therapy* 38 (1), pp. 83-99.
- Titze, M. (1996). 'The Pinocchio Complex: Overcoming the fear of laughter'. *Humor and Health Journal* 5, pp. 1-11.
- Vasilieva, I. A. (2005). 'Otnoshenie k bolezni patsientov na khronicheskom gemodialize' [Attitudes to the diseases in patients with chronic hemodialysis]. *Nephrology* 9 (2), pp. 53-60.
- Vasserman, L. I. et al. (2005). '*Psikhologicheskaya diagnostika otnosheniya k bolezni: posobie dlya vrachey*' [Psychological diagnostics of the relation to a disease: guideline for physicians]. SPb.: NIPNI of V.M. Bekhtereva publ.
- Vorontsova, V. S. et al. (2019). 'Russkoyazychnaya adaptatsiya oprosnika internalizovannoy stigmy psikhicheskogo sostoyaniya (samostigmatizatsii)' [Russian-language adaptation of the Internalized Stigma of Mental Illness Inventory]. *Neurological Bulletin* LI (4), pp. 29-33.
- Watson, A. C. et al. (2006). 'Self-stigma in people with mental illness'. *Schizophrenia Bulletin* 33(6), pp. 1312-1318.