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Personality functioning of outpatients with schizophrenia treated with classic neuroleptics and risperidone

Konstantinos Tsirigotis [1], Wojciech Gruszczyński[2]

[1] Department of Psychology, Świętokrzyski University, Faculty in Piotrków Trybunalski, Poland
[2] Psychiatric and Crisis Intervention Clinic, University of Medical Sciences, Łódź, Poland

Summary

The purpose of this study is to compare the personality functioning of outpatients with paranoid schizophrenia treated with risperidone and those treated with classic neuroleptic drugs. 30 outpatients (14 females and 16 males) with paranoid schizophrenia treated with risperidone and 30 matched treated with classic neuroleptics have been surveyed by applying the Polish version of the Minnesota Multiphasic Personality Inventory (MMPI) for assessing the intensity of psychopathological symptoms, personality traits and personality functioning.

It was found that those afflicted with paranoid schizophrenia and treated with risperidone display greater intensity of personality traits which are conducive to good psychological, personality and social adjustment in comparison to those treated with classic phenotiazine neuroleptics where greater intensity for maladjustment has been demonstrated regarding psychological, personal and social criterion.

Key words: paranoid schizophrenia, personality functioning, risperidone, classic neuroleptics.

Motto: ... *Regardless of the extent of psychopathology in evidence, there is always an intact portion of the ego to which treatment and rehabilitation efforts can be directed.*
H.R. Lamb [1]

Introduction

The Minnesota Multiphasic Personality Inventory (MMPI) is one of the most widely used diagnostic tools in psychology, which has application in a wide variety of disorders: psychosomatic, psychotic, neurotic, personality disorders, etc. Its use is also varied: clinical psychology, psychiatry, sexology, judicial, consulting, general hospitals, and so on. Further proof of its popularity is the fact that it was translated and adapted for many languages and countries: Arabic, Chinese, Czech, French, Greek, Spanish, Japanese, Korean, German, Norwegian, Polish, Russian, Italian, etc. [2, 3, 4, 5, 6]. One of its difficulties is time consumption as MMPI has a great number of items

(over 500). Efforts to overcome this burden have resulted in shortened and specialised versions e.g. MMPI-168 or MMPI-TRI [7, 8 9, 10]. The far-reaching usefulness of MMPI, characterised through high reliability and validity of its scales, has produced versions for youth [11], effectiveness of therapy techniques [12] and has even produced a verbal version [MMPI-168(L)] for the mentally retarded [13].

The above indicate that the MMPI is not only a tool for differential diagnostics in psychiatric nosology, but also in assessing individual psychological functioning and is why it is applied in this paper.

Risperidone is one of the second generation antipsychotic drugs used in the treatment of schizophrenia. There are many sources confirming its effectiveness in eliminating psychotic symptoms without objectionable side-effects. Current research regarding its effectiveness have, for the most part, concentrated on the cognitive functioning by using the National Adult Reading Test-NART, Wide Range Achievement Test-WRAT, Letter-Number Span Test-L-NST, Dot Test-DT, California Wisconsin Card Sorting Test-CWCST, ect. [14, 15, 16, 16, 17, 18, 19, 20, 21, 22, 23] and the psychopathologic symptoms by using e.g. Brief Psychiatric Rating Scale-BPRS, Scale for Assessing Negative Symptoms-SANS, Positive and Negative Syndrome Scale-PANSS ect. [24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40].

Research has yet to adequately focus on personality and psychological functioning assessment in schizophrenics; much the same in other psychotic diagnoses. There is agreement in that health and “well-being” does not singly depend on disappearance of unwanted disease symptoms. Psychological, social and physical well functioning is important as well; in the area of mental health, the self-actualisation capability is concerned as a canon. On the other hand in the area of psychological functioning (besides the cognitive functions), there is also motivation, emotions, needs and values which never the less determine not only the not disturbed but also the effective, creative, and constructive functioning of the individual.

Aim

The purpose of this study is to compare the personality functioning of outpatients with paranoid schizophrenia treated with risperidone and those treated with classic neuroleptic drugs. It is our contention that those outpatients treated with risperidone indicate better psychological (interpersonal and intra-personal) and social adjustment.

Characteristics of study groups

Study Group (R) consisted of 30 people suffering paranoid schizophrenia treated on an out-patient basis with risperidone in dosages ranging from 4 to 8 mg ($\bar{x}$=4.5 SD=1.2) over a period of 6 to 24 months ($\bar{x}$=18 SD=2).

The comparison Group (N) consisted of 30 people suffering paranoid schizophrenia treated on an out-patients basis with classic neuroleptic drugs (chlorpromazine-fenactil; levomepromazine-tisercin; fluphenazine-mirenil; perazine-pernazinum;

perphenazine-trilafon; trifluoperazine-stelazine; chlorprothixen-haloperidol). They were dosed at 100 to 300 mg ($\bar{x}$=200 SD=50) of phenotiazines, converted to fenactil doses as indicated.

The characteristics of both groups are presented in Table 1. Both groups had equal distribution of sex, age, education as well as intensity of psychopathological symptoms, according to the Clinical Global Impression Scale (CGI for Group N: 3.45 ± 0.51; for group R: 3.60 ± 0.50). The Study was carried out when the disease was in the remission phase with maintenance drug therapy applied. All prospective outpatients agreed to participate after they were informed of the Study's profile and goal.

Table 1

Characteristics of participating groups

VARIABLE		RISPERIDONE		NEUROLEPTICS	
		n	%	n	%
Sex	Female	14	46.7	14	46.7
	Male	16	53.3	16	53.3
Age	x±SD	35.5±10.6		34.6±10.5	
	Range	20-65		20-65	
Disease Duration	x±SD	9.5±7.5		9.2±6.4	
	Range	1-25		1-24	
Number of hospitalizations	x±SD	4±2		3±2	
	Range	1-14		1-11	
Educational Level	Elementary	3	10	2	6.7
	Trade	6	20	7	23.3
	Secondary	15	50	17	56.7
	University	6	20	4	13.3
Marital status	Single	19	63.3	17	56.7
	Married	11	36.7	13	40
Residency	Urban	27	90	26	86.7
	Rural	3	10	4	13.3
Disorders intens.	Clin.Glob.Impr.	3.60±0.50		3.45±0.51	

Study Methodology

The Polish version of the Minnesota Multiphasic Personality Inventory (MMPI) was used for assessing the intensity of psychopathological symptoms, personality traits and personality functioning. One can gain after one survey, results of the most important personality dimensions as well as the psychopathology symptoms; besides it assesses the degree of similarity of the examined person's traits to the traits characteristic for the given disease. Initially the tool assessed traits categorised according to 4 validity scales and 9 clinical scales. Validity scales are: 1) Cannot Say, (?); 2) Lie, "L"; 3) "F"; 4) "K". Besides the scales configuration in reference to itself, the calculated differences were arrived at according to the F and K Scales rough scores (Gough Index-tendencies to aggravation, simulation, sursimulation or dissimulation), which additionally offers and an index of insight and mental health. Goldberg's Indexes allow for differentiation of normal and deviation profiles (Gldb 1); among the deviation profiles, the indica-

tor to differentiate between psychopathic and psychiatric patients profiles (Gldb 2); among psychiatric profiles, between neurotic and psychotic profile (Gldb 3). The Clinical Scales used were: 1) Hypochondriasis (Hd); 2) Depression (D); 3) Hysteria (Hy); 4) Psychopathic Deviate (PD); 5) Masculinity-Femininity (MF); 6) Paranoia (Pa) introduced to rate clinical paranoid syndrome and leads to diagnoses of schizophrenia or paranoid condition; 7) Psychasthenia (Pt); 8) Schizophrenia (Sc) assesses the similarity of the subject to patient with schizophrenia. Simultaneously elevated Sc and Pa scales are known in paranoid schizophrenia. Other valuable diagnostic index is the so-called "paranoid dip" occurring when Pa and Sc scales are higher than Pt (Pa>Pt<Sc). 9) Hypomania (Ma); 0) Social Introversion (Si). Additional indexes and indicators developed during the evolution of MMPI and are defined as supplementary scales and subscales of clinical scales. The supplementary scales are: 01) Repression (R); 02) Repression-Sensitisation (R-S); 03) Control of Psychopathology (Cn); 04) Alcoholism and addictions (Mac); 05) Social Responsibility (Re); 06) Social Status (St); 07) Anxiety (A); 08) Manifest Anxiety Scale (MAS); 09) Ego Strength (ES).

Among the subscales of clinical scales of Harris and Lingoes, the elements of Pa and Sc have significance: Pa1: persecutory ideas; Pa2: poignancy; Pa3: naiveté; Sc1a: social alienation; Sc1b: emotional alienation; Sc2a: lack of Ego Mastery, Cognitive; Sc2b: lack of Ego Mastery, Conative; Sc2c: lack of Ego Mastery, Defective Inhibition; Sc3: bizarre sensory experiences.

The scores of the several scales form the personality profile, which allows orientation within the scales configuration; a numeral entry on the profile is the code, first generated by Hathaway and Welsh and developed further by others later. Regarding the aim of this paper, certain other indicators were taken into account; diagnostic and classifying, which not only assess the intensity of psychopathological symptoms but also certain characteristics of intra-psychology and inter-personal functioning [41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52].

Statistical analysis of data gained

Statistical analysis was applied to the gained data using the earlier described tool with statistics such as average, standard deviation, and hypothesis testing. As an outcome of the fact that the distribution of the most of the variables in the study is normal, a parametric test was applied for testing the statistical hypothesis (t-test). Where the distribution of the variable was not normal, non-parametric statistics were applied (*Mann-Whitney's U Test*, in tables shown in *italics*). Initial statistical work-up i.e. gathered by the persons surveyed, were made with the assistance of computer software Statistica PL 5.1 for Windows [53].

Study Results

The Study results with the use of MMPI are presented in Table and Chart 1. The table shows the scores in all validity and clinical scales. Regarding the remaining scales, subscales and indexes, because of their great number only those which have a statistically significant difference will be presented. *Italics* indicate the variable as in

the case of the non-parametric *Mann-Whitney's U Test*.

Regarding the validity, scales reached a statistically significant difference in the F scale which correlates with the depth of psychopathology. Those who were treated with risperidone (group R), had significantly lower scores than those treated with classic neuroleptics (group N).

The value of the Gough index in group R ranges within the scores for mentally healthy people; the same applies to the resultant curve from validity scales L, F and K i.e. the letter V (Chart 1) which again, is seen among mentally healthy people.

People treated with risperidone attained significantly lower value in Goldberg's 3rd index, in the Profile Deviation (SI) as well as lower average value in the clinical scales.

They also rated significantly lower on the Paranoia and Schizophrenia clinical scales, which assess paranoid and schizophrenic symptoms.

As far as supplementary scales are concerned, persons in group R had significantly lower scores in the Mac scale indicating a tendency to abuse psychoactive substances, including drugs. Scores reached on the Manifest Anxiety Scale (MAS), Social Status (St) scale indicating motivation towards achievements, ambition and aspiration for success as well as the Ego Strength (ES) scale indicating psychological resources are significantly higher.

Within the Wiggins scales, those treated with risperidone had significantly lower results in the DEP (Depression) scale, the ORG scale dealing with organic symptoms, the FEM scale assessing typical female interests, the REL scale dealing with tendency to religious fundamentalism, the PHO scale rating anxiety and phobias, the HOST dealing with hostility and the PSY scale assessing psychotic symptoms.

Among the clinical scales sub-scales, the risperidone treated group also had significantly lower scores in D3 and Hy4 rating somatic complaints, in D5 dealing with brooding, in Hy5 rating inhibition of aggression, in MF2 dealing with stereotypic feminine interests, Pd1 dealing with familial discord, in Pa1 assessing persecutory ideas, Pa2 dealing with poignancy, Pd4a and Sc1a assessing social alienation, in Sc3 assessing bizarre sensory experiences and SI2 rating discomfort with others.

In the case of Diamond's indexes, those treated with risperidone gained significantly higher results in Social Submissiveness regarding responsiveness to social influence yet attained lower scores regarding Intellectualisation of Desires, associated with the ability to differentiate reality from fantasy, as well as lower results concerning Hostility.

Among Leary's Interpersonal Indexes, individuals in group 'R' has significantly lower scores concerning Aggressive-Sadistic style of interpersonal functioning associated with anger, hostility and domination in human relationships.

In the case of Pancheri's indexes, risperidone treated outpatients had significantly higher finding in the Adaptability Ability index associated with psychological resources, as well as higher findings in Defence related to effectiveness of individual defence mechanisms.

As regards other indexes, outpatients in 'R' group have significantly lower scores in Al (Alcoholism), EM (Emotional Immaturity), GM (General Maladjustment), HC (Hostility Control); HV (Hostility Visibility); IN (Internal Non-Adaptation); AxS

Table 2

Average scores (±SD) comparison in MMPI scales and indexes of outpatients treated with classic neuroleptics and risperidone

SCALES or INDEXES of MMPI	NEUROL		RESPIRID		SIGNIFICANCE	
	x	SD	x	SD	t or U	p
VALIDITY SCALES (and INDEXES)						
L (Lie)	57.95	13.07	57.90	14.18	193.00	n.s.
F	60.53	12.93	52.63	12.58	2.39	0.01
K	52.10	12.97	55.70	9.71	-0.71	n.s.
Gough Index	8.53	11.27	1.43	10.30	2.54	0.01
Goldberg 3	64.75	15.54	51.75	22.24	2.14	0.03
Average of profile clinical scales	59.80	5.09	54.83	5.65	2.30	0.02
CLINICAL SCALES						
Hs (Hypochondriasis)	63.75	14.09	57.30	11.19	144.00	n.s.
D (Depression)	62.90	12.20	62.20	11.76	0.22	n.s.
Hy (Hysteria)	61.77	13.84	57.97	14.05	1.06	n.s.
PD (Psychopathic Deviate)	60.10	10.43	55.30	12.09	1.64	n.s.
MF (Masculinity-Femininity)	51.80	11.24	49.10	11.05	0.93	n.s.
Pa (Paranoia)	67.15	9.43	53.60	11.79	80.00	0.001
Pt (Psychasthenia)	60.65	10.19	56.25	11.15	158.50	n.s.
Sc (Schizophrenia)	62.67	10.76	56.67	10.23	2.21	0.03
Ma (Hypomania)	52.77	9.81	49.17	11.80	1.28	n.s.
SI (Social Introversion)	54.47	10.48	53.93	8.89	0.21	n.s.
SUPPLEMENTARY SCALES						
MAS (Manifest Anxiety Scale)	56.43	10.09	51.13	10.11	2.03	0.04
ES (Ego Strength)	36.03	11.43	44.90	11.87	-2.78	0.007
St (Social Status)	40.17	10.42	46.97	11.46	-2.40	0.01
Mac (Alcoholism and addictions)	56.35	9.25	49.00	11.17	2.27	0.02
WIGGINS CONTENT SCALES						
DEP (Depression)	58.33	10.17	52.63	10.80	2.10	0.03
ORG (Organic Symptoms)	60.33	12.84	52.90	11.02	2.40	0.01
FEM (Feminine Interests)	59.30	8.29	52.03	10.57	2.96	0.004
REL (Religious Fundamentalism)	55.30	8.87	48.10	8.86	100.50	0.007
HOS (Hostility)	49.33	11.04	43.03	12.48	2.07	0.04
PHO (Phobias)	62.10	10.46	52.43	11.35	3.42	0.001
PSY (Psychoticism)	60.20	13.66	52.33	12.96	2.28	0.02

CLINICAL SCALES SUBSCALES						
D3 (Physical Malfunctioning)	65.20	8.79	57.23	12.34	2.87	0.005
D5 (Brooding)	56.40	10.41	50.73	11.70	1.98	0.05
Hy4 (Somatic Complaints)	59.66	11.64	51.70	11.08	179.50	0.05
Hy5 (Inhibition of Aggression)	50.20	10.99	56.90	11.07	2.35	0.02
Pd1 (Familial Discord)	56.33	9.49	50.20	10.90	2.32	0.02
Pd4a (Social Alienation)	59.83	11.53	52.77	12.34	2.29	0.02
MF2 (Stereotypic Feminine Interests)	56.63	15.05	47.23	10.74	2.78	0.007
Pa1 (Persecutory Ideas)	63.70	11.98	54.30	15.75	110.50	0.01
Pa2 (Poignancy)	59.90	6.86	52.00	10.39	3.47	0.0009
Sc1A (Social Alienation)	59.67	11.23	53.43	10.69	2.20	0.03
Sc3 (Bizarre Sensory Experiences)	59.70	12.53	51.83	10.95	2.58	0.01
SI2 (Discomfort with Others)	58.70	11.42	51.73	10.92	2.41	0.01
DIAMOND INDICES						
Social Submissiveness	46.07	8.49	51.83	12.56	-2.08	12.56
Intellectualization of Desires	66.87	10.34	58.10	11.81	3.05	0.003
Hostility	63.60	8.84	56.50	10.90	2.76	0.007
LEARY'S INTERPERSONAL FUNCTIONING STYLES						
Aggressive-Sadistic	60.00	9.64	53.73	11.18	2.32	0.02
PANCHERI'S INDICES						
Adaptability Ability	45.73	8.41	51.83	12.56	-2.20	0.03
Defence	47.75	9.87	55.95	14.05	173.50	0.03
OTHER INDICES						
AL (Alcoholism)	57.13	10.84	50.67	10.76	2.31	0.02
EM (Emotional Immaturity)	59.00	10.42	53.13	11.90	2.03	0.04
GM (General Maladjustment)	63.53	10.09	57.67	12.35	2.01	0.04
HC (Hostility Control)	58.03	10.33	51.10	11.74	2.42	0.01
HV (Hostility Visibility)	55.13	11.51	48.13	13.86	2.12	0.03
IN (Internal Non-adaptation)	59.30	11.48	52.47	11.02	2.35	0.02
PAI (Passive Hostility)	36.17	8.51	44.87	12.86	-3.08	0.03
AxS (Anxiety)	59.60	9.12	51.20	13.95	2.25	0.03
PS (Psychoticism)	65.60	10.07	59.00	11.32	2.38	0.02
SI (Profile Deviation)	65.90	16.87	55.90	15.09	1.99	0.05

(Anxiety), PS (Psychoticism) and, SI (Profile Deviation). They, however, had higher scores in PAI (Passive Hostility) [41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52].

Discussion of results

As has been mentioned, there is little material in international publications regard-

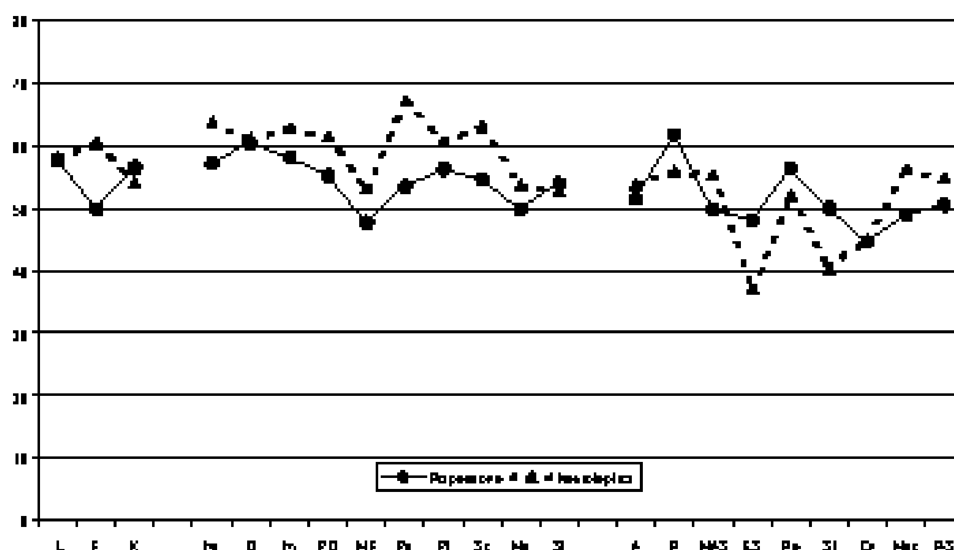

Chart 1: **Personality profile in MMPI of outpatients with paranoid schizophrenia treated with classic neuroleptics and risperidone**

ing studies of personality and psychological functioning of individuals afflicted with schizophrenia treated with risperidone. This is significant because presently it is felt that help or psychological counselling and rehabilitation should be adjusted to the individual needs and psychological resources of the patient i.e. values, experience, feelings and goals of the patient should shape the application of therapy in all phases of treatment-rehabilitation intervention. Furthermore, unless the patient's life goals and personal skills are taken into account, along with deficits, treatment and therapy will not be successful [29].

We will restrict ourselves to the most important, or most relevant in our opinion, scales, sub-scales and indexes of the MMPI survey because of their great number. Based on previously established and presented studies, we can speculate that those who are treated with traditional neuroleptic drugs (Group 'N') have greater intensification of psychological and personality problems than those treated with risperidone (Group 'R').

Goldberg's 3rd Index within MMPI and higher averages within the clinical scales indicate greater psychopathology within group 'N'.

The above results in validity scales and indexes, indicate that there is lesser intensity of psychotic pathology in group 'R'. In addition, symptoms of schizophrenia occur with less intensity in group 'R' (Pa, Sc); and the same scores indicate that individuals of this group have more trust, friendliness, openness and introspection. Characteristic of the MMPI profile of those afflicted with paranoid-schizophrenia is the so-called 'paranoid dip' charted in the shape of a 'V' (Pa>Pt<Sc) and it is clearly evident in group 'N'. In group 'R' however, it is almost reversed (Chart 1) which obviously indicates lower intensity of psychotic symptoms; in both Pa and Sc scales. The numerical form

of the profile is a code which presents itself as follows for both groups:

From the codes and Chart 1 it can be observed that, for group ‘N’, of the highest scales, Pa and Sc are first, whereas in group ‘R’ they’re lower and shifted farther

Neuroleptics	RISPERIDONE
6 1 8 3 4 2 7 - 9 5 0 F-LK/ Pa Hs Sc Hy Pd D Pt - Ma Mf Si	2 - 3 1 7 4 8 0 6 9 / 5: LKF/ D- Hy Hs Pt Pd Sc Si Pa Ma / Mf:

down the sequence which also confirms lesser intensity of symptoms of outpatients in group ‘R’.

Lower intensification of all psychopathologic symptoms-positive (productive) as well as negative (deficit) i.e. Pa, Sc, PSY, PS, Pa1, Pa2 and Pa3. In individuals in group ‘N’ these symptoms have greater intensity and therefore prompt escape into fantasy and day dreaming, and from here it is not far off to delusions; for these individuals the “reality check” function is disturbed (Intellectualisation of desires). The appearance of disturbed perception among outpatients with schizophrenia has been documented by many researchers [54]. Beyond this, many authors have reported that exterior factors have been exaggeratedly perceived as causes of negative events [35, 55, 56].

It should be mentioned that outpatients treated with risperidone do not display a tendency to abuse psycho-active drugs or medication where there is some relevance among those in group ‘N’ (Mac, Al).

A remarkable finding is the higher rate of familial discord (Pd1) of the “N” patients, which may be related with the High Emotion Expression (HEE) in their families.

Lower intensity of psychopathologic symptoms may decrease the intensity of Anxiety (MAS, AxS) as well as Phobias (PHO), which is consistent with other studies [33, 57].

There is also a lower intensity in group ‘R’ for hostile feeling and impulses in various aspects and forms of hostility and aggression (HOS, Hostility, HV, HC, PAI, Hy5, Aggressive-Sadistic Style of interpersonal functioning) which is confirmed by PANSS having similar results regarding “felt aggression” [33, 57, 58].

Assuming that risperidone improves verbal functioning (Borkowska A., 1999) it can be suggested that communication competency improves and, therefore, interpersonal relationships may also improve. The study’s results indicate group ‘R’ outpatients’ sensitivity to social influence and less sensitivity to hostility and negativism as well as less discomfort with others and social alienation (Social Submissiveness, SI2, Pd4a, Sc1a). A better quality of life, especially in relating to others and functioning in society, has been confirmed in other studies [59].

Group ‘R’ also displays a lower intensity of religious fundamentalism as well as religious delusions (REL); in their search for safeness, the afflicted treated with classic neuroleptics succumb to deep, if not fanatical, religious reflections and practice [60, 61, 62]. As Maslow has indicated [63], forming philosophical, ideological, and religious systems fulfil (among others) the need for safety.

Beyond the psychological symptoms, there are also somatic symptoms which sometimes as associated with the illness itself, i.e. paranoid schizophrenia but more

often they are side effects brought on by applied pharmacotherapy. Outpatients of group 'R' claim fewer organic/medical problems – nausea, vomiting, disorders of motorics and co-ordination, disorders of taste and smell, etc. (ORG, D3, Hy4), which may be associated with fewer side-effects in the form of somatic symptoms, including extrapyramidal ones [29, 36, 64, 65, 66].

The above conclusions agree with results of various studies with the use of PANSS, BPRS, etc. within the range of reducing psychotic symptoms, positive as well as negative [31, 32, 38, 39].

One of the more serious negative symptoms is emotional and social withdrawal [24, 67]. In this work a lower intensity of feeling emotional and social isolation, withdrawal and separation from others in group 'R' was confirmed (Pd4a, Sc1a).

Authors are in general agreement that in schizophrenia a rich depressive symptomatology occurs [54, 68, 69, 70, 71, 72]. Outpatients in group 'R' had: lesser feeling of lack of sense of life, greater life energy and happiness, satisfaction of self and life in general, and more energy; to a lesser degree they felt feelings of helplessness, despair, lack of success in life than outpatients in group 'N' (DEP, D5) [73].

A result which is difficult to interpret is the score of patients in the R group in FEM scale which assesses traditional women's interests, all the more difficult after confirmation of heightened prolactin levels [66, 74]. This is meaningful because similar differences occur in the MF Scale, in sub-scale MF2 in the MMPI [61, 62]; the MAS, and FEM in ACL, but without statistical significance (Tsirigotis K., Gruszczyński W., 2003, in review). If we were to determine the case according to psychological gender theory, one might risk the suggestion that 'female' behaviour requires less dynamism, energy and expansivity; maybe the classic neuroleptics stifle not only psychopathology symptoms but also 'life expansivity' [75, 76, 77, 78].

On the basis of the above results and deductions, it can be ascertained those treated with risperidone function effectively in a majority of categories of their life (validity scales L, K, F). They have better insight of themselves and perspective of their illness (Gough index); risperidone "protects" the cognitive functions better than classic neuroleptic drugs, which allows the outpatients better introspection of their affliction and better quality long-term hope and expectations [19].

As a result of better psychological adjustment, those from group 'R' are noted to have higher motivation for achievement, ambition and exertion for success as opposed to group 'N' where lower life force and lower motivation for accomplishment is demonstrated (St).

The presented results demonstrate that those suffering schizophrenia, treated with risperidone, compared with those treated with classic neuroleptic drugs, rarely display symptoms of internal maladjustment and psychological discomfort (IN, EM, GM). They are better adjusted and cope with daily tasks, have positive self-assessment and believe in themselves. They therefore have higher potential for adaptation (especially in social situations), possess many psychological resources which can be taken up as an advantage during therapy and rehabilitation (ES, Ability to Adjust). Similar results have occurred in factors like "intra-psychic resources" and "psychological functioning" in other related studies [78].

Summarising the results gained from outpatients surveyed it can be concluded that individuals treated with risperidone demonstrate a higher level of intra-psychic and

inter-personal adaptation than those treated with classic neuroleptic medication.

Conclusions

Based on the above psychological study results, we can conclude that those afflicted with paranoid schizophrenia and treated with risperidone display greater intensity of personality traits which are conducive to good psychological, personality and social adjustment in comparison to those treated with classic phenotiazine neuroleptics where greater intensity for maladjustment has been demonstrated regarding psychological, personal and social criterion.

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Authors' addresses
dr n. med. Konstantinos Tsirigotis
Poradnia Zdrowia Psychicznego PLS "Eskulap"
ul. 18-go Stycznia 16
98-300 Wieluń, Poland
tel: (0-43) 843-91-60;
(0-43) 843-69-70; 0607 364-635
e-mail: Kostek@pharmanet.com.pl
ktsirigotis@ap.edu.pl

prof. dr hab. med. Wojciech Gruszczyński
Klinika Psychiatryczna i Zaburzeń Nerwicowych
z Oddziałem Interwencji Kryzysowych
ul. Aleksandrowska 159
91-229 Łódź, Poland
tel: (0-42) 652-12-89
fax: (0-42) 640-50-58