

## **Effectiveness of intensive psychotherapy in a day hospital evaluated with Neurotic Personality Inventory KON-2006**

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### **Summary**

**Aim.** The aim of this study was to determine the effectiveness of intensive psychotherapy in the day hospital for neurotic and behavioural disorders as well as the assessment of the usefulness of the Neurotic Personality Inventory KON-2006 for routine evaluation of psychotherapy effectiveness.

**Method.** The results of the questionnaires KON-2006 completed by 690 patients (women – 69%, men – 31%, mean age 29 years, SD 8 years) were analyzed. All persons have received comprehensive mainly psychodynamic psychotherapy (group with elements of individual therapy), in the years 2004-2009 in the Day Hospital for Neurotic and Behavioural Disorders in Krakow.

**Results.** The vast majority of patients, after the end of psychotherapy, achieved beneficial changes in personality corresponding to various degrees of improvements in terms of the questionnaire KON-2006. Only a few patients deteriorated, somewhat more numerous group did not achieve significant changes or the effects are not possible for unambiguous interpretation. These results are highly correlated with those obtained in the personality questionnaire NEO-PI-R.

**Conclusions.** The Neurotic Personality Inventory KON-2006 appears to be an adequate tool to assess the results of intensive, comprehensive psychotherapy, conducted in the day hospital for neurotic and behavioural disorders.

**Key words:** psychotherapy outcome, personality, day hospital

### **Introduction**

The literature review indicates that research on the effectiveness of psychotherapy involves the perspective of the three periods. First, the initial stage of the research, are the '50s of the twentieth century; the second associated with the changes taking place

both in the humanities, as well as in empirical studies, in the decade from 1960 to 1970, in which the emerging new trends in philosophy and psychology have changed the perception and the development of the process psychotherapy itself; and the third, the beginning of which are designated by the early '80s – and which continues on to this day [1, 2].

In 1950 the first comprehensive study on the effectiveness of psychotherapy was published. A pioneer of research on understanding the mechanisms of changes in the process of psychotherapy – which was limited then to psychoanalytic approach, devoid of specific factual framework – was Snyder. He has undertaken the first attempts to answer the question “Does psychotherapy work?” [3]. It was a theoretical basis to establish research, the development of which occurred in the '60s of XX century, and which were related to the already more specific questions such as “what kind of specific therapeutic interventions are more effective in particular types of mental disorders?” (because of the topicality of this question, many years later one of the classical items of literature concerning research on psychotherapy was entitled: *What works for whom?* [4]). These studies, set in philosophical currents that promoted behavioural and cognitive approach, were an attempt to describe the different therapeutic effects depending on the adopted school of psychotherapy [5, 6].

The beginning of the '80s brought a significant proliferation of studies on the effectiveness of psychotherapy, however based more on theoretical assumptions and subjective descriptions of therapists than on the analysis of empirical data. Currently, there is a tendency to, while talking about the evidence of the effectiveness of therapy, refer to randomized controlled trials. Under the influence of acceleration of the development of statistical sciences, randomization research began to take the lead also in medical studies [7-9]. The current model of research in medicine, in which the studies are carried out on the effectiveness of pharmacotherapy, not only influenced the change of perspective to conduct research in the field of psychotherapy (an example of which may be dose-effect models which have been introduced to psychotherapy by Howard et al. [10]), but also the way of thinking about the clinical problems. Thus the patients (not customers) no longer have problems in life, but rather “clinical disorders”; difficulties in functioning are not any more associated with the troubles of life, but there is a “comorbidity of diagnoses”. In this approach much more “adequate”, in terms of methodological correctness, became researches on the effectiveness of individual therapy of patients with single diagnoses treated in the behavioural or cognitive-behavioural mainstream, where strictly defined therapeutic interventions are the analyzed independent variable, and the change in behaviour resulting from these interventions – the dependent variable. Such a research perspective has moved the researchers much closer to the empirical validation, but raises a question whether it has not drifted us from understanding what kind of qualitative changes, especially in experiencing, occur in the life of the individual patient as a result of treatment [1, 11-15]. Limitations of the randomization approach were considered by many clinicians, practitioners, e.g. [7-9, 11-15]. An attempt to close the gap between practice and research is still a challenge for today's therapists – researchers [16, 17]

Six decades after the statement of Eysenck [18] that there is no evidence that psychotherapy has a positive impact on the lives of patients, a vast body of research indicating that this effect is real has been gathered. Presentation of the comprehensive review of research on the effectiveness of psychotherapy goes far beyond the purpose and scope of this article. Despite the plethora of reports that confirm the effectiveness of therapy, many important questions about the impact of mediators and moderators which are responsible for changes in psychotherapy and for the fact when these changes occur, and when not, still remain without answer.

Chorpita et al. [19] summarized the guidelines of the American Psychological Association, regarding the conduct of research on the effectiveness of psychotherapy, which take into account three perspectives of analysis: feasibility, generalizability, costs. Feasibility refers, among others, to the degree of availability of therapies for patients or patients' compliance with the therapy; generalizability takes into account the effect of additional variables on the side of the patient and the therapist, the differences in setting, duration of therapy, the context of conducting therapy; costs refer to the perspective in which both the costs of therapy (including private and refunded by state institutions therapy, as well as the costs resulting from not treated disorders) should be taken into account as a factor influencing the assessment of the effectiveness of therapy. Research on the effectiveness of psychotherapy in Poland have so far limited range (as it seems mainly to the perspective of generalizability) [20].

In currently conducted studies on the effectiveness of psychotherapy researchers utilize a wide variety of psychometric measures and physiological indicators. Perry et al. [21] included 15 studies in a meta-analysis of studies on the effectiveness of psychotherapy in treatment of personality disorders (carried out in the psychodynamic, cognitive-behavioural, and integrated approach). The results indicated that psychotherapy is significantly effective with mean effect size ranging from 1.1-1.9. Using a heuristic model the authors calculated that on average 24.8% patients suffering from personality disorders achieve recovery after one year of treatment. The effectiveness of psychodynamic and behavioural psychotherapy of patients with personality disorders has also been confirmed by Leichsenring et al. [22] in a meta-analysis of 22 studies conducted between 1974 and 2000. Researches included in this meta-analysis met various inclusion criteria: the diagnosis was well established, psychotherapy was conducted according to detailed guidelines, and the effect size was used to evaluate and compare treatment effectiveness. Wilberg and Karterud [23] in a review of publications on the effectiveness of group psychotherapy indicated that despite numerous publications confirming the significance of psychotherapy in treatment of personality and neurotic disorders, still not enough studies focus on group processes. In a research conducted on 38 patients Bateman and Fonagy [24] demonstrated significantly greater effectiveness of psychoanalytic psychotherapy in treatment of borderline personality disorder compared to standard psychiatric treatment. They underlined the need to conduct future research on larger samples of patients and with consideration of the influence of various additional factors, e. g. therapeutic setting. Another meta-analysis was performed by Kusters et al. [25] investigating the results of 70 reports from studies (24 control studies, 44 pre-post

studies) conducted between 1980 and 2004. In the included studies the theoretical orientation of applied psychotherapy and the therapeutic setting were considered as potentially relevant. As expected by authors, in pre-post studies the established effect sizes were greater compared to studies with control groups. Moreover, the authors observed that the severity of symptoms of patients in the waiting list were quite stable. This observation is in contrast to the findings of other researchers e.g. Arindell [26], who postulate that being included in the waiting list is itself an unspecific treatment factor, which is responsible for a favourable change in the intensity of symptoms with the effect size ranging from 0.41 to 0.91. While looking for an explanation of this difference Lambert and Ogles point to significant dissimilarities between these studies: in the intensity of symptoms, the length of waiting time, clinical diagnosis and severity of diagnosed disorders. Moreover they underline the importance of social background of persons included in experimental/control groups. As conclusion they applaud for future research on psychotherapy effectiveness (both individual and group psychotherapy) with consideration for the described (and other hypothetically significant) influencing factors [27].

In Poland, the studies on the effectiveness of psychotherapy have been conducted since the late 70's, among others, in the centre in Krakow, initially with initiative of the former head of the Department of today's Department of Psychotherapy – prof. Jerzy Aleksandrowicz, focused mainly on the methods of evaluation of the day hospital work results connecting group and individual therapies (so-called comprehensive treatment), therapeutic community [28-30], as well as on the search for mediators of this effectiveness, e.g. [31-34], and later also limited comparative studies of cognitive and psychodynamic therapies and the mentioned therapy in the day hospital [35].

In this trend of verifying the effectiveness of treatment in the day hospital, in 2005-2010 the first reports on the effects of psychotherapy evaluated by the initially Polish language Neurotic Personality Inventory KON-2006 have appeared. It is used not only for diagnosis, but also gives the opportunity for observation and empirical verification of the changes occurring in patients [36-39], including the occurrence and severity of personality characteristics (comorbid/responsible for the presence of neurotic disorders). Studies on the effectiveness of psychotherapy with the use of KON 2006 are currently conducted, among others, in the centre in Warsaw [40-42] and internationally [43].

### **Aim**

The aim of this study was to determine the effectiveness of intensive psychotherapy in the day hospital for neurotic and behavioural disorders, as well as the assessment of the usefulness of the Neurotic Personality Inventory KON-2006 for routine evaluation of psychotherapy effectiveness.

## Material and Methods

The results of questionnaires of 690 patients (women – 69%, men – 31%, mean age 29 years, standard deviation 8 years) were used in the study. All persons have undergone in the years 2004-2009 comprehensive, group psychotherapy with elements of individual therapy, carried out mainly in the psychodynamic approach, in the Day Hospital for Neurotic and Behavioural Disorders in Krakow [44, 45]. Psychotherapy typically lasted 12 weeks – 180 hours of group sessions and 12 hours of individual session – the treatment of persons in the studied group (considered completed) lasted min. 8 weeks (mean 11 weeks, standard deviation 3 weeks), and it was led by 6 double teams of experienced therapists regularly supported by certified PTP supervisors, as well as the trainees and residents.

The anonymous data obtained with the consent of patients with diagnoses of neurotic, behavioural and personality disorders (category F4, F5, F6 of the ICD-10 classification) were analyzed in the study. Qualification for treatment included in each case at least two psychiatric examinations, interview and psychological testing and a battery of questionnaires. This allowed the exclusion of other disorders (such as bipolar disorder, schizophrenic psychoses, exogenous disorders or pseudoneurotic disorders, and severe somatic diseases), that exclude the possibility to participate in therapy in the day hospital [45]. Most of the respondents were diagnosed with one of the neurotic disorders or personality disorder and secondary neurotic disorder. The main diagnoses are presented in Table 1.

Table 1. **Main diagnoses according to ICD-10 classification.**

Diagnoses	n	Percentage
Other anxiety disorders (F41)	193	28.0%
Personality disorders (F60, F61)	132	19.1%
Phobic anxiety disorders (F40)	89	12.9%
Somatoform disorders (F45)	78	11.3%
Adjustment disorders (F43)	48	7.0%
Eating disorders (F50)	34	4.9%
Dysthymia (F34)	31	4.5%
Obsessive-compulsive disorder (F42)	31	4.5%
Dissociative/conversions (F44)	20	2.9%
Neurasthenia (F48)	10	1.4%
Other diagnoses (also during diagnostics process)	24	3.5%
Total	690	100.0%

In order to assess the changes obtained in the therapy at the beginning and at the end of hospital stay patients filled the Neurotic Personality Inventory KON-2006, the Symptom Checklist KO'0 [46], and some of the patients also filled NEO-PI-R inventory [47]. Changes in the value of the global XKON and OWK coefficients were

calculated and categorized according to the previously developed and published rules in terms of the size of the improvement or deterioration, or obtaining or not obtaining recovery [35-41], briefly described below.

Improvement (quantitative change; according to J. W. Aleksandrowicz et al.[35-38]) has been defined as follows:

- For changes in global symptoms severity – the XO coefficient:

$$\frac{(\text{OWK}_{\text{initial}} - \text{OWK}_{\text{final}})^2}{966}$$

(the higher value out of two OWK scores multiplied by 966)

966 is the highest attainable OWK score in the “O” Symptoms Questionnaire.

- For changes in the level of neurotic disintegration of personality –XKON coefficient:

$$\frac{(\text{XKON}_{\text{initial}} - \text{XKON}_{\text{final}})^2}{104}$$

(the higher value out of two XKON scores multiplied by 104)

104 is the highest attainable score of XKON coefficient.

When the final value of measured coefficients (OWK or XKON) was higher than the initial value (the patient’s condition has deteriorated) the outcome is multiplied by (-1).

The magnitude of changes in symptoms (and personality) have been categorized as follows:

- “major improvement” – the value of XO coefficient (and XKON respectively) ranging between  $<0.1; 1>$ ,
- “minor improvement” – the value ranging between  $<0.01; 0.1>$ ,
- “no significant change” – the value ranging between  $<-0.01; 0.01>$ ,
- “minor deterioration” – the value ranging between  $<-0.01; -0.1>$ ,
- “major deterioration” – the value ranging between  $<-1; -0.1>$ .

Symptomatic recovery has been defined with values of global symptoms severity below 200 points for women and 165 points for men. Complete recovery from neurotic disintegration of personality has been defined with values of XKON coefficient (from the KON-2006 questionnaire) equalling 8 or less points. Patients whose XKON scores in the measurement at the end of treatment had been in that range were considered as recovered from neurotic disintegration. Changes of XKON within the range characteristic for healthy population, as well as XKON values in measurements at the beginning or at the end of treatment between 8 and 18, were considered as unspecific, thus uninterpretable [36-38].

Additionally, criteria of clinically significant change proposed by R. Styła [39, 40] (a concept derived from the theory of change proposed by Jacobson and Truax) have been applied.

The Reliable Change Index (RCI) described by Jacobson, Follette and Revenstorff in 1984 is a statistical method to ascertain the significance of changes observed in two consecutive measurements. It is helpful in determining whether the observed changes at a given level of confidence can be attributed to a real, clinically significant effect or only to fluctuations in measurements. Based on this index Styła proposed the Reliable Change Value (RCV) as useful in determining the reliable change in respect to two measurements ( $x_1$  and  $x_2$ ) at a given level of confidence. After calculating the RCV

values for the XKON coefficient, and taking into account the cutoff points Styła proposed the following assessment criteria of change within the neurotic personality:

1. recovery: final XKON value below 8 points and a decrease by at least 13.3 points,
2. probable recovery: final XKON value between 8 and 18 points and a decrease by at least 13.3 points,
3. significant improvement: final XKON higher than 18 points, decrease by at least 13.3 points,
4. insignificant effect: change of XKON value less than 13.3 points,
5. significant deterioration: an increase of the XKON value by more than 13.3 points.

## Results

The results of treatment in the evaluation using categories of change of the XKON coefficient of the KON-2006 inventory are presented in Table 2A-2C below.

Table 2A. **Categories of improvement according to J.W. Aleksandrowicz et al.**

Change in personality (XKON)	Change in symptoms (OWK)				Total
	Major improvement	Minor improvement	No changes	Deterioration	
Significant improvement	258 – 37.4%	64 – 9.3%	11 – 1.6%	2 – 0.3%	335 – 48.6%
Slight improvement	89 – 12.9%	60 – 8.7%	18 – 2.6%	5 – 0.7%	172 – 24.9%
No changes	40 – 5.8%	47 – 6.8%	20 – 2.9%	6 – 0.9%	113 – 16.4%
Deterioration	9 – 1.3%	26 – 3.8%	24 – 3.5%	11 – 1.6%	70 – 10.1%
Total	396 – 57.4%	197 – 28.6%	73 – 10.6%	24 – 3.5%	690 – 100.0%

The vast majority – nearly three quarters of patients – showed improvement (73%), including almost a half (49%) with major improvement, only 16% did not obtain any change, and every tenth person experienced deterioration in terms of personality disintegration (Table 2A). In addition, improvements ranked by changes in XKON were mostly accompanied by symptomatic improvement in the symptom checklist KO”0”.

Table 2B. **Categories of “recovery” according to J. W. Aleksandrowicz et al.**

Change in personality (XKON)	Change in symptoms (OWK)			Total
	Recovery	Lack of recovery	Unspecified result	
Recovery	169 – 24.5%	18 – 2.6%	17 – 2.5%	204 – 29.6%
Lack of recovery	138 – 20.0%	168 – 24.3%	13 – 1.9%	319 – 46.2%
Unspecified result	88 – 12.8%	26 – 3.8%	53 – 7.7%	167 – 24.2%
Total	395 – 57.2%	212 – 30.7%	83 – 12.0%	690 – 100.0%

\*the changes associated with uninterpretable XKON values before and after therapy

One third of patients obtained recovery in terms of personality, about half of patients did not obtain this effect, moreover, the results of every 4<sup>th</sup> person were uninterpretable in these categories (due to XKON values between 8-18 points [36-38]). It is noteworthy that a large group of patients obtaining no recovery according to XKON reported relief in the level of symptoms, corresponding to recovery (Table 2B).

Table 2C. **Categories of improvement (RCI) according to R. Styła**

Categories of XKON changes according to R.Styła (RCI)	Categories of XKON changes according to J.W.Aleksandrowicz et al.				
	Major improvement	Minor improvement	No changes	Deterioration	Total
Improvements	333 – 48.3%	59 – 8.6%	0	0	392 – 56.8%
Lack of changes	2 – 0.3%	113 – 16.4%	113 – 16.4%	26 – 3.8%	254 – 36.8%
Deteriorations	0	0	0	44 – 6.4%	44 – 6.4%
Total	335 – 48.6%	172 – 24.9%	113 – 16.4%	70 – 10.1%	690 – 100.0%

Proposals of Aleksandrowicz et al. and Styła proved to be complied with each other, except for the more frequent classification of results as the lack of change Styła (Table 2C).

Effect size for KON-2006 questionnaire, according do Cohen's interpretation, was significant – in a group of 690 patients it was 1.01 (using biserial correlation method for measurements performed with the questionnaire at the beginning and at the end of treatment) and 0.92 (when calculating the value using comparison of changes observed in the treatment group with effects observed in the group of 83 patients “identified as waiting to be treated”, who filled out the KON-2006 questionnaire twice, but never started treatment [48, 49]).

Measurements of results in terms of changes in the values of particular scales of KON-2006 questionnaire observed in the studied group of patients are presented separately for men and women.

Table 3. **Changes in the KON-2006 questionnaire resulting from intensive psychotherapy in day hospital – a group of women.**

Scale/ Mean ± Standard Deviation	Before therapy N=473	After therapy N=473	p	Comparison group # N=326
1. A sense of being dependent on the environment	9.1±4.6	6.0±4.3	***	3.6 ± 3.5
2. Asthenia	10.1±2.9	6.7±4.0	***	3.6 ± 3.0
3. Negative self-esteem	5.7±3.3	2.8±3.0	***	1.4 ± 2.1
4. Impulsiveness	7.7±3.8	5.4±3.7	***	4.3 ± 3.1
5. Difficulties with decision making	7.6±2.8	6.1±3.0	***	4.5 ± 2.8
6. Sense of being alienated	5.3±3.7	3.0±3.0	***	3.0 ± 2.0
7. Demobilization	12.1±4.3	8.3±4.5	***	5.3 ± 3.8

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8. Risk tendencies	2.6±2.2	3.7±2.4	***	4.7 ± 3.1
9. Difficulties in emotional relations	6.1±2.7	5.0±2.4	***	4.5 ± 2.3
10. Lack of vitality	11.9±3.5	8.8±3.9	***	6.5 ± 3.3
11. Conviction of own resourcelessness in life	9.1±3.7	5.7±4.2	***	3.2 ± 3.4
12. Feeling of lack of impact	4.8±3.1	2.5±2.6	***	1.5 ± 2.0
13. Deficit in internal locus of control	9.0±4.1	6.1±3.9	***	3.6 ± 3.3
14. Imagination, fantasizing	6.2±2.8	4.5±3.0	***	4.0 ± 2.7
15. Feeling of guilt	7.1±2.8	4.8±3.4	***	2.9 ± 2.5
16. Difficulties in interpersonal relationships	5.9±2.8	4.5±2.7	***	3.2 ± 2.3
17. Envy	3.7±2.6	2.4±2.5	***	1.8 ± 2.3
18. Narcissistic attitude	2.3±2.2	2.1±2.0	ns	1.7 ± 2.0
19. A sense of being in danger	5.4±2.9	3.2±2.8	***	2.5 ± 2.4
20. Exaltation	9.4±2.4	7.1±3.0	***	5.5 ± 2.8
21. Irrationality	4.6±2.1	3.6±2.1	***	3.9 ± 2.0
22. Meticulousness	4.0±2.0	2.8±2.1	***	2.6 ± 1.9
23. Pondering	7.9±1.9	6.2±2.3	***	5.0 ± 2.2
24. A sense of being overload	5.0±2.0	3.9±2.0	***	4.2 ± 2.3
XKON coefficient	36.2±21.8	17.1±20	***	13.7±16.7

the results of Student's t-test or its nonparametric equivalent:\*\*\*p<0.0005; #value for healthy and untreated population described in the test's manual [36].

**Table 4. Changes in the KON-2006 questionnaire resulting from intensive psychotherapy in day hospital – a group of men.**

Scale/ Mean ± Standard Deviation	Before therapy N=473	After therapy N=473	p	Comparison group # N=326
1. A sense of being dependent on the environment	9.1±4.4	5.9±4.2	***	2.9 ± 2.6
2. Asthenia	9.8±3.3	6.8±3.9	***	2.6 ± 2.5
3. Negative self-esteem	4.9±3.3	2.5±2.8	***	0.8 ± 1.1
4. Impulsiveness	6.8±3.8	4.9±3.6	***	3.8 ± 2.7
5. Difficulties with decision making	7.5±2.7	6.1±3.0	***	4.1 ± 2.5
6. Sense of being alienated	5.7±3.8	3.1±3.2	***	1.5 ± 1.8
7. Demobilization	10.9±4.4	7.7±4.5	***	4.5 ± 2.6
8. Risk tendencies	3.1±2.5	4.4±2.5	***	5.5 ± 3.0
9. Difficulties in emotional relations	7.2±2.7	5.4±2.8	***	5.0 ± 2.1

*table continued on the next page*

10. Lack of vitality	11.8±3.4	8.7±3.9	***	5.8 ± 2.7
11. Conviction of own resourcelessness in life	8.5±4.2	5.5±4.1	***	2.2 ± 2.5
12. Feeling of lack of impact	4.5±3.1	2.5±2.7	***	1.0 ± 1.4
13. Deficit in internal locus of control	8.4±4.3	5.9±4.0	***	3.1 ± 2.5
14. Imagination, fantasizing	6.8±3.0	5.2±2.9	***	4.3 ± 2.4
15. Feeling of guilt	6.8±2.9	4.5±3.1	***	2.2 ± 2.4
16. Difficulties in interpersonal relationships	6.2±2.8	4.6±2.7	***	3.2 ± 2.3
17. Envy	4.3±2.9	2.6±2.5	***	1.9 ± 1.9
18. Narcissistic attitude	3.4±2.9	2.8±2.2	ns	2.5 ± 2.4
19. A sense of being in danger	5.3±2.9	3.1±2.6	***	1.9 ± 1.6
20. Exaltation	8.0±2.6	5.9±3.0	***	3.8 ± 2.7
21. Irrationality	3.9±2.1	3.4±2.2	***	3.3 ± 2.1
22. Meticulousness	4.5±2.1	3.1±2.2	***	2.4 ± 1.8
23. Pondering	7.6±2.0	6.0±2.4	***	4.2 ± 2.3
24. A sense of being overload	4.9±2.0	4.1±2.1	***	4.5 ± 2.2
Index XKON	36.8±22.4	17.8±20.2	***	9.5±13.0

\*\*\* $p < 0.0005$ ; #value for healthy and untreated population described in the test's manual [36].

Substantial and statistically significant differences between the values of XKON before and after treatment, as well as between 23 out of 24 scales of KON-2006 were observed (the exception was in both women and men scale 18 – Narcissistic attitude). Mean values of these coefficients were near the average values described in the test's manual [36] for the comparison group – non-treated subjects not reporting symptoms, originating from a non-clinical population – probably in substantial majority without disorders.

Average values of XKON (median and quartiles) before treatment were higher than 18 points (results typical for people suffering from neurotic disorders), after the treatment average value of XKON were closer to typical results for healthy people (less than 8 points) [36].

In a smaller group of 100 patients linkage analysis of changes in KON-2006 with changes in NEO-PI-R (Polish version developed by J. Siuta [47]), was also performed, the results of which are presented in Table 5.

Figure 1. Changes in the KON-2006 questionnaire resulting from intensive psychotherapy in day hospital.

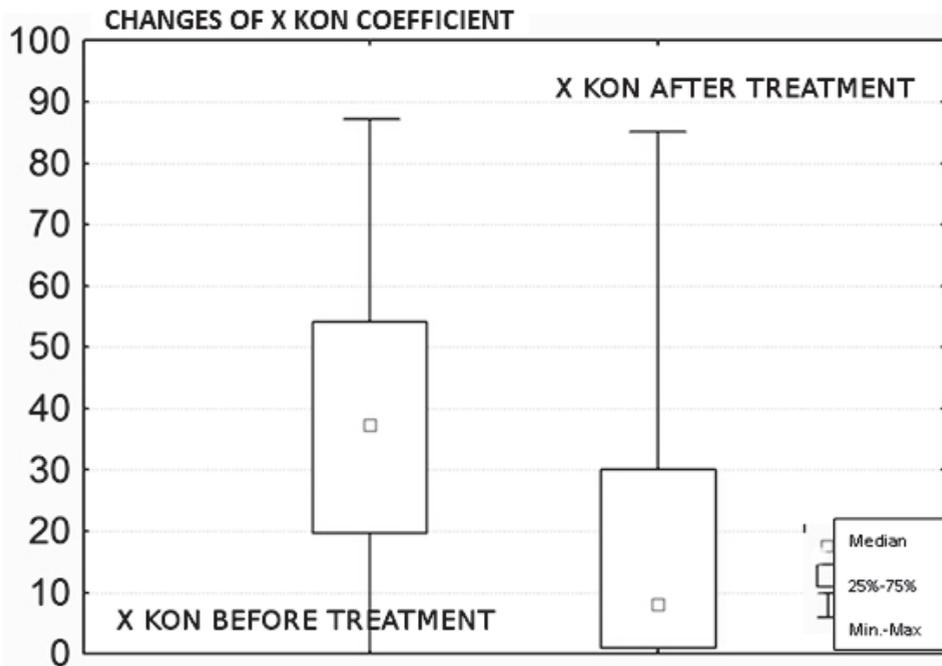


Table 5. Correlations of changes in factors of NEO-PI-R inventory with changes in the values of scales of KON-2006.

	Neuroticism	Extroversion	Openness to experience	Agreeableness	Conscientiousness
1. A sense of being dependent on the environment	0.44***	-0.37***	0.01	0.12	-0.15
2. Asthenia	0.49***	-0.37***	-0.08	-0.03	-0.27*
3. Negative self-esteem	0.40***	-0.45***	-0.03	0.09	-0.29**
4. Impulsiveness	0.52***	-0.31***	-0.15	0.11	-0.28**
5. Difficulties with decision making	0.43***	-0.36***	-0.02	0.13	-0.11
6. Sense of being alienated	0.28**	-0.27*	-0.06	0.02	-0.22*
7. Demobilization	0.58***	-0.49***	-0.04	0.04	-0.31**
8. Risk tendencies	-0.37***	0.27*	-0.02	-0.12	0.12
9. Difficulties in emotional relations	0.29**	-0.28**	-0.09	0.13	-0.14

*table continued on the next page*

10. Lack of vitality	0.58***	-0.49***	-0.07	0.13	-0.19
11. Conviction of own resourcelessness in life	0.56***	-0.42***	-0.12	0.06	-0.30**
12. Feeling of lack of impact	0.36***	-0.34***	-0.05	0.11	-0.21*
13. Deficit in internal locus of control	0.49***	-0.38***	0.00	0.13	-0.28**
14. Imagination, fantasizing	0.37***	-0.32**	0.08	0.05	-0.10
15. Feeling of guilt	0.52***	-0.32**	-0.02	0.20	-0.16
16. Difficulties in interpersonal relationships	0.41***	-0.26*	-0.16	0.06	-0.18
17. Envy	0.45***	-0.38***	-0.21*	0.10	-0.23*
18. Narcissistic attitude	0.24*	-0.12	-0.15	-0.05	-0.19
19. A sense of being in danger	0.36***	-0.38***	-0.13	0.11	-0.25*
20. Exaltation	0.47***	-0.29**	-0.06	0.08	-0.19
21. Irrationality	0.17	-0.06	0.10	0.21*	0.02
22. Meticulousness	0.48***	-0.35***	-0.17	0.04	-0.13
23. Pondering	0.46***	-0.35***	-0.12	0.05	-0.16
24. A sense of being overload	0.23*	-0.15	0.02	0.14	0.02
XKON coefficient	0.48***	-0.47***	-0.10	0.10	-0.28**

The most of the strongest correlation with changes in value of XKON and changes in the values of KON scales were found for changes in Neuroticism (N) and Extroversion (E) factors. There was no such relationship for changes in Irrationality scale (with N and E factors), as well as for the changes in KON Narcissistic attitude and a Sense of being overload scales (with E factor). For Conscientiousness factor (S) a correlation of changes with the change of XKON, as well as with changes of 10 scales were observed. Only one significant, but weak correlation was found for the Openness to experience factors (the reverse – with scale Envy scale) and one for the factor Agreeableness (with Irrationality scale).

## Discussion

Not all types of psychotherapy are aimed to achieve changes in personality – some theoretical approaches are extremely focused on symptoms (e.g., behavioural therapies), other therapies conditions do not include a fairly long period for such a change to take place (e.g., a package of 5, 10 or 15 sessions of cognitive therapy or cognitive-behavioural therapy), and still other do not account for the effects of treatment in these terms – focusing only, for instance – on the family system (systemic therapy) or exclusively on selected parameters, such as changes in the range of defence mechanisms, satisfaction with life of the patient, burden for the health care system

(many different variants of the conditions or theoretical assumptions of therapy) [50-55]). Many of psychotherapies are also conducted without any structured attempts to assess their effects, except for perhaps – not included in any research tool – satisfaction of patients or therapist. Some experts in the field of personality psychology also assume the improbability of obtaining changes in personality at all, or as a result of treatment lasting less than several years [56-57].

Among these therapies, however, that last long enough (months or years), particularly when include multiple sessions (of hundreds of hours of group and/or individual work), verification of results in terms of personality changes is the most possible and desirable. According to the pre-discussed literature, the most frequently used personality tests (mainly MMPI, NEO, TCI) allow us to indicate, after the completion of therapy, positive changes in a significant proportion of patients.

The KON-2006 questionnaire is not an exception – of course, as one may guess, not every psychotherapy leads to an equally favourable changes in each patient. According to the obtained data, most patients obtained at least an improvement in the global coefficient of the neurotic personality disintegration and in the personality test scales, few did not obtain changes, and even fewer encountered deterioration. This analysis does not, however, include data gaps associated with premature resignations from the treatment. Not many of the most beneficial effects of the so-called “recovery” in the scope described by the KON-2006 were observed, but obtaining them can be more time consuming than it is the allowed by 12 weeks of treatment in the day hospital.

The conclusions of this study have some limitations: in the present study we do not have data from other day hospitals, other therapeutic approaches, treatment of similar or of lesser intensity or of a different qualification process before its start. The effectiveness of treatment depends of course on many different factors such as the experience of therapists, the coexistence of other disorders, therapist-patient matching, optimal therapeutic alliance formation, etc. Therefore, it is necessary to conduct further research on the effectiveness of different types of psychotherapy in various day hospitals, verified through various personality tests.

KON-2006 is the only questionnaire created originally in Polish language intended for broad, multifactorial diagnosis of personality disorders responsible for the emergence of neurotic disorders. The questionnaire is obtainable free of charge, a computer version is also available (other questionnaires e.g. NEO-PI-R, NEO-FFI and MMPI-2 lack these advantages). The items of KON-2006 are not questions about symptoms (as opposed to the NEO-PI-R questionnaire). Relatively long time needed to fill out the 243 items questionnaire is still shorter when comparing to significantly longer personality questionnaires (e.g. MMPI-2). Calculation of final results is extremely time efficient (it is completely computerized). The disadvantages of the KON-2006 questionnaire include: limited international recognition and accessibility (Czech and Russian versions are available) and relatively small number of published studies for comparison of the results.

In this research the authors have resigned from implementation of a control group. In the process of diagnosis patients from the waiting list undergo a profound psychological interview and are often confronted with insightful information about

the symptoms. Therefore the population from the waiting list remains under the influence of treating factors often similar to those being in effect in psychotherapy (this statement is supported by numerous observations of changes in symptoms' intensity in the time period between qualification for treatment/diagnosis and actual beginning of therapy). Eventual speculations about a possible tendency to score lower with consecutive measurements performed with the KON-2006 do not find confirmation in the high test-retest stability of the questionnaire described in the manual [36]. Moreover, unpublished observations on results of measurements performed by patients, who repetitively (and unsuccessfully) try to start treatment support the statement, that spontaneous lowering of scores in consecutive measurements in the case of KON-2006 questionnaire is highly improbable.

### Conclusions

1. Neurotic Personality Inventory KON-2006 allows us to estimate changes in the severity of personality disorders accompanying neurotic disorders, occurring under the influence of intensive psychotherapy for day hospital patients.
2. These changes are statistically significant and include both the global coefficient of neurotic personality disintegration, as well as almost all of its component scales. They lead to the approximation of the mean value of the KON-2006 results in patients completing therapy to the results of the group not treated, not reporting neurotic symptoms and probably undisturbed.
3. Categories of results described as varying degrees of improvement or recovery observed in the KON-2006 questionnaire allow us to consider intensive psychotherapy in the day hospital as effective for most patients. The effect size according to Cohen's criteria was large – in the experimental group it ranged from 0.92 to 1.01 (depending on the applied calculation method). There still is, however, a group of patients not obtaining change, and with the results difficult to clearly categorize.
4. The correlations of changes in the results of the questionnaire KON-2006 obtained during therapy with changes in the NEO-PI-R Inventory confirm the utility of KON-2006 as a tool to evaluate the results and illustrate the relationship of aspects of personality described by above mentioned tools with the treatment outcome and facilitate the understanding of the particular KON-2006 scales.

The results were partially presented at conferences: "Neurotic disorders. Therapy, research and teaching" – 30<sup>th</sup> Anniversary of the Department of Psychotherapy, Jagiellonian University Medical College" (10-11 June 2006, Krakow); "Psychotherapy or psychotherapies. For whom?, what kind?, where?" – XI Symposium of the Scientific Section of Psychotherapy PTP (24-26 May 2007, Poznan); Second International Scientific and Training Conference „Modern diagnosis in psychiatry. “Pharmacotherapy and psychotherapy. One goal, two paths”. (11-13 December 2008, Wisla); "Psychotherapy in Poland – present and future".(17-18 October 2008, Warsaw); 40<sup>th</sup> SPR International Annual Meeting (24-27 June 2009, Santiago de Chile); the Conference of 3 Sections "The therapist. The therapeutic relationship" (19-21 October 2012,

Krakow); during XLII, XLIII and XLIV Congress of Polish Psychiatrists and also during International Psychiatric Conference “Neurobiology and Complex Treatment of Psychiatric Disorders and Addiction” (5–7 June 2014, Warsaw).

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