

Neurotic personality and pseudo-cardiac symptoms in a day hospital patients diagnosed at pretreatment between 2004 and 2014

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Summary

Aim. Assessment of associations between occurrence of pseudo-cardiac symptoms in patients qualified for psychotherapy, with intensity and picture of their neurotic personality disorder.

Material and methods. Case records of 2,450 patients from years 2004–2014 were analysed in terms of associations between symptoms reported by means of symptom checklist and global neurotic symptom scores (OWK), global neurotic personality level (XKON) and elevated scores of 24 scales of KON-2006 personality inventory. Associations expressed by OR coefficients with 95% confidence intervals were estimated with logistic regression analyses.

Results. Presence of pseudo-cardiac symptoms seems to be linked to significantly higher neuroticism described both as global neurotic symptom level (OWK) as well as by global neurotic personality desintegration (XKON), and most of 24 scales of KON-2006 inventory.

Conclusions. 1. Personality background examined with the use of KON-2006 seems to be an important risk factor of pseudo-cardiac symptoms being part of or accompanying neurotic syndromes. 2. In women especially strong appeared associations of tachycardia and Sense of being in danger, Exaltation, Asthenia and Conviction of own resourcelessness. 3. In men pain in heart area was substantially associated with Sense of being overloaded. Probably pseudo-cardiac symptom cure may be attained by psychotherapeutic treatment aimed at its background – at elimination of neurotic personality dysfunctions.

Key words: personality, neuroticism, pseudo-cardiac symptoms

Introduction

Cardiac symptoms, such as chest pain, shortness of breath, tachycardia and weakness, are very common in general population. They are also one of the most common reasons for seeking medical care. For example, in the United States of America chest pain itself led to 11.2 million visits to physicians' offices in 2002 [1].

Cardiac symptoms may be related to organic heart disease (e.g. cardiovascular disease, myocarditis or cardiomyopathy) or may be associated with a variety of physical or mental conditions. Non-specific cardiac symptoms are present in a wide range of gastrointestinal, pulmonary, musculoskeletal and even in some neurological disorders. For example, a very common disease – pneumonia (with an annual incidence of 1.98–2.6 per 1,000 people in Europe [2]) may be associated with chest pain, shortness of breath, weakness and tachycardia. Of course, medical interview, physical examination, laboratory tests and medical imaging techniques usually help physicians to diagnose whether the symptoms are of cardiac or non-cardiac origin [3]. But in some cases – also after completion of specialist diagnostic tests – the cause of cardiac symptoms remains unclear. In these situations there is a high probability that patients' symptoms (especially chest pain) are related to psychological background.

Many independent researchers reported that there is an association between non-organic chest pain and stressful events in patients' life. Study by Jerlock et al. [4] revealed that negative life events (e.g. serious illness/death of a close relative, divorce, unemployment, insecurity at work) are more common in patients with unexplained chest pain (UCP) than in healthy individuals. The same study showed that people suffering from pseudo-cardiac symptoms report more sleep problems, mental strain at work and stress at home than healthy subjects. What is interesting males with unexplained chest pain usually complain of more mental strain at work than females while women commonly suffer from more stress at home than men [4]. It is very interesting finding, because study by Jerlock et al. was conducted in Sweden – a country with very low Gender Inequality Index value [5].

Concept of Behavioural Pattern A should be mentioned here, rooted in research on predispositions for suffering on cardiac diseases, inspired in 50s of 20th century with observations of two cardiologists, Friedman and Rosenman [6].

Non-organic chest pain often accompanies various specific psychiatric disorders. Turkish researchers reported that only 24% of patients admitted to cardiology outpatient department with the diagnosis of non-specific chest pain did not meet criteria for any psychiatric disorder according to DSM-IV [7]. Results obtained by them suggest that almost half (47%) of patients with unexplained chest pain suffer from panic disorder, 1 of 5 (21%) may be diagnosed with depressive disorder, similar number (about 20%) of patients might have GAD, OCD or other anxiety or somatoform disorder, while as many as 13% fulfil the criteria for more than one psychiatric disorder [7].

Other researchers usually focus on two mental disorders that are commonly associated with unexplained chest pain. These are: panic disorder and depressive disorder. According to different studies the prevalence of panic disorder among patients with UCP ranges from 16% to 56% [8–14] while the prevalence of depressive disorder ranges from 21% to 63% depending on the method, that is used to diagnose depressive disorder [7, 15, 16]. Of course it is important to remember that panic and/or depressive disorders may be present in patients with chest pain of cardiac origin [17, 18]. Other emotional states or more specific personality disorders are related to more severe course of cardiac illnesses [19, 20] or advanced and possibly hazardous diagnostics [21]. Some studies even suggest that the prevalence of anxiety and depressive disorders is similar in patients with UCP and people suffering from chest pain related to organic heart disease [15]. It may be connected with physiological background: neural impulses from receptors located in heart muscle, inform brain on ischaemia, increase level of experienced anxiety, and decrease pain threshold which leads to anxiety increase [6]. Contrary to common views, however, serious cardiac problems related to stress in patients previously physically healthy, are very rare [22].

Previous studies on the association between non-cardiac chest pain (NCCP) and well-established psychological variables are not always unambiguous. For example Australian and American researchers suggest that neuroticism level (measured using validated 10-items Eysenck Personality Questionnaire, EPQ) is not an independent risk factor for NCCP in the general population [23]. On the other hand more recent studies show that patients with earthquake-induced NCCP (in Christchurch, New Zealand in 2011) score high on the Eysenck neuroticism scale [24].

It is worth to mention here, that an interesting review of concepts of neuroticism and its connections with mental health disorders was made recently by Santos and Madeira [25], who pay attention also to necessity of taking into consideration, during treatment of neurotic patients, personality background, level of functioning and finally stress coping strategies.

In case of other psychological variables, results obtained by different researchers are more convergent. Patients suffering from NCCP score significantly higher on Spielberger state-trait anxiety scale (STAI) than people without NCCP [26]. What is more – health related anxiety level (measured using Health Anxiety Inventory – HAI) is also significantly higher in people with NCCP than in healthy individuals [27]. Other psychological variables, such as anxiety sensitivity (measured using Anxiety Sensitivity Index – ASI) and alexithymia (measured using Toronto Alexithymia Scale – TAS-20) are associated with increased level of pain and individual impairment (e.g. activity decrease) in patients suffering from NCCP [28].

As one can see, the number of identified psychological variables associated with non-organic cardiac symptoms (especially NCCP) is relatively small. That is why it is useful to study the relation between pseudo-cardiac symptoms and different

psychological concepts that are less often mentioned in psychiatric literature. One of the promising ideas is the concept of neurotic personality, which was created by Aleksandrowicz et al. [29–31]. The term “neurotic personality” describes, according to authors, personality traits that are related to the occurrence and persistence of different neurotic disorders (which are currently classified according to ICD-10 as anxiety disorders), for example such as important for differentiation between cardiac symptoms and panic disorder syndromes (coexisting with agoraphobia or not), GAD, and somatoform disorders; and helping with differentiation of patients experiencing “neurotic” symptoms situationally and those predisposed with personality to preserve symptoms as experiencing pattern.

Separate area of research, too large for review in this paper, are biological (e.g. [32–35]) and biopsychosocial (e.g. [36–39]) models of anxiety and neuroticism and their somatic signs.

Santos and Madeira cited above [25], recalled among others concepts of Akiskal regarding conglomerate of various non-adaptive personality traits. In Polish context similar research on personality traits in neurotic disorders and its applications for psychotherapy effectiveness evaluation was done by team of Aleksandrowicz et al. [40–45], leading to an original instrument that was built up [29–31], then team of Rutkowski et al. [46–52], and other authors [53, 54]. In papers initiated by Aleksandrowicz there is a supposition regarding background of other than specific personality disorders/facets, responsible for occurrence of neurotic disorders (neurotic personality). It is a construct close to notion of neuroticism, but is based on observations made by Aleksandrowicz et al. regarding distributions of extreme scores of personality traits (depicted by extreme scale scores in questionnaires) [29–31, 41, 45], of which an application, to patients reporting pseudo-cardiac complaints, is one of this study aims.

Aim

Assessment of the association between self-reported pseudo-cardiac symptoms and neurotic personality traits described with KON-2006 inventory in a sample of psychotherapy selected patients.

Material and methods

Medical records of 2,450 patients diagnosed at the Department of Psychotherapy of the University Hospital in Krakow, with codes shown in Table 1. During qualification for treatment [55] all of the patients filled in the Symptom Checklist KO“O” [56] (see Appendix) and the Neurotic Personality Questionnaire KON-2006 [29–31] (see Appendix) and they also filled in structured Life Inventory [57]. Patients’ data were analysed as anonymised (Bioethical Committee approval no. 122.6120.80.2015).

During process of selection for treatment, patients' serious somatic illnesses were excluded (among others on the basis of consultations before the process of qualification to day hospital was over), and differential diagnosis of symptoms' causes was performed.

Associations between selected reported symptoms and KON-2006 abnormal scale scores (determined with analyses of distributions and ROC method [58–67]) were carried out using the univariate regression analysis, where ORs and 95% CI were estimated with licensed STATISTICA software. Because of significant collinearity (resulting from inter-correlation of KON-2006 inventory subscales) it was impossible to perform multivariate logistic regression analyses.

Table 2. presents sociodemographic data of analysed patients group.

Table 1. **Primary diagnostic codes according to ICD-10 and intensity of disorder in terms of symptoms and personality global dysfunctions evaluated with questionnaires**

	Women (n = 1,694)	Men (n = 756)
F44/45 Dissociative or somatisation disorder	9%	11%
F60 Personality disorder	33%	35%
F40/F41 Anxiety disorder	37%	35%
F48 Neurasthenia	1%***	4%***
F34 Dystymia	1%	1%
F50 Eating disorder	5%***	0%***
F42 Obsessive-compulsive disorder	3%***	6%***
F43 Reaction to stress, adjustment disorder	10%*	7%*
Other	1%	1%
Global Symptom Level (OWK): Mean ± standard deviation (median)	***366 ± 152 (359)	***329 ± 151 (315)
Global Personality Disintegration (XKON): Mean ± standard deviation (median)	36 ± 23 (36)	35 ± 24 (34)

Statistically significant differences: * $p < 0.05$; *** $p < 0.001$; OWK – global score of the KO“O”; XKON – global neurotic personality disintegration coefficient measured using KON-2006

Table 2. **Sociodemographic characteristics**

	Women (n = 1,694)	Men (n = 756)
Age (years) Mean ± standard deviation (median)	29 ± 8 (28)	30 ± 8 (28)
Education		

table continued on the next page

no/primary	3%	4%
secondary (incl. students)	57%	55%
high	40%	41%
Employment		
Employed	46%**	52%**
Unemployed	54%**	48%**
incl. pension	1%*	2%*
Students (high school)	37%	33%

Statistically significant differences: * $p < 0.05$; ** $p < 0.01$

Results

For further analyses we selected two symptoms, which occurrence and intensity was estimated (self-reported) by patients in Symptom Checklist KO“O” (Table 3).

Table 3. Pseudo-cardiac symptoms in study group

Symptom	Women	Men
20. Tachycardia/palpitations	72%***	62%***
40. Pain in heart	46%*	41%*

Statistically significant differences: * $p < 0.05$; *** $p < 0.001$

Many patients (including significantly higher rate of women) reported pseudo-cardiac symptoms in checklists regarding last 7 days before examination (Table 3).

Results of subanalyses performed in subgroups formed depending on the results of symptom checklist KO“O” and personality questionnaire KON-2006 enabling identification of associations between reporting symptoms of tachycardia/palpitations and pain in heart were placed in Table 4. One can notice the domination of percentages of ‘cardiac’ symptoms in patients with very high probability of neurotic disorder and with ‘situational reaction’ over such percentages in groups of patients less disturbed – non-neurotic. As test scores confirming with high probability (parallel to medical diagnosis) occurrence of neurotic and personality disorder, we assumed for checklist KO“O” 220 points for women and 181 points for men; and for KON-2006 questionnaire score above 18 points. For defining low probability of disorders we assumed 180 and 149 points respectively, for women and men in checklist KO“O”, and below 8 points in KON-2006 personality inventory.

Table 4. Pseudo-cardiac symptoms in subgroups depending on disorders characteristics

Criterion of group formation	Symptom:	20. Tachycardia/palpitations		40. Pain in heart	
	n	Women	Men	Women	Men
(1) high probability of neurotic disorders coefficient OWK > 220 pts for W or > 181 pts for M and XKON > 18 pts	$n_W = 1,120$ $n_M = 495$	***898 (80%) ① ②	***342 (69%) ⑤ ⑥	577 (52%) ① ②	236 (48%) ⑤ ⑥
(2) probability of situational reactions coefficient OWK > 220 pkt for W or > 181pts for M and XKON < 8 pts	$n_W = 100$ $n_M = 59$	77 (77%) ③ ④	42 (71%) ⑦ ⑧	51 (51%) ③ ④	28 (48%) ⑦ ⑧
(3) only neurotic personality disorders coefficient OWK < 180 pts for W or < 149 pts for M and XKON > 18 pts	$n_W = 63$ $n_M = 17$	13 (21%) ① ③	3 (18%) ⑤ ⑦	8 (13%) ① ③	1 (6%) ⑤ ⑦
(4) no neurotic disorders, no neurotic personality disorder coefficient OWK < 180 pts for W or < 149 pts for M and XKON < 8 pts	$n_W = 79$ $n_M = 42$	***29 (37%) ② ④	***5 (12%) ⑥ ⑧	*17 (22%) ② ③	*3 (7%) ⑥ ⑧
(5) subgroup "nonspecific" – not fulfilling criterias for groups described above – omitted in comparisons	$n_W = 332$ $n_M = 143$	195 (59%)	73 (51%)	*133 (40%)	*43 (30%)
TOTAL GROUP	$n_W = 1,694$ $n_M = 756$	***1212 (72%)	***465 (62%)	*786 (46%)	*311 (41%)

Criterion of group formation – we assumed that cut-off point for high probability of occurrence of neurotic disorder is: for global symptom level OWK 110% of typical cut-off point score (200 or 165 pts for W or M according to Aleksandrowicz and Hamuda; 1994) – i.e. 220 or 181 pts, and for global personality disintegration coefficient XKON >18 pts (according to Aleksandrowicz et al. 2006–2007 [29–31]); and high probability of absence of neurotic disorder: 90% of typical cut-off score for GSL (OWK) – i.e. 180 or 149 pts, and for global personality disintegration score XKON < 8 pts. Statistical significance between pairs of percentages – between clinical subgroups depending on characteristics of disorder (between rows) was signed as: ②③④⑤⑥⑦⑧①②③④⑤⑥⑦⑧ $p < 0.0005$, ⑥⑦ $p < 0.005$. Statistical significances between women and men groups (between columns) were signed as: * $p < 0.05$ or *** $p < 0.005$, n_W – number in group of women n_M – number in group of men

Data in table 4 shows, that symptom more typical for women than for men (both in total group and in selected group with prominent, very probable neurotic

disorders) are palpitations – significantly more frequently ($p < 0.0001$) reported by women compared to men (80% vs. 69%). Similar tendency was observed in group with low probability of neurotic disorder (in domain of symptoms and personality) but not in the other subgroups. For symptom of pain in heart we have not observed any significant differences for group with high probability of neurotic disorders, and significant differences ($p < 0.05$) only in whole group and marginal groups. It showed that both palpitations as well as pain in “heart” were reported by significantly ($p < 0.005$) higher percentage of patients (regardless of gender) in a group with high probability of neurotic disorder and in a group with neurotic situational reaction versus group with neurotic personality disorder but without symptoms and ‘non-disordered’ group (Table 4).

Thus, comparisons of distributions of GSL (OWK) and XKON and all scales of KON-2006 were performed, in subgroups of women and men, reporting or non-reporting pseudo-cardiac symptoms (Table 5).

From Table 5 one may observe that both women and men suffering from palpitations/tachycardia were characterised by significantly higher global symptom level (OWK) as well as global neurotic personality coefficient (XKON), similar situation was observed for both men and women in regard to pain in heart symptom. Most of KON-2006 scales scores are significantly higher in patients (both in women and in men) reporting pseudo-cardiac symptoms we analyse. Lack of such differences was observed for scales: Tendency to take risks, and Difficulties in emotional relations (subjective feeling of difficulty when contacting others, and connected mistrust) in all subgroups for both symptoms, and Meticulousness (pedantry, uncertainty and perfectionism in thinking and actions), Narcissistic attitude (perceiving him/herself as a person deserving particular privileges, who wants to own more than others, is better than others and is egocentric), Difficulties with decision making (for most comparisons), and in men group only there was no significant differences for scales: Deficit in internal locus of control (perception of him/herself as a person not driven by his/her own aspirations and decisions, unable to have own initiative and steer her/his life on his/her own) and Imagination, indulging in fiction (tendency of the subject to give play to his/her imaginations, especially grandiose ones, need to gain admiration and being liked by others; description of all scales of KON-2006 questionnaire according to [29–31]).

Table 5. KON-2006 neurotic personality inventory's profiles and KO"O" symptom checklist's global symptom level in patients reporting vs. non-reporting pseudo-cardiac symptoms

	Palpitations/tachycardia				Pain in heart			
	Women		Men		Women		Men	
KON-2006 SCALES:	Yes (n = 1212)	No (n = 482)	Yes (n = 465)	No (n = 291)	Yes (n = 786)	No (n = 908)	Yes (n = 311)	No (n = 445)
1. Feeling of being dependent on the environment	***9.3 ± 4.7 (10.0)	***8.3 ± 4.7 (8.0)	ns 8.1 ± 4.6 (8.0)	ns 7.8 ± 4.6 (8.0)	***9.4 ± 4.7 (10.0)	***8.7 ± 4.6 (9.0)	*8.5 ± 4.6 (8.0)	*7.7 ± 4.5 (7.0)
2. Asthenia	***10.2 ± 2.9 (11.0)	***9.0 ± 3.3 (10.0)	***9.9 ± 3.4 (11.0)	***9.1 ± 3.6 (10.0)	***10.3 ± 2.9 (11.0)	***9.6 ± 3.1 (10.0)	***10.1 ± 3.3 (11.0)	***9.3 ± 3.6 (11.0)
3. Negative self-esteem	***6.2 ± 3.6 (6.0)	***5.2 ± 3.5 (5.0)	***5.3 ± 3.6 (5.0)	**4.5 ± 3.3 (4.0)	***6.3 ± 3.7 (6.0)	***5.6 ± 3.5 (5.0)	**5.4 ± 3.6 (5.0)	**4.7 ± 3.4 (4.0)
4. Impulsiveness	***8.3 ± 4.0 (8.0)	***7.0 ± 4.0 (7.0)	***7.6 ± 4.1 (7.0)	***5.9 ± 3.7 (6.0)	**8.4 ± 4.0 (9.0)	***7.5 ± 4.1 (7.0)	**7.5 ± 4.2 (7.0)	**6.5 ± 3.8 (6.0)
5. Difficulties with decision making	***7.6 ± 2.8 (8.0)	***7.0 ± 2.9 (7.5)	ns 7.1 ± 2.9 (8.0)	ns 7.1 ± 2.9 (8.0)	ns 7.5 ± 2.8 (8.0)	ns 7.3 ± 2.9 (8.0)	ns 7.2 ± 2.9 (8.0)	ns 7.0 ± 2.8 (8.0)
6. Sense of alienation	**6.0 ± 4.1 (6.0)	***5.0 ± 3.6 (4.0)	*6.1 ± 3.9 (6.0)	*5.4 ± 3.8 (5.0)	***6.3 ± 4.1 (6.0)	***5.3 ± 3.8 (5.0)	*6.2 ± 4.0 (6.0)	*5.5 ± 3.7 (5.0)
7. Demobilisation	***12.2 ± 4.5 (13.0)	***10.5 ± 4.5 (10.0)	**11.4 ± 4.6 (12.0)	**10.3 ± 4.6 (10.0)	***12.3 ± 4.6 (13.0)	***11.3 ± 4.5 (11.0)	**11.5 ± 4.4 (12.0)	**10.6 ± 4.8 (11.0)
8. Tendency to take risks	ns 2.9 ± 2.4 (2.0)	ns 3.1 ± 2.4 (3.0)	ns 3.7 ± 2.8 (3.0)	ns 3.4 ± 3.8 (3.0)	ns 3.1 ± 2.4 (3.0)	ns 2.9 ± 2.4 (2.0)	ns 3.7 ± 2.8 (3.0)	ns 3.5 ± 2.8 (3.0)
9. Difficulties in emotional relations	ns 6.3 ± 2.3 (6.0)	ns 6.2 ± 2.7 (6.0)	ns 7.2 ± 2.7 (7.0)	ns 7.0 ± 2.6 (7.0)	ns 6.3 ± 2.7 (6.0)	ns 6.2 ± 2.7 (6.0)	ns 7.2 ± 2.7 (7.0)	ns 7.0 ± 2.7 (7.0)
10. Lack of vitality	***11.8 ± 3.6 (12.0)	***10.7 ± 3.7 (11.0)	ns 11.4 ± 3.7 (12.0)	ns 11.0 ± 3.8 (11.0)	***11.8 ± 3.6 (12.0)	***11.2 ± 3.7 (11.0)	*11.6 ± 3.8 (12.0)	*10.9 ± 3.8 (11.0)
11. Conviction of own resourcelessness	***9.2 ± 3.9 (9.5)	***7.9 ± 4.0 (8.0)	**8.5 ± 4.1 (9.0)	**7.5 ± 4.4 (8.0)	***9.2 ± 4.0 (10.0)	***8.6 ± 3.9 (9.0)	*8.6 ± 4.1 (9.0)	*7.8 ± 4.3 (8.0)
12. Sense of lack of control	***5.3 ± 3.2 (5.0)	***4.1 ± 2.9 (4.0)	***4.9 ± 3.5 (4.0)	***3.9 ± 3.0 (3.0)	***5.4 ± 3.3 (5.0)	***4.6 ± 3.1 (4.0)	***5.2 ± 3.5 (5.0)	***4.1 ± 3.2 (3.0)
13. Deficit in internal locus of control	***9.2 ± 4.2 (9.0)	***8.2 ± 4.2 (8.0)	ns 8.2 ± 4.6 (8.0)	ns 7.7 ± 4.3 (8.0)	**9.3 ± 4.4 (9.0)	**8.6 ± 4.1 (8.0)	ns 8.3 ± 4.4 (8.0)	ns 7.8 ± 4.5 (7.0)

14. Imagination, including in fiction	**6.5 ± 2.9 (6.0)	**6.1 ± 3.0 (6.0)	ns 6.7 ± 3.0 (7.0)	ns 6.4 ± 3.1 (6.0)	***6.7 ± 2.9 (7.0)	***6.2 ± 3.0 (6.0)	ns 6.8 ± 2.9 (7.0)	ns 6.4 ± 3.1 (6.0)
15. Sense of guilt	***7.5 ± 2.8 (8.0)	***6.7 ± 3.0 (7.0)	***7.0 ± 3.0 (8.0)	***6.1 ± 3.0 (6.0)	***7.5 ± 2.9 (8.0)	***7.0 ± 2.8 (7.0)	***7.1 ± 3.0 (8.0)	***6.3 ± 3.0 (7.0)
16. Difficulties in interpersonal relations	**6.2 ± 3.0 (6.0)	**5.8 ± 2.7 (6.0)	*6.4 ± 2.8 (7.0)	*6.0 ± 2.9 (6.0)	*6.2 ± 2.9 (6.0)	*5.9 ± 2.9 (6.0)	ns 6.4 ± 2.8 (7.0)	ns 6.2 ± 2.9 (6.0)
17. Envy	***4.4 ± 3.0 (4.0)	***3.7 ± 2.7 (3.0)	*4.6 ± 3.1 (4.0)	*4.0 ± 2.9 (3.0)	***4.5 ± 3.0 (4.0)	***3.9 ± 2.9 (3.0)	*4.6 ± 3.1 (4.0)	*4.1 ± 3.0 (4.0)
18. Narcissistic attitude	ns 2.8 ± 2.6 (2.0)	ns 2.6 ± 2.4 (2.0)	*3.8 ± 3.1 (3.0)	*3.3 ± 2.7 (3.0)	ns 2.9 ± 2.6 (2.0)	ns 2.7 ± 2.5 (2.0)	ns 3.9 ± 3.0 (3.0)	ns 3.5 ± 2.8 (3.0)
19. Sense of being in danger	***6.1 ± 3.1 (6.0)	***4.6 ± 2.9 (4.0)	***5.7 ± 3.2 (5.0)	***4.4 ± 2.8 (4.0)	***6.2 ± 3.2 (6.0)	***5.2 ± 3.0 (5.0)	***5.8 ± 3.2 (6.0)	***4.8 ± 2.9 (4.0)
20. Exaltation	***9.6 ± 2.3 (10.0)	***8.6 ± 2.6 (9.0)	***8.1 ± 2.9 (9.0)	***7.2 ± 2.9 (7.0)	***9.7 ± 2.3 (10.0)	***9.0 ± 2.5 (9.0)	***8.2 ± 2.9 (9.0)	***7.4 ± 2.9 (8.0)
21. Irrationality	**4.6 ± 2.1 (5.0)	**4.3 ± 2.2 (4.0)	*4.0 ± 2.3 (4.0)	*3.6 ± 2.2 (4.0)	***4.7 ± 2.1 (5.0)	***4.3 ± 2.2 (4.0)	*4.0 ± 2.2 (4.0)	*3.7 ± 2.3 (4.0)
22. Meticulousness	**4.1 ± 1.9 (4.0)	**3.8 ± 2.0 (4.0)	ns 4.3 ± 2.2 (4.0)	ns 4.1 ± 2.1 (4.0)	ns 4.1 ± 1.9 (4.0)	ns 3.9 ± 2.2 (4.0)	ns 4.4 ± 2.1 (4.0)	ns 4.1 ± 2.2 (4.0)
23. Ponderings	***8.1 ± 1.8 (8.0)	***7.5 ± 1.9 (8.0)	***7.6 ± 2.2 (8.0)	***7.1 ± 2.1 (7.0)	**8.0 ± 1.8 (8.5)	**7.8 ± 1.9 (8.0)	***7.8 ± 2.1 (8.0)	***7.1 ± 2.2 (7.0)
24. Sense of being overloaded	*5.1 ± 2.1 (5.0)	*4.8 ± 2.0 (5.0)	*5.0 ± 2.1 (5.0)	*4.7 ± 2.1 (5.0)	*5.1 ± 1.9 (5.0)	*4.9 ± 2.0 (5.0)	***5.3 ± 2.0 (5.0)	***4.6 ± 2.0 (4.0)
XKON coefficient	***39.0 ± 22.9 (39.1)	***29.6 ± 21.3 (27.2)	***38.1 ± 23.8 (37.8)	***30.6 ± 22.5 (25.6)	***39.7 ± 23.4 (39.9)	***33.3 ± 22.0 (32.3)	***39.3 ± 23.9 (39.6)	***32.4 ± 23.0 (30.4)
OWK coefficient	***4.10 ± 142 (408)	***256 ± 118 (252)	***380 ± 145 (364)	***248 ± 122 (244)	***434 ± 146 (434)	***307 ± 132 (298)	***405 ± 146 (395)	***276 ± 131 (266)

In table there were placed Mean ± SD and Median. Statistical significance: *p < 0.05; **p < 0.01; ***p < 0.001

Next, separately in women and men groups, univariate logistic regression analysis was performed (Table 6), in whole group and in subgroups of women and men with questionnaires' results indicating high probability of occurrence of neurotic disorder.

Table 6. Univariate logistic regression – women and men

SYMPTOMS: KON-2006 SCALES:	Palpitations/tachycardia		Pain in heart	
	Women	Men	Women	Men
1. Feeling of being dependent on the environment	***1.52 (1.21–1.91)	1.09 (0.71–1.66)	**1.43 (1.15–1.77) *1.44 (1.01–2.06)	1.21 (0.79–1.86)
2. Asthenia	***2.14 (1.68–2.73)	*1.78 (1.17–2.72)	***1.65 (1.29–2.10)	*1.65 (1.08–2.52)
3. Negative self-esteem	**1.51 (1.18–1.94)	**1.61 (1.17–2.20)	1.27 (0.99–1.61)	*1.41 (1.02–1.95)
4. Impulsiveness	***1.74 (1.37–2.20)	***1.77 (1.30–2.41) *1.76 (1.11–2.77)	**1.46 (1.16–1.83)	1.15 (0.84–1.57)
5. Difficulties with decision making	1.27 (0.99–1.61)	1.12 (0.83–1.52)	1.05 (0.85–1.30)	1.09 (0.80–1.47)
6. Sense of alienation	**1.40 (1.11–1.77)	*1.51 (1.08–2.10)	**1.44 (1.16–1.80)	1.38 (0.98–1.94)
7. Demobilisation	***1.77 (1.38–2.27)	**1.63 (1.17–2.28)	**1.50 (1.17–1.91)	*1.57 (1.11–2.22)
8. Tendency to take risks	ns 1.18 (0.94–1.48)	ns 0.90 (0.65–1.25)	ns 0.94 (0.77–1.16)	ns 0.88 (0.63–1.23)
9. Difficulties in emotional relations	ns 1.10 (0.89–1.37)	ns 1.27 (0.95–1.71)	ns 1.02 (0.83–1.27)	ns 1.19 (0.89–1.59)
10. Lack of vitality	***1.85 (1.45–2.35)	1.39 (0.99–1.93)	**1.43 (1.13–1.81)	*1.41 (1.01–1.98)
11. Conviction of own resourcelessness	***2.06 (1.58–2.69)	**1.73 (1.24–2.42)	*1.37 (1.05–1.78)	**1.78 (1.25–2.54)
12. Sense of lack of control	***1.97 (1.57–2.49)	**1.61 (1.20–2.16)	***1.64 (1.31–2.05)	**1.60 (1.19–2.14)
13. Deficit in internal locus of control	***1.52 (1.20–2.01)	1.18 (0.85–1.65)	1.25 (0.99–1.57)	*1.44 (1.02–2.02)
14. Imagination, indulging in fiction	*1.25 (1.01–1.54)	1.15 (0.85–1.56)	***1.42 (1.17–1.73) *1.42 (1.09–1.86)	1.25 (0.93–1.69)
15. Sense of guilt	***1.64 (1.30–2.07)	**1.62 (1.16–2.25)	*1.29 (1.03–1.61)	*1.55 (1.11–2.18)
16. Difficulties in interpersonal relations	**1.35 (1.09–1.67)	*1.37 (1.02–1.85)	**1.38 (1.13–1.67)	1.30 (0.96–1.75)
17. Envy	***1.54 (1.24–1.91)	*1.41 (1.03–1.93)	***1.57 (1.28–1.93) **1.67 (1.23–2.28)	1.29 (0.94–1.77)
18. Narcissistic attitude	*1.44 (1.04–2.00)	*1.56 (1.09–2.25)	1.23 (0.93–1.62)	1.20 (0.85–1.69)
19. Sense of being in danger	***2.67 (2.07–3.47)	***1.79 (1.32–2.44)	***1.56 (1.20–2.01)	**1.61 (1.18–2.20)

table continued on the next page

20. Exaltation	***2.06 (1.65–2.56) <u>*1.48</u> (1.01–2.15)	**1.53 (1.12–2.09)	***1.60 (1.30–1.96)	*1.45 (1.06–1.98)
21. Irrationality	1.20 (0.96–1.50)	1.18 (0.87–1.59)	**1.38 (1.12–1.70) <u>*1.37</u> (1.05–1.77)	1.24 (0.92–1.66)
22. Meticulousness	*1.29 (1.02–1.64)	1.18 (0.84–1.66)	1.12 (0.90–1.40)	*1.45 (1.03–2.04)
23. Ponderings	***1.82 (1.47–2.26)	***1.85 (1.38–2.50)	**1.36 (1.11–1.67)	***1.86 (1.38–2.51) <u>*1.65</u> (1.08–2.52)
24. Sense of being overloaded	1.14 (0.92–1.42)	*1.43 (1.02–1.99) <u>*1.65</u> (1.04–2.63)	1.11 (0.92–1.35)	***2.41 (1.68–3.46) ***3.13 (1.90–5.15)

Statistical significance: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ns – statistically nonsignificant. We added (signed with underline) significant results for subanalyses for subgroup of patients with high probability of neurotic disorder.

Almost all KON-2006 scales showed to be associated in all groups of patients (women or men) with occurrence of pseudo-cardiac symptoms, but strongest links (high OR > 2.00) were observed in women group between palpitations/tachycardia and scales: Asthenia (low dynamics, perceiving his/her own psychic weakness, dissatisfied with life), Conviction of own resourcelessness (subject's perception of him/herself as a person who is unstable, resourceless, not oriented on achieving her/his goals, easily disorganized and withdrawing in a situation of increased difficulties), Sense of being in danger (subject's distrust towards others, foreseeing failures, resignation of own goals, perception of him/herself as a person not enough resistant, not understood, being abused by the environment) and Exaltation (self-perception as a very sensitive person, fragile, emotional, with variable moods, and at the same time seeking for support). In men group similarly strong links were observed only between pain in heart and scale Sense of being overloaded (perception of him/herself as a person subordinated to rules, obligations and tasks, expecting a lot from her/himself, as being overburdened) (Table 6). Results of subanalyses performed in a group of patients with high probability of neurotic disorder (Table 6 – there were placed statistically significant coefficients – underlined) indicate the strongest associations of tachycardia/palpitations in women with Exaltation scale, and in men with scales Impulsiveness (easily out-bursting, quarrelsome, irritable, uneasy for others, physically aggressive, and not accepting those behaviours) and Sense of being overloaded, and pain in heart/thorax in women with Feeling of being dependent on the environment defines the subject's tendency to perceive him/herself as a dependent person, subordinated to others, compliant, unable to refuse, conditioning his/her opinions and actions to others, and at the same time disapproving this tendency), Imagination, indulging in fiction (defines tendency of the subject to give play to his/her imaginations, especially grandiose ones, need to gain admiration and being liked by others),

Envy (experiencing frustration when facing others' successes and depreciation of other persons) and Irrationality (being driven by irrational cognitive schemata (e.g. belief in supernatural powers) and wishful thinking), and in men with scale Ponderings (a tendency of the subject to recollecting, pondering over him/herself and his/her own actions, uncertainty and susceptibility) and exceptionally strongly with Sense of being overloaded scale (OR = 3.31; $p < 0.001$).

Discussion

The study group consisted of 2,450 patients, and 69% of them were women, while 31% were men. Very similar proportion of men and women attending psychotherapy was reported by German psychologists who performed meta-analysis of psychotherapeutic hospital treatment in their country. According to them about 68–70% of people treated with psychotherapy in Germany are women [68].

The average age of people examined during the study was 29 ± 8 years in case of women and 30 ± 8 years in case of men. What is interesting other researchers (for example, Liebherz et al. [68] or Styła [53]) reported that patients attending psychotherapy, who had been enrolled into their studies, were slightly older. This difference is probably associated with the fact, that our study was performed in the city with particularly numerous population of students.

Our study revealed that most dimensions of neurotic personality were associated with significant increase in the risk of tachycardia and chest pain (pain in heart), without somatic background, among patients selected for psychotherapy. Only three out of twenty four features of neurotic personality (scales: 5 – Difficulties in decision making, describing the subject's perception of him/herself as having difficulties with decision making, tendency to hesitate, give a matter careful considerations, deliberations, avoiding having own initiative, 8 – Tendency to take risks – subject's perception of her/himself as a person seeking for danger, not afraid of new situations or – contrary – avoiding and taking no risk; and 9 – Difficulties in emotional relations describes feeling of difficulties in relating to others, and distrust towards the environment connected to it) that were taken into consideration were not related to any pseudo-cardiac symptom both in men and women.

As it was mentioned before neurotic personality leads to the development of neurotic (anxiety) disorders [29–31], where axial symptom is anxiety, with its physiological component. At the same time there is a high prevalence of anxiety disorders among patients with pseudo-cardiac symptoms [6]. The analysis of these two facts leads to the conclusion that there should be an association between neurotic personality and pseudo-cardiac symptoms. Surprising is size of that phenomenon in described group – more than 40% of our subjects potentially could have “reason” to visit family doctor (probably asking for specialised diagnostics) or directly to visit cardiologist.

Occurrence of (reporting in the past 7 days) both pseudo-cardiac symptoms was several times more frequent and significantly more frequent, in groups of patients with high probability of neurotic disorder and neurotic situational reaction. Moreover, palpitations were much more frequently (and significantly more frequently) reported by women, especially those with high probability of suffering neurotic disorder – with high global symptom level and global neurotic personality disintegration.

On one hand, general links between presence of pseudo-cardiac symptoms and global neuroticism indexes (such as global symptom level – reflected in our study by OWK coefficient, and intensity of personality disorders intensity – reflected by XKON coefficient) are to some extent obvious, what is shown by many significant odds ratios (ORs) in analysis performed in whole group, but coefficients being not very high – usually estimated circa 1.5–2.0. On the other hand, emergency of some fragments of neurotic personality profile, sustained even in selected smaller subgroup of “most disordered” patients, indicates more specific, stronger connections – such as symbolic relation between overload of men and complaint of pain in heart, raising associations with heart stroke or coronary episode caused by being overburdened, raising high expectations, following obligations, but on the other hand also with men’s impulsiveness and complaint of symptom of tachycardia/palpitations (“heart not able to stabilise rhythm, balance”), and tendency to ponder and pain in heart (“non-masculine” emotions, experienced on somatic level).

In women, however, especially strong appeared links between palpitations/tachycardia with experiencing feeling of psychological weakness/fragility, hypersensitisation, all of them truly easy to describe as symbolic reasons for heart beats in form of more “emotional overload”, and associations between pain in heart with feeling of being dependent on others, tendency to omnipotent fantasies and wish to be liked by others and irrational beliefs in influence of supernatural forces and related wishful thinking, may formulate specific “constellation” indicating experiencing feeling of unjust “fate” and/or resulting (suppressed) anger.

Our results relating ‘cardiac’ complaints with neuroticism are in concordance with other research e.g. of Sobański et al. [69], who indicated that (in a group of women with neurotic and personality disorders) pain in heart is between symptoms most frequently co-occurring with such core neurotic symptom as tension, and (in both sexes) showed association between pain in heart and passive-aggressive style of solving conflicts in intimate relationship [66]. Similarly, feeling of being inferior as compared to partner, related to pseudo-cardiac symptoms, subordination in a relationship [66], seem to be life context caused by disordered traits of personality such as negative self-esteem, feeling of being dependent of environment.

Of course our study has its limitations. First of all it was conducted among patients with mental disorders from a single day-hospital, so the results cannot be easily generalised to the population. Moreover – data was gathered only once prior to the treatment,

among patients who were selected for psychotherapy [55] when, as it was shown by other research, there is some variation of syndrome/symptom picture [70], this stage of diagnostics includes patients who were already initially evaluated as motivated enough to participate in treatment. Because of this fact the severity of pseudo-cardiac symptoms reported by patients in the study group could be exacerbated compared to other population with less intensified symptoms. And, last but not least – all data collected regarding symptoms were self-reported by patients, with all of persons diagnosed before by medical doctor (psychiatry specialist). Of course it is hard to objectively verify the severity of some pseudo-cardiac symptoms (e.g. chest pain). But in case of other symptoms, especially tachycardia, it is possible to measure studied variables more objectively [71–73].

It is not possible to completely exclude, even in analysed group of relatively young and physically healthy persons, small overlap of occurring non-psychogenic problems e.g. beginning, not yet diagnosed hyperthyreosis.

Patients' intake of drugs and other substances potentially affecting analysed symptoms was not considered in this analysis. From unpublished studies by A. Murzyn (based on group of 169 patients from the same day hospital, years 2008–2011) we know, that rate of subjects using antidepressant or anxiolytic medication was very low – circa 3%.

There is a large body of evidence that pseudo-cardiac symptoms (especially chest pain) may lead to the impairment of daily activities and emotional distress (e.g. [22, 73]). That is why it is important to alleviate chest pain even if it is not associated with any somatic disorder. In case of non-cardiac chest pain of psychological origin the treatment may include pharmacotherapy and/or psychotherapy [74]. Both types of treatment may be useful in patients with pseudo-cardiac symptoms. But psychotherapy has one important advantage over pharmacotherapy. It may lead to significant changes in the structure and function of neurotic personality, thus affect causes, not only symptoms (e.g. [47, 48, 50–53]). That is why the results of pseudo-cardiac symptoms treatment with the use of psychotherapy may show to be more stable over time. Testing that hypothesis requires further, more sophisticated research including comparisons of reporting pseudo-cardiac symptoms before and after therapy, and adequately selected control group of subjects without any psychiatric disorders.

Conclusions

1. Personality background diagnosed as KON-2006 facets seem to be important risk factors of pseudo-cardiac symptoms being part of or accompanying neurotic syndromes.
2. Associations of tachycardia and Sense of being in danger, Exaltation, Asthenia and Conviction of own resourcelessness is especially strong appeared in women.
3. In men pain in heart area is robustly associated with Sense of being overloaded.

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Editor's Note:

Due to the frequent reference to the symptom checklist KO "O" and Neurotic Personality Questionnaire KON-2006 in the current publications, the full text (instructions and a list of variables in the currently applicable version) of both tools is presented in the Appendix (with the consent of the Authors and Publishers).

In order to obtain them, please contact the Department of Psychotherapy, Jagiellonian University Medical College or Polish Psychiatric Association Editorial/Publishing Committee.

APPENDIX

DEPARTMENT OF PSYCHOTHERAPY
COLLEGIUM MEDICUM
JAGIELLONIAN UNIVERSITY
CRACOW, POLAND

Identification

SYMPTOM CHECKLIST "O"

Name: age: date of completion:

Profession: education:

address:

These items concern symptoms and difficulties that sometimes occur in neurotic disorders. Please read every item carefully and circle the answer that best indicates the intensity of your symptoms during the last week. Please use this key:

- 0 = this symptom did not occur during the last week
- a = this symptom occurred at a slight intensity during the last week
- b = this symptom occurred at a moderate intensity during the last week
- c = this symptom occurred at a strong intensity during the last week

0 = this symptom did not occur during the last week
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1. Fear whenever you are on a balcony/ bridge/ or the edge of a cliff..... 0 a b c
2. Feelings of sadness (gloom)..... 0 a b c
3. Choking sensations/ like the feeling of a “lump” in the throat 0 a b c
4. Persistent feelings of fear without any reason..... 0 a b c
5. Frequent crying 0 a b c
6. Feelings of fatigue and weakness in the morning that disappear during the day..... 0 a b c
7. Dissatisfactions with sexual life 0 a b c
8. Impressions that familiar things have become unknown and strange.. 0 a b c
9. Vomiting in stressful situations 0 a b c
10. Feelings of discomfort in large groups..... 0 a b c
11. Skin itching or rashes that disappear quickly..... 0 a b c
12. Checking over and over whether everything is done correctly (the door locked, the oven turned off, and so on)..... 0 a b c
13. Muscle cramps that always happen during certain activities – for example, fingers cramp during writing or playing music and so on 0 a b c
14. Dizziness 0 a b c
15. Lack of self-dependence..... 0 a b c
16. Feelings of annoying internal tensions..... 0 a b c
17. Discovering all kinds of serious diseases in yourself..... 0 a b c
18. Compulsive, bothersome thoughts, words/ or fantasies 0 a b c
19. Nightmares/ frightening dreams..... 0 a b c
20. Strong heartbeats (palpitations) without any physical activity 0 a b c
21. Fear and other unpleasant sensations whenever staying alone, for example in an empty room and so on 0 a b c
22. Feelings of guilt/ blaming yourself 0 a b c
23. Loss of sensitivity in parts of the body 0 a b c
24. Petrifying unexplainable fear that stops you from any kind of intensive experiencing of any unpleasant events..... 0 a b c
25. Very intensive experiencing of any unpleasant events..... 0 a b c
26. Problems with memory (getting worse)..... 0 a b c
27. Difficulties in sexual life because of – for example, tension of muscles in women or early ejaculation in men, and so on..... 0 a b c
28. Feeling as if the world is in a fog 0 a b c
29. Persistent headaches 0 a b c
30. Strongly bothered by feelings that you have no one really close to you 0 a b c
31. Wind (flatulence), or involuntary passing of gas..... 0 a b c
32. Frequently repeating the same acts that seem strange or unnecessary.. 0 a b c
33. Stuttering or stammering..... 0 a b c
34. Feeling flushes of blood into the head..... 0 a b c
35. Annoying lack of self-confidence 0 a b c

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- 36. Losses of attention that interrupt your activity.....0 a b c
- 37. Performing ritualistic actions to try to avoid disease0 a b c
- 38. Persistently fighting with thoughts of hurting or insulting someone0 a b c
- 39. Difficulties in falling asleep0 a b c
- 40. Heart pain0 a b c
- 41. Fear whenever in a car, train, bus, or so on.....0 a b c
- 42. Lack of self-confidence0 a b c
- 43. Temporary (periodic) paralyses of legs or hands0 a b c
- 44. Attacks of panic.....0 a b c
- 45. Experiencing emotions strongly and deeply0 a b c
- 46. Feeling that your thinking is slower and not as clear as usual0 a b c
- 47. Aversions to sexual contacts with persons of the opposite sex0 a b c
- 48. Feeling that the world is unreal0 a b c
- 49. Dryness of the mouth0 a b c
- 50. Avoiding people, even those close to you0 a b c
- 51. Fainting.....0 a b c
- 52. Strong internal desires to do useless things – for example, washing
 hands constantly and so on.....0 a b c
- 53. Sudden involuntary movements (tics).....0 a b c
- 54. Loss of appetite0 a b c
- 55. Being helpless in life0 a b c
- 56. Nervousness (restlessness) in performing that decreases your
 effectiveness0 a b c
- 57. Pertinent concerns over body functions – for example,
 heart-beats, pulse, digestion, and so on.....0 a b c
- 58. Obsessive: immoral thoughts0 a b c
- 59. Attacks of hunger – for example, the necessity to eat at night.....0 a b c
- 60. Feelings of heat or (and) cold without reasons0 a b c
- 61. Fears whenever you are in open places – for example,
 in large square, field, and so on.....0 a b c
- 62. Desire to take your life (suicidal thoughts)0 a b c
- 63. Periodic blindness or deafness0 a b c
- 64. Apprehensiveness.....0 a b c
- 65. Inability to control your emotions despite the consequences.....0 a b c

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66. Difficulty in concentration	0 a b c
67. Decrease or lack of sexual desire	0 a b c
68. Feelings of strangeness of one's own body	0 a b c
69. Diarrhoea	0 a b c
70. Shyness and embarrassment with persons of the opposite sex	0 a b c
71. Fears or other unpleasant sensations that appear only in locked (closed) spaces.....	0 a b c
72. Apathy – showing down of activity and thinking	0 a b c
73. Aphonia – inability to speak that suddenly appears and suddenly disappears	0 a b c
74. Constipation	0 a b c
75. Feelings of being worse than other people.....	0 a b c
76. Destroying things when you are angry or upset.....	0 a b c
77. Fears about one's own health and about contracting serious diseases.....	0 a b c
78. Persistent obsessive counting – for example, pedestrians, cars, lights, and so on.....	0 a b c
79. Frequently waking up during sleep.....	0 a b c
80. Reddening (blushing) on the face, neck, or chest	0 a b c
81. Fears when in crowds	0 a b c
82. Pessimism, expecting failure or disaster in the future.....	0 a b c
83. Faintness in difficult or unpleasant situations	0 a b c
84. Feelings of being threatened – without any reason	0 a b c
85. Unexpected strong feelings of happiness, joy, ecstasy.....	0 a b c
86. Constant fatigue.....	0 a b c
87. Unpleasant feelings connected with masturbation	0 a b c
88. Feelings that you are living as if in a dream	0 a b c
89. Trembling of legs, hands, or whole body.....	0 a b c
90. Feeling that people influence you easily	0 a b c
91. Allergic symptoms – colds, hay fevers, swellings and so on.....	0 a b c
92. Internal pressure to perform acts very slowly and exactly.....	0 a b c
93. Muscle cramps in different parts of the body.....	0 a b c
94. Excessive saliva in the mouth	0 a b c
95. Losing yourself in daydreams	0 a b c
96. Attacks of anger, hostility, that you cannot control.....	0 a b c

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- 97. Feelings of having serious diseases that threaten your life 0 a b c
- 98. Excessive thirst..... 0 a b c
- 99. Insomnia 0 a b c
- 100. Feelings of chill or heat without reason 0 a b c
- 101. Fears of contact with things, animals, or places that are not
 dangerous 0 a b c
- 102. Lack of energy and strength in any kind of activity..... 0 a b c
- 103. Difficulties in breathing – for example, breathlessness that appears
 and disappears suddenly..... 0 a b c
- 104. Feelings of apprehension (dread) before meetings, and so on 0 a b c
- 105. Feeling that people do not think highly of you 0 a b c
- 106. A lowering in the speed of thinking and perceiving..... 0 a b c
- 107. Pains or other disorders in the sexual organs 0 a b c
- 108. Impressions that you have seen something before when you really
 have seen it for the first time 0 a b c
- 109. Unpleasant feelings or pains under the influence of noise,
 bright light, delicate touch..... 0 a b c
- 110. Feelings that people do not like you (are prejudiced against you)..... 0 a b c
- 111. Involuntary passing of urine, for example during sleep..... 0 a b c
- 112. Excessive drinking of alcohol 0 a b c
- 113. Trembling of ‘the face, eyelids, head, or other parts of the body..... 0 a b c
- 114. Excessive perspiration in stress situation 0 a b c
- 115. Feelings of being under the influence of the environment 0 a b c
- 116. Persistent feelings of anger and hostility..... 0 a b c
- 117. Undefined “travelling” pains 0 a b c
- 118. Feelings of rebelliousness 0 a b c
- 119. Sleepiness during the day that forces you to fall asleep for a while,
 despite the situation 0 a b c
- 120. Flushing (a rush of blood) to your head 0 a b c
- 121. Fears about the safety of close relatives that are not in any danger 0 a b c
- 122. Feelings of inferiority when compared to other people 0 a b c
- 123. Disorders of balance..... 0 a b c
- 124. Fears of doing something terrible or of something terrible
 happening 0 a b c
- 125. Feelings that people do not care about you and your problems 0 a b c
- 126. Pressure (floods) of thoughts..... 0 a b c

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127. Menstrual disorders in women	0	a	b	c
128. Feeling low intensities of emotions.....	0	a	b	c
129. Feelings of muscle tensions.....	0	a	b	c
130. Need to be alone.....	0	a	b	c
131. Heartburn.....	0	a	b	c
132. Passing urine frequently.....	0	a	b	c
133. Cramps (spasms) that force you to turn your head.....	0	a	b	c
134. Muscle pains – for example, in. The back, chest, and so on	0	a	b	c
135. Buzzing in the ears	0	a	b	c
136. Nausea	0	a	b	c
137. Decrease in sex drive.....	0	a	b	c
138. Deja vu	0	a	b	c

NEUROTIC PERSONALITY QUESTIONNAIRE KON-2006

The questionnaire is composed of a set of questions concerning various characteristics, preferences, tendencies, attitudes, views, etc. There are no good or wrong answers; after all, every person is different. Please answer honestly and without longer reflection, especially without considering “how the question should be answered” – the proper diagnosing of the health condition requires presenting yourself as you really are.

Only one answer can be given to each question: “yes” or “no”.

Please choose and indicate the one which seems to be right. If some wording is not clear, and it is difficult to decide, because, for instance, both options seem to be possible – please address to the person carrying out the examination.

Before you finish completing the questionnaire, please check if each question has the answer marked.

- | | | |
|---|-----|----|
| 0. The instruction on how to complete the questionnaire is clear | YES | NO |
| 1. I care about being liked by everyone | YES | NO |
| 2. I think for a long time before I make a decision | YES | NO |
| 3. My way of acting is often misunderstood by other people | YES | NO |
| 4. I often take a risk only for the pleasure of risking | YES | NO |
| 5. It annoys me when someone is glad..... | YES | NO |
| 6. I often do things I am asked for against myself | YES | NO |
| 7. I always decide myself about what I want to do | YES | NO |
| 8. It is difficult for me to approach someone I would like to meet | YES | NO |
| 9. I usually have enough energy when I need it most | YES | NO |
| 10. People often “walk all over me” | YES | NO |
| 11. There are not many things that give me pleasure..... | YES | NO |
| 12. I often cannot present my abilities | YES | NO |
| 13. I rarely reveal my feelings, even to my friends..... | YES | NO |
| 14. I am terribly ugly..... | YES | NO |
| 15. I am lucky in everything I do | YES | NO |
| 16. I allow to be directed to often..... | YES | NO |
| 17. Usually, when I have to change something in my life, I feel
tension and lack of confidence | YES | NO |
| 18. It is stupid to contribute to others people’s successes | YES | NO |
| 19. Bad weather upsets me completely | YES | NO |
| 20. I know well what is good and what is evil | YES | NO |
| 21. I am good for nothing, I will never achieve anything in life..... | YES | NO |
| 22. I like sexual arousal..... | YES | NO |

-
- | | | |
|---|-----|----|
| 23. It is not possible to share feelings with someone who has not experienced what I have | YES | NO |
| 24. My docility impedes my life | YES | NO |
| 25. I often have a feeling of an inner emptiness..... | YES | NO |
| 26. I know that I will not fend for myself in the future..... | YES | NO |
| 27. Nobody really cares about me..... | YES | NO |
| 28. I like making decisions quickly..... | YES | NO |
| 29. I often feel mentally weak..... | YES | NO |
| 30. I have a good contact with people..... | YES | NO |
| 31. I like to have fun | YES | NO |
| 32. Working is more difficult for me that for other people | YES | NO |
| 33. My interests change frequently | YES | NO |
| 34. In the morning I usually vigorously jump out of bed..... | YES | NO |
| 35. I cry while watching sad movies more often than others..... | YES | NO |
| 36. I am driven first of all by my instinct, intuition | YES | NO |
| 37. I am very sensitive | YES | NO |
| 38. Even when things go wrong for me, I do not lose hope that there still is some way out..... | YES | NO |
| 39. I feel that nobody needs me..... | YES | NO |
| 40. There are some superior forces that decide for me | YES | NO |
| 41. I have a lot of strength in me, I do not have to force myself to activity..... | YES | NO |
| 42. People say that I am as stubborn as a mule..... | YES | NO |
| 43. Other people's happiness annoys me | YES | NO |
| 44. I almost always feel lonely..... | YES | NO |
| 45. It sometimes scares me how much I can get furious with myself.... | YES | NO |
| 46. I often explore myself to exhaustion | YES | NO |
| 47. I happen to beat a family member or a friend | YES | NO |
| 48. I like doing something dangerous | YES | NO |
| 49. I find it difficult to differentiate which matter is more important and which is less important | YES | NO |
| 50. I feel more self-confident than most of people..... | YES | NO |
| 51. I like to be alone | YES | NO |
| 52. After I quarrel with somebody, I am very angry with myself..... | YES | NO |
| 53. I am certain that supernatural forces exist..... | YES | NO |
| 54. I like to be in the spotlight..... | YES | NO |
| 55. I am frequently insulted | YES | NO |
| 56. Games and bets for money excite me..... | YES | NO |
| 57. Only my own needs are important | YES | NO |
| 58. I often wonder if I can trust my acquaintances | YES | NO |

59. I often think about the people I have harmed.....	YES	NO
60. Sometimes I have the feeling that something terrible will happen ...	YES	NO
61. I quarrel frequently.....	YES	NO
62. I usually quickly forgive those who have treated me badly.....	YES	NO
63. The effects of my actions do not depend on me.....	YES	NO
64. I feel connected with all the people around me.....	YES	NO
65. Usually, before I make a decision, I meticulously analyze all facts and details.....	YES	NO
66. would like to possess a special power, such as nobody else has.....	YES	NO
67. When someone is angry with me, I am waiting until his anger will pass by itself.....	YES	NO
68. I usually do what I consider to be right.....	YES	NO
69. I easily get worried about trifles.....	YES	NO
70. I know what I am heading for in life.....	YES	NO
71. When I am in a difficult situation, there is always someone to help me.....	YES	NO
72. It happens frequently that strangers stare at me critically.....	YES	NO
73. There are spirits that help or harm.....	YES	NO
74. I think for a very long time before I choose something.....	YES	NO
75. When someone is saying drivels, I usually tell him/her about it.....	YES	NO
76. Most of the people close to me completely do not understand me ...	YES	NO
77. Difficult situation is a challenge or a chance.....	YES	NO
78. I know that I am often unbearable.....	YES	NO
79. Religion helps me in life.....	YES	NO
80. I often pay back the people who have hurt me.....	YES	NO
81. If I forget to be careful, I often fail in something.....	YES	NO
82. I enjoy someone else's misfortune.....	YES	NO
83. I like inventing new modes of action.....	YES	NO
84. I do everything very slowly.....	YES	NO
85. Being understanding to people does not lead to anything good.....	YES	NO
86. When I have problems, I work out a plan of action and I follow it ..	YES	NO
87. My relations with people break down and improve alternately.....	YES	NO
88. I am often plagued by memories of the wrong things I have done ...	YES	NO
89. I like to play tricks.....	YES	NO
90. I am afraid to do something new.....	YES	NO
91. I have no influence on what I am like.....	YES	NO
92. I find it difficult to work when nobody helps me.....	YES	NO
93. I am excited and glad about every change in my life.....	YES	NO
94. Before I sign any document, I always read it whole carefully.....	YES	NO
95. I have difficulties with giving orders.....	YES	NO

96. I believe that miracles do happen.....	YES	NO
97. It is easy to hurt me	YES	NO
98. In the situations, where there are many options of choice, I cannot decide on anything	YES	NO
99. I prefer “going the whole hog” rather than being too cautious	YES	NO
100. My relations with people are not as good they should be	YES	NO
101. 101. I often try to do more than I really am able to.....	YES	NO
102. I am less vigorous than most people	YES	NO
103. When it is difficult, I fantasize that it is entirely different	YES	NO
104. When someone shows me kindness, I wonder what lies behind it.....	YES	NO
105. They sometimes tell me that I have too high opinion of myself.....	YES	NO
106. During family celebrations I feel alienated.....	YES	NO
107. When I am in a difficult situation, I accept the fate	YES	NO
108. Strong emotions should be avoided; they tire out too much.....	YES	NO
109. I could devote my life to make the world better	YES	NO
110. Life is a constant effort for me	YES	NO
111. Typically I have a lot of energy throughout the day.....	YES	NO
112. I easily lose control of myself.....	YES	NO
113. I often burst out because of trivial reason	YES	NO
114. I often have no strength to finish what I want to do.....	YES	NO
115. It is difficult for me to accept any refusal.....	YES	NO
116. I am always loosen up, even when everyone around me is nervous	YES	NO
117. I want to have greater wealth than others.....	YES	NO
118. I easily talk about my personal problems, even to the people I do not know well.....	YES	NO
119. Most of the people are not worth a lot	YES	NO
120. I change my mind depending on who am I talking to.....	YES	NO
121. One should always stick to the rules	YES	NO
122. I often get angry with myself	YES	NO
123. I am afraid of insolent people.....	YES	NO
124. I often feel discouraged with how my life works.....	YES	NO
125. I often happen to promptly say something, which I regret later on ..	YES	NO
126. I give up my plans very often.....	YES	NO
127. I want to act in such a way to satisfy anyone.....	YES	NO
128. My pleasures are more important than other’s problems	YES	NO
129. I often take over leadership while cooperating with others	YES	NO
130. I frequently lie as otherwise I will end up at a loss	YES	NO
131. Failures discourage me to everything.....	YES	NO

132.	I have sometimes volunteered for unpleasant tasks	YES	NO
133.	I almost always make decisions based on first impression	YES	NO
134.	I do have things I can be proud of.....	YES	NO
135.	I evade rules frequently	YES	NO
136.	Attractive persons make me feel very embarrassed and shy.....	YES	NO
137.	I usually direct myself according to horoscopes and fortune telling.....	YES	NO
138.	I am a very delicate person.....	YES	NO
139.	After I quarrel with someone, I do not speak to that person for some time.....	YES	NO
140.	I can refuse	YES	NO
141.	I often ponder over what am I like	YES	NO
142.	I like flirting.....	YES	NO
143.	I think that I will be very lucky in the future	YES	NO
144.	I am usually composed.....	YES	NO
145.	I give much thought to what I do very often	YES	NO
146.	When I get angry I happen to hit someone or throw things	YES	NO
147.	I have experienced the influence of supernatural forces	YES	NO
148.	When I lose support in a close person, I must find someone to take care of me	YES	NO
149.	I am often a victim of a confluence of adverse circumstances.....	YES	NO
150.	Nobody is interested in what I feel.....	YES	NO
151.	I have to little faith in me	YES	NO
152.	People often tell me that I show no consideration for others.....	YES	NO
153.	I am usually satisfied with myself.....	YES	NO
154.	Nothing works out in my life the way I would like to	YES	NO
155.	I happen to be so overworked, that I have no time for entertainment	YES	NO
156.	I know that I am worth less than others	YES	NO
157.	I pay special attention to details in everything I do.....	YES	NO
158.	When I am in a difficult situation I expect that something will save me.....	YES	NO
159.	I do not sleep well in a new place	YES	NO
160.	Even when everything goes well, I often give up	YES	NO
161.	It is unfair that others have more than I do	YES	NO
162.	People accuse me of being too much independent, because I do not do what they want	YES	NO
163.	I could easily move out to some other place	YES	NO
164.	I am frequently disappointed with people	YES	NO

165. No matter how great the difficulties are I always hope for the best.....	YES	NO
166. My life is meaningless	YES	NO
167. I like to share all my experiences and feelings with my friends	YES	NO
168. I often miss life chances because I withdraw needlessly	YES	NO
169. I am a pedant	YES	NO
170. Even when I am trying my best, I do not work as fast as others.....	YES	NO
171. My mood swings exhaust everyone, even me myself.....	YES	NO
172. I often dream that I am a millionaire.....	YES	NO
173. Making quick decisions is difficult for me.....	YES	NO
174. I am ready to sacrifice my matters only to be liked	YES	NO
175. I often wonder how others relate to me.....	YES	NO
176. I have a tendency to worry without any special reason.....	YES	NO
177. Any kind of oddity, strangeness, unnaturalness annoy me	YES	NO
178. I frequently do things against my will.....	YES	NO
179. I usually hope that someone else will solve my problems form me .	YES	NO
180. I demand from myself more than most people do.....	YES	NO
181. When I am among people, I often have a feeling of loneliness	YES	NO
182. I usually feel, that everything will be fine.....	YES	NO
183. Sometimes I humiliate myself.....	YES	NO
184. I often belatedly realize, that I have needlessly let myself to be convinced	YES	NO
185. It goes worse for me than for others.....	YES	NO
186. Sometimes I do something dangerous just for pleasure.....	YES	NO
187. I do not care at all whether people like me or not.....	YES	NO
188. I often feel like a powder keg before an explosion	YES	NO
189. I can be very resolute, when situation needs it.....	YES	NO
190. Other people have too much control over me	YES	NO
191. It is not worth loosing time with the people who mean nothing	YES	NO
192. I always must be certain that I have not made any mistake	YES	NO
193. After I quarrel with someone, I try to quickly reconcile.....	YES	NO
194. I like when someone directs the things I am supposed to do	YES	NO
195. It is difficult to convince me, I do not change my mind easily	YES	NO
196. I am often waiting for someone else to take the initiative	YES	NO
197. I can think clearly in difficult situations.....	YES	NO
198. My life depends on circumstances, which I have no impact on.....	YES	NO
199. It irritates me when someone interrupts in what I do.....	YES	NO
200. I “get lost” in life.....	YES	NO
201. In situations of tension and rush, I feel completely helpless.....	YES	NO
202. When I am looking at myself in the mirror, I feel disgust	YES	NO

203.	I have enough of everything very often	YES	NO
204.	I usually go by what I feel in a given moment	YES	NO
205.	Every time when I say something about myself, I “get it in the neck”	YES	NO
206.	I often imagine that I am someone great	YES	NO
207.	I always want to do what I have to as fast as possible	YES	NO
208.	I am very emotional	YES	NO
209.	Failures mobilize me to make effort	YES	NO
210.	One should be always faithful to the principles, even when they disturb life	YES	NO
211.	I usually cannot protect myself when someone is hurting me	YES	NO
212.	I like travelling	YES	NO
213.	I usually know what should be done	YES	NO
214.	I prefer to spend my life alone rather than get involved with someone.....	YES	NO
215.	I often have no impact on what and how I do	YES	NO
216.	I can deal with my troubles	YES	NO
217.	I easily return to an interrupted work	YES	NO
218.	Most of the people I know takes care only of their own business	YES	NO
219.	I deserve to be treated in a special way.....	YES	NO
220.	I am always meticulously thorough, even when I must hurry	YES	NO
221.	I never doubt in what the people with authority say	YES	NO
222.	I want to be admired more than others are	YES	NO
223.	My fate depends first of all on me.....	YES	NO
224.	Most people are more resourceful than I am.....	YES	NO
225.	I often dream about an ideal romance, which I will have one day....	YES	NO
226.	It infuriates me a lot when someone is making fun of me	YES	NO
227.	Music, poetry touch me deeply	YES	NO
228.	I am often cruel to the people close to me.....	YES	NO
229.	I happen to forget about something that in fact I do not want to do .	YES	NO
230.	I frequently have pangs of conscience	YES	NO
231.	Sex is one of the most important things in my life	YES	NO
232.	In today’s world an honest men must lose	YES	NO
233.	I usually do things on my own way, not yield to anyone	YES	NO
234.	I do not like looking at myself in the mirror	YES	NO
235.	I often behave in an way that annoys the people around me.....	YES	NO
236.	People look for my help and understanding.....	YES	NO
237.	I constantly reproach myself for something	YES	NO
238.	Sometimes I dream about fame, recognition, the position I will attain in the future	YES	NO

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239. Almost every difficulty can be overcome YES NO
240. I have to be careful because it is easy to take advantage of me YES NO
241. I easily give in during a quarrel..... YES NO
242. I get tired more quickly than most people..... YES NO
243. Every day I am trying to take a step towards the realization
of my own goals YES NO