

Changes in defence mechanisms of people suffering from psychotic disorders and receiving therapy in the Day Treatment Centre

Łukasz Cichocki

Summary

Aim. The objective of this investigation was to describe changes in the psychopathological state and defence mechanisms of a group of patients suffering from psychotic disorders and receiving therapy in the Day Treatment Centre.

Subjects and methods: The study group consisted of 55 people suffering from psychotic disorders. Most of them suffered from schizophrenia, some of them from schizophrenia spectrum disorder, bipolar disorder and organic psychotic disorder. In the course of therapy in the Day Treatment Centre, apart from receiving pharmacotherapy and individual care, the patients took part in an intensive psychosocial therapeutic programme. The study was a pre-post design. The first investigation took place two weeks after admission to the Day Treatment Centre and the second in the last week of therapy (the average time of hospitalization was 3 months). The psychopathological state was examined according to the PANSS scale. The defence mechanisms were investigated with the Defence Style Questionnaire 40.

Results. The results of the study show statistically significant changes occurring both in the psychopathological state as well as defensive functioning of the patients during their therapy. Changes in the psychopathological state occurred in all the subscales of the PANSS scale: positive, negative and global, and in the overall evaluation. Statistically significant changes in defence mechanisms were present in the mature factor of defence mechanisms and in two separate immature mechanisms: autistic fantasies and displacement. A change in defence mechanisms did not influence changes that occurred in the psychopathological state. This could mean that Axis I in DSM IV and part of Axis II are at least partly independent.

Conclusions. Defence functioning seems to be a useful construct in understanding changes that take place in the course of therapy. The Defence Style Questionnaire 40 is a practical instrument to measure conscious derivatives of defence mechanisms.

psychotic disorder / defence mechanisms / psychotherapy

INTRODUCTION

The problem of defence mechanisms was studied on numerous occasions. The hitherto analyses fall basically into two categories. The first one deals with differences in defence mechanisms of

people suffering from various mental disorders, frequently referring to the results obtained with control groups of healthy people [1, 2, 3, 4, 5, 6]. The second one focuses on changes that occur in defence mechanisms in the course of therapy of people with various symptoms, e.g. of depressive disorders, obsession-compulsion syndromes, or phobias [7, 8, 9, 10, 11]. Among the latter, one should especially mention the studies by Wode-Helgodt [12] and Januzzi [13] et al. because in essence they resemble the investigation described in the following: they pertain to

Łukasz Cichocki: Community Psychiatry Section, Chair of Psychiatry, Collegium Medicum, Jagiellonian University, Cracow, Poland; Correspondence address: Łukasz Cichocki, Community Psychiatry Section, Chair of Psychiatry, Collegium Medicum, Jagiellonian University, 2 Sikorskiego Pl. Apt. 8, 31-115 Cracow, Poland; E-mail: lci-chocki@poczta.onet.pl

a change in defence mechanisms of people suffering from psychotic disorders. So far, the researchers have also tried to pinpoint the correlation between defence mechanisms and other parameters of mental state, such as psychopathology, duration of illness [14], compliance [9, 15] and social functioning [16].

AIM OF THE STUDY

To assess the psychopathological state and defence mechanisms at the beginning and end of treatment in the Day Treatment Centre.

To assess correlations between the current psychopathological state and the types of defence mechanisms that are used.

To investigate correlations between change in the defence mechanisms and in psychopathology.

SUBJECTS AND METHODS

After about two weeks following their admission to the Centre, the patients were asked to take part in the study. Their psychopathological state was gauged with the PANSS scale and defence mechanisms were assessed on the basis of the DSQ 40 questionnaire, as filled in by the patients. The two weeks' lapse between the admission and answering the questionnaire was allowed for two reasons. First, the intention was not to further traumatize the patients in the initial, difficult stage of treatment. Second, that decision was made so as not to stress the patients, which could adversely affect the reliability of results [17]. The patients were informed what the purpose of the investigation was, that their personal data would not be required, and that they could refuse to take part with no negative consequences. The investigation, with the use of the same method, was carried out again in the last week of the patients' stay in Day Treatment Centre, after 14 weeks on the average.

Description of the study group

The study group included 55 people. The project was completed by 43 of them. The average age in the final group was 28.3: the young-

est person was 18, the oldest 52. There were 24 women and 19 men. Among the 43 patients, 41 were diagnosed with schizophrenia spectrum disorder (F 20-F 25), including 28 patients diagnosed with schizophrenia. Two patients were still awaiting for their diagnosis; eventually they were diagnosed with organic psychotic disorder and manic-depressive psychosis. The majority of patients (25) had been in therapy for a short time: up to two years. The longest period of treatment was 18 years. The number of hospitalizations ranged between 0 and 9. The most patients (18) had been hospitalized once, 9 – twice, 4 had never been hospitalized before. 34 of the patients were single, 7 were married, 2 – divorced. 31 patients lived with their generative family, 5 on their own, 7 with their procreative family. 2 patients had primary education, 5 – vocational education, 23 – secondary education, 6 did not complete their university studies and 7 had university education. 31 patients in the study group were unemployed, 3 worked part-time and 9 worked full-time. The average time of treatment in the Day Treatment Centre was three months. As to the demographic data, those who did not participate in the project until the end (n=12) were not statistically different from the patients who completed it.

Research tools and method

To assess the intensity of psychopathological symptoms, the Positive and Negative Syndrome Scale for Schizophrenia, PANSS, was used (authored by S.R. Kay, A. Fiszbein, L.A. Opler, translated by M. Rzewuska). To investigate the defence mechanisms, the Defence Style Questionnaire 40, DSQ 40, was applied. Among the methods that are used to investigate defence mechanisms and are available in Poland – i.e. the Life Style Index by Plutchik, the Defence Mechanism Inventory by Ihilevich and Gleser, and the Defence Style Questionnaire 40 by Michel Bond et al. – the DSQ 40 seems to be based on the most coherent theoretical grounds, is practical to use, does not overburden the patient and has the most citations in specialist literature. The Questionnaire contains 40 items that describe 20 defence mechanisms. The investigated defence mechanisms are categorized in the Question-

naire into the three above mentioned defense styles: mature, neurotic and immature. The mature style embraces four defense mechanisms: sublimation, humour, anticipation and suppression. The neurotic style includes undoing, pseudo-altruism, idealization and reaction formation. The immature style comprises the highest number of defense mechanisms (12): projection, passive aggression, acting out, isolation, devaluation, schizoid fantasy, denial, displacement, dissociation, splitting, rationalization, somatization.

The statistical analysis of the material, due to the distribution of variables, was based on non-parametric tests. The correlations were analysed with the use of Spearman's rank correlation coefficient. Comparisons between identified subgroups were based on the Mann-Whitney U test. The changes that occurred during therapy in particular subgroups were gauged with the Wilcoxon test. The value of $p \leq 0.05$ was assumed as statistically significant. The statistical analysis was carried out with the program SPSS 11.0.

RESULTS

Psychopathological state. During therapy in the Day Treatment Centre, a statistically significant improvement was observed in the psychopathological state. This concerned positive, negative, general symptoms and the total measurement on the PANSS scale. The figures are presented in Table 1.

Table 1. Changes in psychopathological status during treatment in Day Treatment Ward according to PANSS.

PANSS	Mean value (admission)	Mean value (release)	p
Positive	13	10	.001
Negative	16	13	.009
Global	33	27	.000
Total	62	51	.000

Differences between results measured with Wilcoxon test

Defence mechanisms. During therapy in the Day Treatment Centre, a statistically significant improvement was observed in mature defence mechanisms. There was a change in the mature

factor, while no statistically significant change was manifest as to particular mechanisms. Moreover, a statistically significant change was seen in two defence mechanisms: schizoid fantasy and displacement, which are listed among immature defences. During therapy, the use of these mechanisms was reduced. Changes as to other defence mechanisms and the DSQ 40 factors were of no statistical significance. The findings are shown in Table 2.

Table 2. Changes in defense mechanisms during treatment in Day Treatment Ward according to DSQ 40.

DSQ 40	Mean value (admission)	Mean value (release)	p
Mature factor	5.09	5.40	.027
Neurotic factor	4.32	4.38	n.s.
Immature factor	4.23	4.13	n.s.
Autistic phantasies	9.60	7.92	.008
Displacement	8.95	7.72	.049

Differences between results measured with Wilcoxon test

Psychopathological state and defence mechanisms. As postulated by Kay [18], the participants were then divided into two groups: those with predominantly positive symptoms ($n=15$) in the initial stage of the investigation and those with predominantly negative symptoms ($n=28$). To form such smaller groups, the result on the negative scale was subtracted from the result on the positive scale. An attempt was made to capture the differences between the sub-groups. As to demographic factors, duration of treatment and the number of previous hospitalizations, no differences were discovered between them.

Table 3. Differences in defence mechanisms between patients with predominance of negative symptoms and predominance of positive symptoms at admission.

DSQ 40 ADMISSION	Predominance of negative symptoms N = 25 Mean rank	Predominance of positive symptoms N = 15 Mean rank	p
Mature factor	19.58	22.03	n.s.
Neurotic factor	20.50	20.50	n.s.
Immature factor	21.98	18.03	n.s.
Passiv aggression	25.10	12.83	.001
Rationalization	16.04	27.93	.002

Differences between results measured with Mann-Whitney test

As regards defence mechanisms, the sub-groups proved different. At the beginning of the investigation, those patients who had more intense positive symptoms, used rationalization statistically more frequently; those with negative symptoms – used passive aggression (Tab. 3).

In the final stage, the patients with predominant positive symptoms used dissociation more often, while those with negative symptoms – devaluation (Tab. 4). Next, a correlation was sought between change in the psychopathological state and change in the defence mechanisms. The obtained results show that there exists no correlation between them (Tab. 5).

Table 4. Differences in defence mechanisms between patients with predominance of negative symptoms and predominance of positive symptoms by release.

RELEASE DSQ 40	Predominance of negative symptoms N = 28 Mean rank	Predominance of positive symptoms N = 15 Mean rank	P
Mature factor	22.38	21.30	n.s.
Neurotic factor	20.96	23.93	n.s.
Immature factor	22.36	21.33	n.s.
Devaluation	25.07	16.27	.027
Dissociation	18.98	27.63	.031

Differences between results measured with Mann-Whitney test

Table 5. Correlation between changes in results of DSQ 40 and changes in results of PANSS.

DSQ40 PANSS	Mature mechanisms – change	Neurotic mechanisms – change	Immature mechanism – change
Positive syndrome – change	-.03	.15	-.09
Negative syndrome – change	-.07	.12	-.19
Global syndrome – change	.04	.04	-.06

Correlation measured with Spearman's coefficient

DISCUSSION

In reference to findings of research on defence mechanisms, one has to state that among the available specialist studies there are none that

investigate changes in defence mechanisms of patients diagnosed with schizophrenia or schizophrenia-spectrum disorders with the DSQ 40, which was used in this study. Due to that fact, the most crucial finding of this study, i.e. improvement of mature defence mechanisms, has to be viewed against the following data:

1. findings of research on changes in defence mechanisms of psychotic patients who were examined with the use of other tools;
2. findings of research on changes in defence mechanisms of patients who were diagnosed with other disorders and examined with the use of the questionnaires DSQ or DSQ 40;
3. various theoretical constructs.

Previous research concerning changes in defence mechanisms of psychotic patients was carried out by Wode-Helgodt and Januzzi. Wode-Helgodt et al. [12] compared the efficiency of two forms of therapy offered to schizophrenia-diagnosed patients: (i) standard therapy with 15-minute medical appointments every month up to every three months, accompanied by pharmacotherapy and; (ii) psychoanalysis-based group psychotherapy of 90-minute weekly sessions, accompanied by pharmacotherapy. The changes were measured in a variety of ways, e.g. using the Rorschach test and the Katz adaptation scale (KAS), and the defence mechanisms were assessed with the Defence Mechanism Test. After two years of providing either kind of therapy, no statistically significant differences were observed in the two groups of patients as to their defence mechanisms, social functioning, or Rorschach test results. For such findings, two possible explanations can be given.

In my opinion, one can first come forward with an explanation that two years of psychoanalytical therapy is not an option deliberately selected by the schizophrenia-diagnosed patients; moreover, not all schizophrenia-diagnosed persons can benefit from such therapy (in this particular study, there were no more medical indications for the psychotherapy-treated group than for the control group). The second explanation is connected with the Defence Mechanism Test. This measuring tool raises much doubt on methodological grounds. In Jonsson's research [19] this test proved inadequate to demonstrate differences in defence mechanisms applied by a group

of people suffering from schizophrenia and a control group of healthy people. The research done by Zuber and Ekehammar [20] shows that the test does not fulfil the requirements formulated for tools measuring defence mechanisms in the psychodynamic aspect. In their view, it rather measures disturbances in the perception of figures represented on the cards that are displayed before the subject, and these disturbances depend on the duration of display and the position of the figures on the cards.

Another project pertaining to the measurement of change in defence mechanisms during therapy was conducted by Januzzi et al. [13]. The study group consisted of 20 men and was diagnostically heterogeneous (schizophrenia, bipolar affective disorder, personality disorder). Having externally assessed defence mechanisms with the DMRS scale, the researchers observed that in the course of therapy there occurred improvement in some mechanisms: intellectualization, isolation, undoing, categorized as mature in this scale – also in the case of patients who were not schizophrenia-spectrum diagnosed. No special therapeutic methods were employed as the study group were inpatients receiving pharmacotherapy. The small size of the study group (n=20), its mono-sexuality and diagnostic heterogeneity are all reasons why these research findings have to be viewed with caution.

A survey of other research on change in defence mechanisms caused by therapy provided to different groups of patients shows that the obtained results vary to a great extent. An overview of such research was compiled by Bond [21].

The results obtained in this investigation point to similar benefits as in the case of patients from other diagnostic groups, e.g. in Akkerman's study [8] of patients with depressive disorder and in Albuher's study [11] of patients with obsessive-compulsive disorder. Both authors report improvement in mature defence mechanisms.

In all the theories of defence mechanisms, changes in mature defence mechanisms amounting to their more frequent occurrence are perceived as beneficial. E.H. Erikson writes that when the ego's methods of synthesis create defence mechanisms which are efficient against unwanted impulses and affects, they give back to what we term, the sense of the self, some fun-

damental functions of existence (...), namely the sense of being centred and active, whole and conscious, thus overcoming the feeling that one exists without any core, is passive, fragmented and non-defined [22].

In this context it is hard to explain the result that is related to the previous one: that improvement in defence mechanisms is not correlated with improvement in psychopathological state. One of the causes could be that improvement in psychopathology may have been affected by other factors, independent from defence mechanisms, such as pharmacotherapy or structured time during therapy. Perhaps the relation between defence mechanisms and psychopathological state could be revealed in the study group only in a longer term, as in the study by Bond and Perry [9]. That there is such a possibility is indicated by longitudinal prospective studies where the impact of personality factors on the treatment outcomes is accentuated [23].

Looking at the correlations between psychopathological state and defence mechanisms in the study group, one should note the differences between the patients with predominant positive or negative symptoms. The patients with predominantly positive symptoms used rationalization more frequently in the initial phase of the investigation, and dissociation in the final phase, while those with predominantly negative symptoms, in the respective stages, used more often passive aggression and devaluation, which seems plausible and consistent with the theory. The findings in this area may be also related to Schueler's study [14]. Schueler, although he divided his group in a different manner (into the acute and chronically ill) and used a different tool (DMI), demonstrated correlations that are similar to a degree. The acutely ill more often used projection and turned against themselves; the chronically ill resorted among others, to denial.

CONCLUSIONS

1. Psychopathological state and defence mechanisms of the examined patients underwent positive changes during therapy.
2. Correlations were found between the predominance of positive or negative symptoms

- and the type of defence mechanisms used by the patients. Those with predominantly positive symptoms used rationalization more frequently in the initial phase of the investigation, and dissociation in the final phase, while those with predominantly negative symptoms, more often used passive aggression and devaluation in the respective stages.
3. No correlation was found between changes in the psychopathological state and change in defence mechanisms.

REFERENCES

- Bond MP, Gardner ST, Christian J, Sigal JJ. Empirical study of self-rated defense styles. *Arch Gen Psychiatry*. 1983; 40: 333–338.
- Jakubik A, Kuźma A, Moczulska E, Roszkowska J. Mechanizmy obronne w schizofrenii paranoidalnej. *Psychiatria Polska*. 1991; 6: 1–6.
- Bond MP, Vaillant JS. An empirical study of the relationship between diagnosis and defense style. *Arch Gen Psychiatry* 1986; 43: 285–288.
- Sundborn E, Kullgren G. Multivariate modeling and the Defense Mechanism Test: a comparative study of defensive structure in borderline, other personality disorders and schizophrenic disorder. *Acta Psychiatr Scand*. 1992; 86(5): 379–385.
- Leichsenring F. Primitive defense mechanisms in schizophrenics and borderline patients. *J Nerv Ment Dis*. 1999; 187(4): 229–236.
- Gothelf D, Apter A, Ratzoni G, Orbach I, Weizman R, Tyano S, Pfeffer C. Defense Mechanisms in Severe Adolescent Anorexia Nervosa. *J Am Acad Child Adolesc Psychiatry* 1995; 34(12): 1648–1654.
- Hoglund P, Perry JC. Defensive functioning predicts improvement in major depressive disorder. *J Nerv Ment Dis*. 1998; 186(4): 238–243.
- Akkerman K, Carr V, Lewin T. Changes in ego defenses with recovery from depression. *J Nerv Ment Dis*. 1992; 180: 634–638.
- Bond M, Perry JC. Long-term changes in defense styles with psychodynamic psychotherapy for depressive, anxiety and personality disorders. *Am J Psychiatry* 2004; 161(9): 1665–1671.
- Muris P, Merckelbach H. Defense style and behavior therapy outcome in specific phobia. *Psychol. Med*. 1996; 26 (3): 635–639.
- Albucher RC, Abelson JL, Nesse RM. Defense mechanism changes in successfully treated patients with obsessive-compulsive disorders. *Am J Psychiatry* 1998; 155: 558–559.
- Wode-Helgodt B, Berg G, Petterson U, Rydelius PA, Trollehed H. Group therapy with schizophrenic patients in outpatient department. *Acta Psychiatr Scand*. 1988; 78(3): 304–313.
- Januzzi G, Verga M, Piasentin V, Azzone P, Vignano D, Freni S. The psychodynamic impact of psychopharmacological treatment: Change in defense organization. *New Trends in Experimental and Clinical Psychiatry* 1997; 13(4): 267–270.
- Schueler DE, Herron WG, Poland HV, Schultz CL. Defense mechanisms in reactive and process schizophrenics. *J Clin Psychol*. 1982; 38 (3): 486–489.
- Hersoug AG, Sexton HC, Hoglund P. Contribution of defensive functioning to the quality of working alliance and psychotherapy outcome. *Am J Psychother*. 2002; 56(4):539–54.
- Erikson S, Feldman SS, Steiner H. Defense reactions and coping strategies in normal adolescents. *Child Psychiatry Hum Dev*. 1997; 28(1):45–56.
- Perry JC, Hoglund P. Convergent and discriminant validity of overall defensive functioning. *J Nerv Ment Dis*. 1998; 186(9): 529–535.
- Kay SR, Fiszbein A, Opler LA. The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin*. 1987; 13(2): 261–76.
- Jonsson SA. The Wechsler Adult Intelligence Scale (WAIS), but not the Defense Mechanism Test (DMT), separates schizophrenics and normal controls in a factorial cluster analysis. *Scand J Psychol*. 1998; 39(2):109–116.
- Zuber I, Ekehammar B. An empirical look at the Defense Mechanism Test (DMT) Stimulus effects. *Scand J Psychol*. 1997; 38(2): 85–94.
- Bond M. Empirical studies of defense style: relationship with psychopathology and change. *Harv Rev Psychiatry* 2004;12: 263–278.
- Erikson EH. *Dopełniony cykl życia*. [The Life Cycle Completed] Poznań: Dom Wydawniczy Rebis; 2002.
- Cechnicki A. Analiza wpływu wybranych czynników na wyniki leczenia w obszarze społecznym. Krakowskie prospektywne badania przebiegu schizofrenii. *Badania nad schizofrenią* 1998; 1:37–48.