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Trait and state anxiety in patients treated with intensive short-term group psychotherapy for neurotic and personality disorders

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Summary

Aim. The study aimed to determine the severity of trait and state anxiety in patients treated for neurotic and personality disorders with intensive, short-term group psychotherapy and to analyse the change of anxiety intensity in the course of treatment.

Methods. 116 patients (81 females and 35 males) participated in the study. The measurement of anxiety intensity was conducted with the State-Trait Anxiety Inventory (STAI) at the beginning and at the end of treatment.

Results. The majority of patients (69% of the study group) demonstrated a high intensity of state anxiety at the beginning of the treatment with 47.4% being classified as very high. High intensity of trait anxiety was observed in 64.7% of participants (50.9% – very high). RCI (Reliable Change Index) and RCV (Reliable Change Value) indicated a significant change in state anxiety intensity in 62.1% of participants (48.3% – significant decrease, 13.8% increase). At the end of treatment more than a half of patients manifested medium and low intensity of both trait and state anxiety.

Conclusions. At the beginning of psychotherapy the majority of patients demonstrated high intensity of both trait and state anxiety. In the course of therapy a considerable reduction of intensity of trait and state anxiety is observed. Significant deterioration in trait anxiety is observed in one out of every thirteen treated patients. Polish adaptation of STAI questionnaire is a useful tool for monitoring effectiveness of psychotherapy and may be successfully applied for screening and detailed diagnosis of neurotic and personality disorders.

Key words: anxiety, psychotherapy effectiveness, neurotic disorders

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Introduction

Anxiety is an emotional state related to the anticipation of danger originating from the outside or inside of the body. It is accompanied by numerous symptoms of mental, motor and autonomic stimulation [1]. What makes it distinctive from fear is the fact that the anticipation is an internal process unrelated to direct danger [2] and is accompanied by cognitive imaginings associated with the experience of danger [3]. In evolution, anxiety was a signal of danger and it enabled individuals to adapt to the surroundings and motivate them to undertake defensive actions which made survival possible [4]. In a broader perspective anxiety is a concept that crosses the boundaries of physiology and psychopathology and its presence in people's lives transcends the boundaries of cultures, societies, languages and historical periods [5].

Psychoanalysis played a key role in the conceptualisation of anxiety. Freud believed that anxiety results from libido being suppressed by superego [6]. In Horney's view [7] primary anxiety is related to the confrontation with the external world and, to put it more precisely, to the fear of negative judgement from the surrounding, a lack of acceptance and hostile reactions. The value of satisfying the need of acceptance – being the result of ineffective defence mechanisms – is the source of secondary anxiety. Rogers [8] associated anxiety with the incorrect self-perception and discrepancies between "false-self and true-self". Dollard and Miller make a clear distinction between fear and anxiety. In their opinion anxiety is a fear which source is unclear or "obscured by repression". By emphasising physiological and neurological bases of anxiety, they present it in terms of an unconditional reaction subjected to learning rules [9]. In the existential concept of anxiety the innate human consciousness of self-subjectivity and relationality places an individual in the face of constant necessity to make choices [10]. Such necessity generates anxiety about the resignation from own authenticity. Some theories, for instance, Izard's theory [11], focus more on emotional disorders, whereas others e.g. Epstein's theory [12], concentrate more on psycho-physiological symptoms of anxiety.

The theory of anxiety understood as a syndrome that involves physiological changes, expressive reactions, subjective feeling of danger, uneasiness and tension and a verbalisation of feelings were put forward by Lazarus and Averill [13] in their theory of emotions. Kępiński defined anxiety as a warning signal against chaos and entropy present in inanimate nature and a signal of losing own individuality for the sake of uncompromising rules of inanimate nature. He suggests that anxiety resides in the essence of life and results from its opposition to the rules of inanimate nature. It is a common phenomenon which takes shape of various forms depending on an evolution stage [14]. The cognitive psychopathology theories link the tendency to react with anxiety to the tendency of attention functioning towards danger and the perception of a situation, stimuli or ambiguous phenomena as threatening [15,16].

Study reports identify the correlation between anxiety disorders and hormone levels i.a. cortisol [17], estradiol or testosterone [18]. Neurophysiology relates disorders of emotion processing to abnormalities in the network connection of prefrontal cortex with amygdala, which results in anxiety reactions and, over a period of time, leads to the development and persistence of anxiety disorders [19]. The research also

identifies the correlation between anxiety and changes in the activity of a prefrontal part of the brain including the lateral prefrontal cortex and anterior cingulate cortex in the processes of concentration and interpretation [20–22]. The resting state fMRI tests demonstrated that patients suffering from a social phobia have a considerably lowered functional connection between left amygdala and medial orbital cortex [22]. What also seems to be of great significance is the epigenetic research on mental disorders, which is currently being conducted. It considers the anxiety component as well. Dmitrzak-Węglarz and Hauser [23] point out that the deficiency of MeCP2 protein which participates in the inactivation of methylated chromatin through the selection of histone deacetylase complex increases anxiety levels, whereas its increased expression results in the stimulation of synaptic plasticity in the hippocampus.

While discussing the psychopathology of anxiety one should make the distinction between anxiety understood as a temporary fleeting emotional state (state anxiety) and anxiety regarded as a sustaining and permanent personality characteristic (trait anxiety) [24]. Anxiety construed as a state is a notion of category and in such form it is traditionally analysed in psychopathology and recognised in psychiatric classifications (ICD-l0 [25], DSM-5 [26]). Wciórka [5] emphasises that the psychopathological context of anxiety in the clinical syndrome is determined by the presence of other symptoms. The presence of symptoms is a decisive factor in classifying a particular clinical syndrome as anxiety in which anxiety constitutes the exclusive or predominant symptom (e.g. Generalised Anxiety Disorder – GAD) or it is attributed with a specific diagnostic and clinical distinctiveness despite the occurrence of significant anxiety component in pathogenesis (e.g. phobias, somatoform or obsessive-compulsive disorders). Alternatively, the mere recognition of significant anxiety concurrence is established (e.g. acute stress disorder with anxiety symptoms) or anxiety is omitted in the name and regarded as a secondary clinical phenomenon (e.g. in endogenous depression or schizophrenia) [5].

Manifestations of neurotic disorders may take a variety of forms but both etiopathological concepts and research reports suggest that psychopathological experience of anxiety is their underlying factor [27]. Despite this common knowledge, the research on the changes in anxiety levels as a result of intensive psychotherapy of patients with neurotic disorders, in particular the one distinguishing between state anxiety and trait anxiety, still seems very scarce. In that context a key question of anxiety dynamics in patients with personality disorders and those with both personality disorders and comorbid neurotic disorders should be posed. The attempt at offering a response to that question is the research on effectiveness of psychotherapy initiated in Poland by Czabała et al. [27–29] and Aleksandrowicz et al. [30], which has been based i.a. on the concept of neurotic personality, and is further carried on and developed by Sobański [31], Styła [32], Mielimąka et al. [33], Cyranka et al. [34].

A considerable number of common scales to measure anxiety severity for clinical purposes refer to the measurement of state anxiety e.g. Hamilton's scale [5]. Trait anxiety is a dimensional term which refers to personality traits. Therefore, it can be examined by means of personality questionnaires e.g. MMPI-2 personality questionnaire or Eysenck's questionnaire [5, 34].

A tool which has verified psychometric qualities and can be utilised to measure both state anxiety and trait anxiety is the Spielberger's State-Trait Anxiety Inventory (STAI) [35]. It is also available in Polish version [36]. The underlying theory of the questionnaire suggests that state anxiety is construed as "a subjective and conscious perception of feelings: apprehension and tension which are concurrent with the related activation or stimulation of the autonomic nervous system" and it is characterised by a high variability subject to the influence of different types of threatening factors. Trait anxiety, however, is defined as "a motive or acquired behavioural disposition which makes an individual susceptible to perceive a wide range of objectively harmless situations as dangerous and react to them with anxiety states which are inadequately severe to the extent of objective danger" [35, p. 36]. Since reports of anxiety prevalence in the population of patients with neurotic and personality disorders are scarce and works on changes in anxiety severity resulting from intensive group psychotherapy are not common both in Polish and global publications, the decision to carry out the aforesaid study was made.

Aim

The study aimed to determine the severity of trait anxiety and state anxiety in patients undergoing treatment of intensive short-term group psychotherapy due to neurotic and personality disorders. Furthermore, the analysis of differences in the severity of anxiety (both trait and state) measured at the onset and conclusion of the therapy was carried out.

Study hypotheses

1. The majority of patients undergoing treatment due to neurotic and personality disorders at the onset of the therapy demonstrate a significantly higher severity of trait anxiety comparing to the one typically observed in the general population.
2. In the course of psychotherapy a significant decrease in the severity of trait anxiety is observed in the majority of patients.
3. At the onset of psychotherapy the severity of state anxiety measured in patients, under safe conditions, is high, whereas it is significantly lower when measured after the therapy was completed.
4. The use of STAI questionnaire allows for the extension of screening diagnostics and proves useful while monitoring psychotherapy efficacy of patients undergoing treatment for neurotic and personality disorders.

Material and methods

Studied group

The studied group consisted of all patients qualified for the therapy at the Outpatient Clinic of Neurotic and Behavioural Disorders between February and September 2014. All persons expressed their free and informed consent to participate in the study

which was approved by the Bioethical Committee (decision no. nr KBET/26/B/2013). The data collected from 116 patients (80% of the total number of individuals receiving treatment at the period when the study was conducted) was included in the statistical analyses. The data of 29 patients was not considered in the study. That included 13 patients (9%) who completed the treatment prematurely (drop-out), and 16 persons (11%) with significant data gaps which prevented its inclusion to statistical analyses.

Inclusion criteria were as follows: the diagnosis of a neurotic or personality disorder (F40–F48, F60.X, F61 under ICD-10) and the continuity of treatment for 10–14 weeks.

Exclusion criteria assumed: premature conclusion of treatment (drop-out), the diagnosis of acute stress disorder (F43.0) or post-traumatic stress disorder (F43.1), the diagnosis of a somatic background for patient's symptoms, the diagnosis of psychotic disorders or organic brain diseases.

At the therapy qualification stage each examined person had two consultations with a psychiatrist and one with a psychologist [33, 34]. The data gathered during the consultations complemented with the results of diagnostic tests (Symptom Checklist "O", Neurotic Personality Questionnaire KON-2006, MMPI-2 Questionnaire) constituted the basis for the diagnosis of disorders under the ICD-10 classification criteria.

Women comprised 69.8% of the examined group (81 persons), whereas the percentage of men was 30.2% (35 persons). The mean age of the examined persons was 30 (min. 19; max. 59). At the diagnostic stage 50% of the studied group age ranged from 20 to 29 years old, whereas 88% of the persons were aged between 20 and 39.

During the qualifying procedure for the treatment 45 individuals (38.8% of the studied group) had neurotic disorders (F40–F48) diagnosed as their primary diagnosis: F40 group (phobic anxiety disorders) and F41 (other anxiety disorders) – 33 persons (28.4% of the studied group), F43.2 (adjustment disorders) – 5 persons (4.3%), F45 (somatoform disorders) – 3 persons (2.6%), F42 (obsessive-compulsive disorders) – 2 persons (1.7%), F48 (other neurotic disorders) – 2 persons (1.7%). Personality disorders were diagnosed in 71 examined persons, which constituted 61.2% of the studied group: 39 persons (33.6%) were diagnosed with other personality disorders (F60.8), 23 persons (19.8%) had personality disorders, unspecified (F60.9) or mixed and other personality disorders (F61). Specific personality disorders were diagnosed in 9 persons (7.8%) (F60.0–F60.7).

Each person who joined the examined group participated in intensive group psychotherapy with elements of individual psychotherapy. The psychotherapy (both group and individual one) was carried out in the stream which integrated the elements of psychodynamic, cognitive and behavioural theories. It included the total of 140 – 190 hours of psychotherapeutic sessions. A detailed report on the psychotherapy can be found in the previous works [33, 34, 37].

Study methods

The measurement of state anxiety and trait anxiety severity was carried out by means of State-Trait Anxiety Inventory (the Polish adaptation of the well-known and widely adopted in anxiety research tool STAI questionnaire developed by C.D. Spielberger).

The study variables (X1 – state anxiety and X2 – trait anxiety) were measured on two occasions: at the onset of the psychotherapy treatment (no later than in the second week of treatment) and at its end (last week of therapy). The obtained values were statistically analysed with the use of appropriately selected methods. Due to the non-normal distribution, the Wilcoxon Signed-Rank test for dependent measures and Mann-Whitney U test for independent measures were applied. Median and ranges were selected respectively as measures of central tendency and dispersion. In further steps of the analysis, the obtained raw values were expressed on the sten scale, referring to the norms established by the Psychological Test Laboratory of the Polish Psychological Association. The normalisation studies of the test for the Polish adult population aged 21–79 were conducted in the year 2000. This allowed for comparison of the severity of trait anxiety and state anxiety in the studied group with the general population. The Polish version of STAI is characterised by equally satisfactory psychometric properties as the original tool [36].

The significance of changes in anxiety severity in the course of the psychotherapy was assessed with the use of a model proposed by Jacobson [38] and Styła [32]. For each pair of pre-post measures the RCI (Reliable Change Index) was calculated. The index considered the differences in groups subdivided by age and gender in the standardisation studies. In line with Jacobson's suggestions, those changes in the values of trait anxiety and state anxiety were regarded significant if their RCI was higher than 1.96 [38]. In order to further clarify the obtained results, RCV (Reliable Change Value) was calculated for the separate age and gender groups which were identified in the standardisation studies. The changes in the measured variable may be considered significant (resulting from other factors than measurement errors related to the tool design, for $p = 0.05$) if the change size exceeds RCV value.

Results

Both state anxiety and trait anxiety measured at the onset of the treatment oscillated in the high ranges in the majority of patients in the studied group.

At the onset of the treatment 69% of the examined persons demonstrated the severity of state anxiety ranging from sten scores of 8 to 10 including 47.4% of those whose severity of state anxiety reached sten scores of 9 and 10. Therefore, the conclusion, which can be accurately inferred, is that most patients experience at least high severity of state anxiety when the treatment begins, whereas in almost every other patient that level of severity is considerably high. The severity of state anxiety at the onset of the treatment can additionally be portrayed by the percentile value median amounting to 91.5. That means that half of the patients at the onset of the treatment is characterised by the severity of state anxiety typical for 8.5% of individuals with the highest anxiety level in the general population. When the treatment began, only one person's measurement of state anxiety severity was at a low level (around sten score of 1). 30.2% of the patients obtained the results ranging from 4 to 7 on the sten scale. This included 17.2% of patients with sten score of 7 and 4.6% of patients with sten scores of 4 and 5. Having analysed the measurements of state anxiety severity at the onset of the treatment, it was observed that the results of only 13.8% (16 patients)

oscillated between sten scores of 1 and 6. However, as many as 86.2% of patients (100 patients) obtained the results corresponding to sten scores between 7 and 10. Table 1 presents major results from state anxiety measurements.

Table 1. **State Anxiety – results obtained at the beginning and the end of the treatment (N = 116)**

X1	Raw data		Percentiles		Sten scores	
	B	E	B	E	B	E
Min.	26	22	8	0	3	1
Q_1	44	36	83	53	7	5
Median	50.5	44	91.5	79.5	8	7
Q_3	60	52	98	93	10	9
Max.	74	72	100	100	10	10
IQR	16	16	15	40	3	4
Mode	M	M	100	100	10	M
Mean	51.6	45.2				
SD	9.90	11.19				

X1 – state anxiety; B – beginning of treatment; E – end of treatment; Q1 – lower quartile; Q3 – upper quartile; IQR – interquartile range; SD – standard deviation

The severity of trait anxiety measured at the onset of the treatment was high in the majority of the patients. When the treatment began, 64.7% of patients demonstrated the severity of trait anxiety within the range of sten scores between 8 and 10. That included 50.9% of the examined persons whose trait anxiety severity was observed at the sten scores of 9 and 10. It can therefore be concluded that at the onset of the treatment most patients demonstrate at least a high level of trait anxiety severity with every other patient reaching a very high level. Considering the first quartile of percentile values, it shall be expected that in 75% of treated patients the level of trait anxiety severity is higher than in 83% of persons from the general population. When the treatment began, only one person had a low level of trait anxiety severity (around sten score of 1). 34.4% of the patients obtained the result range of sten scores of 4 and 7. That included 20.7% of patients with sten score of 7 and 5.2% of patients with sten scores of 4 and 5. Having analysed the measurements of trait anxiety severity at the onset of the treatment, it was observed that the results of only 14.7% (17 patients) oscillated between sten scores of 1 and 6. However, as many as 85.3% (99 patients) obtained the results corresponding to sten scores between 7 and 10. Table 2 presents major results from trait anxiety measurements.

Table 2. **Trait Anxiety – results obtained at the beginning and the end of treatment (N = 116)**

X2	Raw data		Percentiles		Sten scores	
	B	E	B	E	B	E
Min.	27	26	0	0	1	1
Q_1	50	41	78	48	7	5

table continued on the next page

Median	54.5	49	94	77.5	9	7
Q_3	61	57	98	95.5	10	9
Max.	73	71	100	100	10	10
IQR	11	16	20	47.5	3	4
Mode	54	51	98	98	10	7
Mean	54.64	48.75				
SD	8.31	10.34				

X2– trait anxiety; B – beginning of treatment; E – end of treatment; Q_1 – lower quartile; Q_3 – upper quartile; IQR – interquartile range; SD – standard deviation

The measurements carried out at the end of the treatment demonstrated that both state anxiety and trait anxiety levels in almost half of the examined persons were within mean and low values (sten scores between 1 and 6).

When the treatment was concluded, 44% of the patients demonstrated the severity of state anxiety within the range of sten scores of 8 and 10, which included 27.6% of those with sten scores of 9 and 10 (very high values). The sten scores between 1 and 3 were observed in 8.6% of the examined group, whereas 47.4% of the patients obtained the sten scores between 4 and 7.

A high severity of trait anxiety (sten scores of between 8 and 10) was observed in 37.9% of those examined at the end of the treatment including 30.2% of those with very high values (sten scores of 9 and 10). A low severity of trait anxiety (sten scores between 3 and 5) was observed in 9.5% of the studied group, whereas sten scores between 4 and 7 were observed in 52.6%.

Having compared the measurements carried out at the onset and conclusion of the treatment, statistically significant differences in the severity of state anxiety and trait anxiety were observed.

When the treatment started, a low severity of state anxiety (sten scores between 1 and 3) was observed in 1 person, which increased to 8.6% (10 persons) at the end of the therapy. The mean severity of state anxiety (sten scores between 4 and 7) was present in 30.2% (35 individuals) at the beginning of treatment, which increased to 47.4% (55 patients) at the treatment conclusion. Finally, high severity of state anxiety (sten scores between 8 and 10), which was observed in 69% of the studied group (80 patients) at the initial stages, decreased to 44% (51 individuals) when the treatment was completed. The differences in the state anxiety severity are statistically significant values ($p = 0.05$).

Detailed comparison in of the results of trait anxiety variable, inndicate that at the onset of the therapy 1 person oscillated within low values (sten scores between 1 and 3), whereas at the therapy conclusion the percentage went up to 9.5% (11 persons), which was equivalent to the percentage increase of low values by 8.6%. The mean values (sten scores between 4 and 7) were identified in 34.5% of the group (40 patients) when the therapy began. The mean values increased by 18.1% to 61 patients (52.6% of the total) at the end of the therapy. The severity of trait anxiety at a high level (sten scores between 8 and 10) was initially observed in 64.7% of the studied group (75

patients). When the therapy was completed, that value plummeted to 37.9% (44 patients), which was equivalent to a decrease by 26.8% in high values. The measurement of trait anxiety and its lower quartile of percentiles decreased from 78 at the onset (median = 94) to 48.5 (median = 77.5). The observed differences in the severity of trait anxiety are statistically significant (for p = 0.05). Having analysed the size of the changes observed in 45.7% of the examined persons (53 individuals), it was evident that the decrease in the severity of trait anxiety equalled to no fewer than 2 sten scores and in the case of 29.3% (34 persons) it was no fewer than 3 sten scores. The increase of the severity of trait anxiety by at least 2 sten scores was observed in 11.2% of the group (13 individuals) with merely 5.2% (6 individuals) demonstrating the increase of at least 3 sten scores. By taking a general analytical approach, it was observed that the distribution of trait anxiety values obtained in measurements after the treatment was concluded bore a much closer resemblance to the typical values observed in the general population. The percentage of low values (sten scores between 1 and 3) for the general population in normal distribution amounts to 16%, followed by 68% for mean values (sten scores between 4 and 7) with 16% for high values (sten scores between 8 and 10). The values measured at the end of the therapy showed to be 9.5%, 52.6% and 37.9%, respectively. Therefore, the severity of trait anxiety in the patients' population still differs from the one typical of the general population. However, the changes which were observed are considerably lower if compared to the distribution of measurement results from the onset of the treatment, which is illustrated in Figure 1.

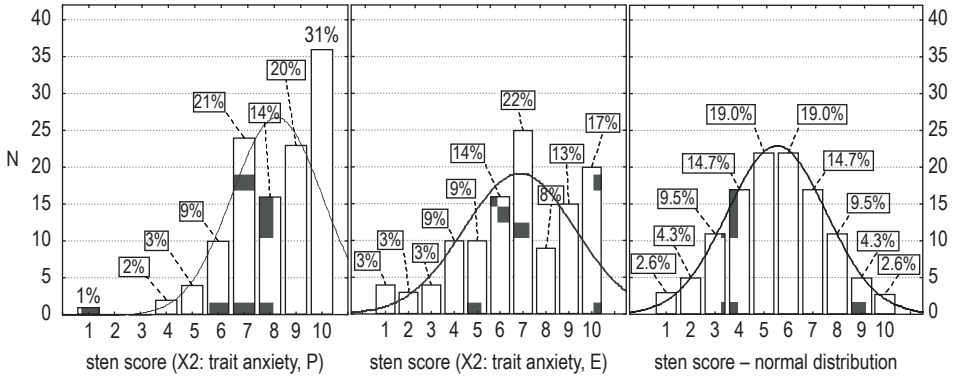

Figure 1. **Changes in severity of trait anxiety in the course of psychotherapy (N = 116)**

B – beginning of treatment, E – end of treatment

RCVs calculated for the groups separated by age and gender in standardisation studies are presented in Table 3. In line with the method proposed by Jacobson and based on the calculated RCI and RCV values for p = 0.05, a significant change in the severity of trait anxiety was observed in 44% of the examined group (51 persons). That

included 36.2% (42 patients) with a diagnosed improvement and 7.8% (9 individuals) of those with a deteriorated condition. A similar measurement for state anxiety scale demonstrated that 62% of the group (72 patients) experienced a significant change with 48.3% (56 individuals) having state anxiety values significantly decreased and 13.8% (16 patients) demonstrating higher values in that area.

Table 3. **RCV values calculated with reference to age and gender. The values were applied to the analysis of raw data changes in state anxiety scale (X1) and trait anxiety scale (X2) measured with STAI questionnaire**

Age range	Gender			
	Women		Men	
	X1	X2	X1	X2
21–40	7.69	8.65	7.95	8.30
41–54	8.66	8.57	7.48	8.96
55–69	8.29	9.88	8.32	9.11
70–79	8.97	10.1	8.92	10.00

X1 – state anxiety; X2 – trait anxiety

Having summarised the comparative analysis of the studied trait anxiety variable from the measurements obtained at the initial and final stages of the therapy, it is observed that every third patient experiences a significant reduction in the severity of trait anxiety in the course of the therapy. However, a significant deterioration is observed in every thirteenth patient. The severity of trait anxiety in the range of sten scores of 1 to 7, when measured at the onset of the treatment, is observed in 35.3% of the studied group and in 62.1% when the treatment is concluded. The high severity of trait anxiety is observed in 64.7% of the group when the treatment starts and in 37.9% when the psychotherapy comes to an end.

Discussion

Changes in experience that occur in the course of psychotherapy have been the focus of many researchers. The assessment of the changes in severity of symptoms and the multidimensional holistic analysis of personality functioning have been the core subjects in that research [31, 33, 34, 39, 40]. Scarce studies referred to the changes which occurred as a result of intensive short-term group psychotherapy in specific areas of personality functioning [41–43]. Due to the significant prevalence of anxiety in patients with mental disorders, which is widely reported in publications [44], the present study offers the analysis of the severity of anxiety in patients who attend group psychotherapy as a treatment method for neurotic and personality disorders. The obtained results suggest that 50% of patients who start the treatment demonstrate a very high severity of anxiety construed as both a temporary state and a relatively permanent personality trait. What is interesting, the primary diagnosis of the disorder does not differentiate patients with regard to the intensity of state/trait anxiety. The results obtained from the studied group

offer a premise to the suggestion that anxiety is a phenomenon which occurs with a high severity in a variety of neurotic and personality disorders (F60.8, F60.9 and F61). No evidence of the research on the prevalence of trait anxiety and state anxiety in groups of patients with neurotic and personality disorders has been found.

The analysis of the changes in the severity of state anxiety and trait anxiety in the course of psychotherapy seems to have drawn very little of researchers' attention. Scarce are the publications which suggest the efficacy of individual psychotherapy in the reduction of trait anxiety severity. In the nineties of the previous century a few studies in small groups with a low number of patients were carried out. However, they focussed on the analysis of the changes in anxiety severity in the course of psychotherapy which was conducted primarily in the cognitive and behavioural approach [45]. The authors of this meta-analysis demonstrated that the severity of trait anxiety diminishes significantly in 40% of patients who receive psychotherapy treatment. Interestingly, the benefits obtained in group psychotherapy were observed in merely ca. 20% of patients and 9% of individuals attending psychotherapy in the psychoanalytical approach. The present study suggests that intensive group psychotherapy carried out in line with the integrative approach (predominantly psychodynamic with elements of cognitive and behavioural approach [33]) leads to a significant reduction of trait anxiety in 36.2% of the examined persons. The study results offer valuable complementary data to the existing knowledge as they suggest that the reduction in the severity of trait anxiety occurs as a result of group psychotherapy in the percentage of patients exceeding considerably the one observed in short-term group therapies conducted in the cognitive and behavioural approach and those in line with the psychoanalytical and behavioural approach [45].

The results of the present study suggest that in the course of 3 months of treatment beneficial changes in personality functioning in terms of anxiety reactions occur as a consequence of intensive group psychotherapy. Conducted in objectively safe conditions, the measurement of state anxiety at the onset of the therapy demonstrated the anxiety severity comparable to the one observed in healthy persons finding themselves in a variety of states regarded as objective danger [46, 47]. Furthermore, the measured anxiety level demonstrated similar values to the one observed by Rutkowski in patients with a diagnosed PTSD resulting from political persecution [48, 49]. At the therapy conclusion the measurement, which was conducted under safe conditions as well, showed that the state anxiety in most patients in the studied group was at a level which was adequate to the study context. It could therefore be concluded that in the course of psychotherapy personality functioning undergoes a considerable change in the tendency to react with anxiety. Patients' reactions become more adequate to current conditions.

The results from the presented study also corroborate the findings postulated in literature [31, 33, 43, 50, 51] that showed the efficacy of intensive group psychotherapy in both reduction of neurotic symptoms and changes in personality functioning. Postulated by the researchers, the necessity of both adequate diagnostics and a monitoring process of changes occurring during a psychotherapeutic process can be carried out with the use of appropriately selected tools. Personality questionnaires (i.e. MMPI-2 [34]) which seem to be beneficial from the perspective of dimensions assessment are often time-consuming for patients and require a lot of researcher's/clinician's time

devoted to analysis of data. The tool utilised in the present study allows for a time-efficient and precise measurement of anxiety which is an indicating factor of mental disorders at the diagnostic stage. The tool can also be applied to assess changes that occur during treatment without the excessive burden of time-consuming procedures being imposed on the patient. Also, the results suggest that STAI questionnaire could serve as a suitable supplement to the Symptom Checklist "O" [52] in screening diagnostics of neurotic and personality disorders.

The present study can be regarded as an introduction to further research on changes which occur in the course of psychotherapy in different areas of personality functioning in patients with neurotic and personality disorders. The obtained data was referred to the values typical of the general population determined in the normalisation studies carried out by the Psychological Test Laboratory. The Reliable Change Index and Reliable Change Value were calculated as well, which allowed the changes obtained during treatment to be regarded not only in a statistical context but also from the perspective of their clinical significance. Undoubtedly, the opportunity to compare the obtained results with the results of a control group or patients treated in a different type/form of therapy would add value to the research. Also, it would be worth conducting follow-up studies to verify the durability of the obtained changes. Such initiative is being planned as subsequent stage of the present study. In order to understand the changes that occur during treatment, it would also prove useful to refer the obtained data to the results which demonstrate changes occurring in the severity of neurotic symptoms and various areas of personality dysfunctions.

The consideration of the present study limitations should be given to considerable differences in numbers of patients within the study group with the diagnosis of specific neurotic disorders and a low number of patients with diagnosed specific personality disorders (F60.0–F60.7). Most patients represented anxiety disorders (F40 and F41) and mixed personality disorders.

Despite the aforesaid limitations, the present study results suggest that a significant number of patients experience the reduction in the severity of both trait anxiety and state anxiety in the course of intensive short-term group psychotherapy with elements of individual therapy. That proves the efficacy of the therapy which was adopted. Simultaneously, a key question could be asked about the factors influencing the lack of changes and deterioration occurring during treatment, as well as the dynamics of symptom severity in the course of the therapy itself. A more in-depth analysis of these areas was infeasible in the present study, for instance, due to a low number of isolated subgroups. However, the study results clearly offer another premise for the recognition of intensive group psychotherapy as a safe and desired method in the treatment of neurotic and selected personality disorders.

Conclusions

At the onset of therapy the severity of trait anxiety in majority of patients treated for neurotic and personality disorders was at a high level. Psychotherapy brings about a significant reduction in trait anxiety in around one third of patients.

The severity of state anxiety measured under safe conditions at the initial stages of the therapy stays at high levels in more than two thirds of patients. When the treatment concluded, more than half of the patients demonstrate the severity of state anxiety within low and middle ranges.

The STAI questionnaire is a recommended tool that could be used to monitor the efficacy of psychotherapy. Furthermore, the tool characteristics observed in the study suggest its potential usability in the screening diagnostics of neurotic and personality disorders. Intensive short-term group psychotherapy carried out in the integrative approach (predominantly psychodynamic with elements of cognitive and behavioural therapy) is an efficient and safe treatment method for patients who manifest anxiety as one of their primary symptoms.

References

1. Flack WF, Laird JD. ed. *Emotions in psychopathology: theory and research*. New York: Oxford University Press; 1998.
2. Carretta CM, Ridner SH, Dietrich MS. *Hope, hopelessness, and anxiety: a pilot instrument comparison study*. Arch. Psychiatr.Nurs. 2014; 28(4): 230–234.
3. Dąbkowska M. *Wybrane aspekty lęku u ofiar przemocy domowej*. Psychiatria 2008; 5(3): 91–98.
4. Kowalczyk-Sroka B, Marmurowska-Michałowska H. *Poziom lęku i depresji w ocenie pacjentów hospitalizowanych z powodu przewlekłej obturacyjnej choroby płuc*. Psychiatr. Pol. 2005; 34(1): 41–49.
5. Wciórka J. *Miejsce lęku w psychopatologii*. Post. Psychiatr. Neurol. 1994; 3(1): 37–52.
6. Chapman C. *Freud, religion, and anxiety*. Morrisville: Lulu.com; 2007.
7. Paris BJ. *Karen Horney: a psychoanalyst's search for self-understanding*. New Haven: Yale University Press; 1996.
8. Arnold K. *Behind the mirror: reflective listening and its tain in the work of Carl Rogers*. Humanist. Psychol. 2014; 42(4): 354–369.
9. Dollard J, Miller NE. *Personality and psychotherapy: an analysis in terms of learning, thinking, and culture*. New York: McGraw-Hill; 1950.
10. Czabała C. *Lęk w ujęciu egzystencjalizmu*. Post. Psychiatr. Neurol. 1994; 3: 29–37.
11. McReynolds P. *The concept of anxiety. Background and current issue*. In: Byrne DG, Rosenman RH. ed. *Anxiety and the heart*. New York: Hemisphere; 1990. p. 3–20.
12. Epstein S. *Toward a unified theory of anxiety*. Prog. Exp. Pers. Res. 1967; 4: 1–89.
13. Lazarus RS, Averill JR. *Emotion and cognition: with special reference to anxiety*. In: Spielberger CD. ed. *Anxiety: current trends in theory and research*. Vol. II. New York: Academic Press; 1972. p.242.
14. Kępiński A. *Lęk*. Krakow: PZWL Medical Publishing; 2002.
15. Mathews A, Mackintosh B. *A cognitive model of selective processing in anxiety*. Cogn.Ther. Res. 1998; 22(6): 539–560.
16. Dotson VM, Szymkowicz SM, Kirton JW, McLaren ME, Green ML, Rohani JY. *Unique and interactive effect of anxiety and depressive symptoms on cognitive and brain function in young and older adults*. J. Depress. Anxiety 2014; Suppl. 1.

17. Rosnick CB, Rawson KS, Butters MA, Lenze EJ. *Association of cortisol with neuropsychological assessment in older adults with generalized anxiety disorder*. Aging Ment. Health 2013; 17(4): 432–440.
18. Ziomkiewicz A, Wichary S, Gomula A, Pawlowski B. *Trait anxiety moderates the association between estradiol and dominance in women*. Physiol.Behav. 2015; 143: 97–103.
19. Kim MJ, Loucks RA, Palmer AL, Brown AC, Solomon KM, Marchante AN. et al. *The structural and functional connectivity of the amygdala: from normal emotion to pathological anxiety*. Behav. Brain Res. 2011; 223(2): 403–410.
20. Comte M, Cancel A, Coull JT, Schön D, Reynaud E, Boukezzi S. et al. *Effect of trait anxiety on prefrontal control mechanisms during emotional conflict*. Hum. Brain Mapp. 2015; 36(6): 2207–2214.
21. Denkova E, Wong G, Dolcos S,Sung K, Wang L, Coupland N. et al. *The impact of anxiety inducing distraction on cognitive performance: a combined brain imaging and personality investigation*. PLoS One 2010; 5(11): e14150.
22. Donzuso G, Cerasa A, Gioia MC, Caracciolo M, Quattrone A. *The neuroanatomical correlates of anxiety in a healthy population: differences between the State-Trait Anxiety Inventory and the Hamilton Anxiety Rating Scale*. Brain Behav. 2014; 4(4): 504–514.
23. Dmitrzak-Węglarz, Hauser J. *Mechanizmy epigenetyczne w chorobach psychicznych i zaburzeniach funkcji poznawczych*. Psychiatria 2009; 6 (2): 51–60.
24. Julian LJ. *Measures of anxiety*. Arthritis Care Res. 2011; 63 (S11): 467–472.
25. Pużyński S, Wciórka J. *Klasyfikacja zaburzeń psychicznych i zaburzeń zachowania w ICD-10. Opisy kliniczne i wskazówki diagnostyczne*. Krakow–Warsaw: University Medical Publishing House "Vesalius", Institute of Psychiatry and Neurology; 2000.
26. *Diagnostic and statistical manual of mental disorders*. 5th edition (DSM-5). Washington, DC: American Psychiatric Publishing; 2013.
27. Czabała JC. *Czynniki leczące w psychoterapii*. Warsaw: Polish Scientific Publishers PWN; 1997.
28. Sobański JA. *Krótka refleksja nad badaniami w dziedzinie psychoterapii. Tendencje i perspektywy dalszego rozwoju*. Psychoterapia 1998; 2(105): 13–27.
29. Jorm AF. *Modifiability of traitanxiety and neuroticism: a meta-analysis of the literature*. Aust. N. Z. J. Psychiatry 1989; 23(1): 21–29.
30. Aleksandrowicz J, Bierzyński K, Martyniak J, Trzecieniecka A, Zgud J. *Skuteczność niektórych form i metod psychoterapii nerwic*. Psychoterapia 1986; 58: 6–16.
31. Sobański JA, Klasa K, Cyranka K, Mielimąka M, Dembińska E, Müldner-Nieckowski Ł. et al. *Effectiveness of intensive psychotherapy in a day hospital evaluated with Neurotic Personality Inventory KON-2006*. Psychiatr. Pol. 2015: 49(5): 1025–1041.
32. Styła R. *Concept of reliable change in the usage of the KON-2006 Neurotic Personality Questionnaire*. Arch. Psychiatry Psychother. 2011; 13(3): 21–24.
33. Mielimąka M, Rutkowski K, Cyranka K, Sobański JA, Müldner-Nieckowski Ł, DembińskaE. et al. *Effectiveness of intensive group psychotherapy in treatment of neurotic and personality disorders*. Psychiatr. Pol. 2015; 49(1): 29–48.
34. Cyranka K, Rutkowski K, Mielimąka M, Sobański JA, Smiatek-Mazgaj B, Klasa K. et al. *Changes in personality functioning as a result of group psychotherapy with elements of individual psychotherapy in persons with neurotic and personality disorders – MMPI-2*. Psychiatr. Pol. 2015. DOI: http://dx.doi.org/10.12740/PP/OnlineFirst/38438.
35. Spielberger CD, Gorsuch R, Lushene R, Vagg P, Jacobs G. *Manual for the State-Trait Anxiety Inventory*. PaloAlto: Consulting Psychologists Press; 1983.
36. Sosnowski T, Wrześniewski K, Jaworowska A, Fecenec D. *STAI – Inwentarz Stanu i Cechy Lęku*. Warsaw: Psychological Test Laboratory of the PPA; 2011.

37. Mazgaj D, Stolarska D. *Model terapii nerwic na oddziale dziennym*. Psychiatr. Pol. 1994; 28(4): 421–430.
38. Jacobson NS, Truax P. *Clinical significance: a statistical approach to defining meaningful change in psychotherapy research*. J. Consult.Clin. Psychol. 1991; 59(1): 12–19.
39. Kösters M, Burlingame GM, Nachtigall C, Strauss B. *A meta-analytic review of the effectiveness of inpatient group psychotherapy*. Group Dyn. 2006; 10(2): 146–163.
40. Berghout CC, Zevalkink J, Katzko MW, de Jong JT. *Changes in symptoms and interpersonal problems during the first 2 years of long-term psychoanalytic psychotherapy and psychoanalysis*. Psychol. Psychother. 2012; 85(2): 203–219.
41. Håland ÅT, Vogel PA, Lie B, Launes G, Pripp AH, Himle JA. *Behavioural group therapy for obsessive–compulsive disorder in Norway. An open community-based trial*. Behav. Res. Ther. 2010; 48(6): 547–554.
42. Rodziński P, Rutkowski K, Murzyn A, Sobański JA, Cyranka K, Dembińska E. et al. *Changes in intensity of neurotic symptoms associated with reduction of suicidal ideation in patients who underwent psychotherapy in the day hospital for the treatment of neurotic and behavioral disorders*. Psychiatr Pol. 2015. DOI: 10.12740/PP/OnlineFirst/36294
43. Cyranka K, Rutkowski K, Mielimąka M, Sobański JA, Klasa K, Müldner-Nieckowski Ł. et al. *Changes in ego strength in patients with neurotic and personality disorders treated with a short-term comprehensive psychodynamic psychotherapy*. Psychiatr. Pol. 2015. DOI:10.12740/PP/OnlineFirst/40020.
44. Jaeschke R, Siwek M, Grabski B, Dudek D. *Lęk w zaburzeniach psychicznych*. Krakow: Library of Polish Psychiatry of PPA; 2011.
45. Fisher PL, Durham RC. *Recovery rates in generalized anxiety disorder following psychological therapy: an analysis of clinically significant change in the STAI-T across outcome studies since 1990*. Psychol. Med. 1999; 29(06): 1425–1434.
46. Robinson OJ, Vytal K, Cornwell BR, Grillon C. *The impact of anxiety upon cognition: perspectives from human threat of shock studies*. Front Hum. Neurosci. 2013; 7: 203.
47. Nigussie S, Belachew T, Wolancho W. *Predictors of preoperative anxiety among surgical patients in Jimma University Specialized Teaching Hospital, South Western Ethiopia*. BMC Surg. 2014; 14: 67.
48. Rutkowski K. *Anxiety, depression and nightmares in PTSD*. Arch. Psychiatry Psychother. 2001; 3(2): 41–50.
49. Rutkowski K. *Następstwa urazów psychicznych doznanych w dzieciństwie*. Krakow: Polish Scientific Publishers PWN, Polish Academy of Sciences Publisher; 2006.
50. Styła R. *Differences in effectiveness of intensive programs of treatment for neurotic and personality disorders. Is it worth to monitor the effectiveness of the therapeutic team?* Psychiatr. Pol. 2014; 48(1): 157–171.
51. Aleksandrowicz JW. *Zmiany częstości występowania objawów nerwicowych*. Psychiatr. Pol. 2001; 35(3): 351–377.
52. Aleksandrowicz JW, Hamuda G. *Kwestionariusze objawowe w diagnozie i badaniach epidemiologicznych zaburzeń nerwicowych*. Psychiatr. Pol. 1994; 28(6): 667–676.

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