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PSYCHOPATHOLOGICAL PROFILE AND ANTIPSYCHOTIC TREATMENT MAY BE LINKED TO INTERNALISED STIGMA IN SCHIZOPHRENIA – A CROSS-SECTIONAL STUDY

ZWIĄZEK PROFILU PSYCHOPATOLOGICZNEGO I LECZENIA PRZECIWPSYCHOTYCZNEGO Z INTERNALIZACJĄ PIĘTNA WŚRÓD PACJENTÓW ZE SCHIZOFRENIĄ – BADANIE PRZEKROJOWE

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Abstract

Purpose: The aim of this study was to assess the relationship between the internalised stigma of mental illness associated with the use of antipsychotic treatment and psychopathological profile among patients diagnosed with schizophrenia.

Method: The study group comprised 64 patients diagnosed with schizophrenia. The Internalised Stigma of Mental Illness Inventory was used to assess the degree of self-stigmatisation in five aspects: Alienation, Stereotype Endorsement, Discrimination experience, Social withdrawal and Stigma resistance. The symptoms were assessed by a psychiatrist using the Clinical Assessment of Schizophrenic Syndromes Scale. Other variables of interest included data on current pharmacotherapy, body-mass index (BMI) and general functioning. Multivariate linear regression models were created to assess the association between variables of interest and ISMI subscale scores. Results were considered statistically significant when $p < 0.05$.

Results: Zuclopenthixol, a long-acting injectable (LAI), was linked to greater Alienation, Stereotype endorsement and Discrimination experience, while risperidone LAI was associated with higher indices of Stereotype endorsement. Oral risperidone was linked to lower severity of Alienation and a greater level of Stigma resistance. A rise in the Lack of insight score predicted falls in Alienation, Stereotype endorsement, Discrimination experience and Social withdrawal scores. A rise in the Disturbances of Sense of Self score predicted rises in Alienation, Stereotype endorsement and Discrimination experience.

Conclusions: Internalised stigma among patients with schizophrenia is linked to the choice of antipsychotic treatment. Hence, it may be of clinical importance.

Key words: insight, long-acting injectable, disturbances of sense of self, ISMI.

Streszczenie

Cel: Celem niniejszej pracy była ocena zależności między zinternalizowanym piętnem choroby psychicznej i stosowanym leczeniem przeciwpsychotycznym w kontekście profilu psychopatologicznego u pacjentów, u których rozpoznano schizofrenię.

Metoda: Badaniem objęto 64 pacjentów z rozpoznaniem schizofrenii. Kwestionariusz *Internalised Stigma of Mental Illness Inventory* (ISMI) został użyty do ewaluacji stopnia samopiętnowania. Objawy psychopatologiczne zostały ocenione przez lekarza psychiatrę z pomocą skali Klinicznej Oceny Zespołów Schizofrenicznych (KOSS-S). Pozostałymi zmiennymi były informacje na temat aktualnej farmakoterapii (przyjmowane preparaty, dawka jako ekwiwalent olanzapiny), wskaźnik masy ciała oraz ogólnego funkcjonowania pacjenta. Utworzono wielozmiennowe modele regresji liniowej dla predykcji wyniku każdego z wymiarów ISMI. Poziom istotności statystycznej przyjęto dla $\alpha < 0,05$.

Wyniki: Utworzone modele były dopasowane do danych empirycznych. Stosowanie zuklopentiksolu w formie depot było powiązane z wyższym wynikiem na skalach Wyobcowania, Uznania stereotypów, Doświadczenia dyskryminacji oraz Wycofania społecznego kwestionariusza ISMI. Używanie risperidonu w formie depot było związane z wysokim wynikiem na skali Uznania stereotypów. Stosowanie doustnego risperidonu oral było związane z niższym poczuciem Wyobcowania oraz wyższym wynikiem Odporności na stygmatyzację. Wzrost wyniku na skali Zaburzeń Ja KOSS-S stanowił predyktor wzrostu wyników na skalach Wyobcowania, Uznania stereotypów i Doświadczenia dyskryminacji ISMI. Wzrost wskaźnika masy ciała był związany ze wzrostem wyniku na skali Doświadczenia dyskryminacji ISMI.

Wnioski: Internalizacja piętna przez pacjentów ze schizofrenią może być powiązana ze stopniem ciężkości objawów psychopatologicznych, wyborem psychofarmakoterapii oraz ogólnym funkcjonowaniem. Rezultaty te mogą mieć znaczenie kliniczne.

Słowa kluczowe: wgląd, długodziałające leki przeciwpsychotyczne, zaburzenia Ja, ISMI.

INTRODUCTION

Stigmatisation is regarded as a multidimensional social process that involves the devaluation of certain individuals based on a feature, which is considered as widely unaccepted. Those with a diagnosis of mental illness, particularly schizophrenia, are at highest risk of stigmatisation [1]. Inadequate behaviour during the acute phase of the disease, noticeable side effects of pharmacotherapy and even a diagnosis of the psychotic disorder itself may be seen as socially unwanted [2]. Furthermore, individuals with stigmatised features are often attributed with negative, ill-founded and oversimplified cognitive schema based on a number of widely-held stereotypes [3]. Such stereotypes include being dangerous, unpredictable, dependent or irresponsible and hence requiring constant care in everyday life [4]. These may elicit certain affective reactions towards those individuals, i.e. anxiety, disgust or pity. Both stereotypes and prejudice may lead to discrimination towards patients with schizophrenia, resulting in exclusion, active evasion and a reluctance to help, thus limiting access to employment or accommodation [5]. This presented sequence of psychosocial phenomena is known as the *public stigma* [6].

Individuals with psychiatric diagnoses present different reactions to stigmatisation, and hence the clinical significance of the phenomenon (relationship with outcome, either positive or negative) may vary. Some patients remain indifferent, while others react with anger and are thus motivated to participate actively in the therapy. However, a third group considers the public stigma to be justified, and this group suffers the greatest burden [6]. They internalise negative social beliefs concerning people with mental illness: a phenomenon known as self-stigma or internalised sigma of mental illness. The mental representation of this self-stigma can be divided into cognitive (Stereotype endorsement), emotional (Alienation) and behavioural (Discrimination experience, Social withdrawal) aspects of [7]. A recent systematic review by Gerlinger *et al*. revealed a high prevalence of self-stigma (49%) among patients diagnosed with schizophrenia spectrum disorders [8]. As a result of this self-stigma, patients begin behaving in accordance with internalised stereotypes [6], resulting in the performance of evasive behaviour and the devaluation of features contradictory to the stereotypes [9].

Internalised stigma have previously been linked to several negative consequences, including low self-esteem and self-efficacy, low quality of life, sense of hopelessness and depressive symptoms [10, 11]. A higher degree of internalised stigma has also been associated with poor adherence to therapy and worse outcome [12].

The relationship between self-stigma of mental illness and other factors, including sociodemographic status, insight, knowledge of the disease and sense of embar-

rassment has been thoroughly examined in the literature [13–16]. However, less evidence exists concerning the association between internalised stigma and the use of psychopharmacotherapy. Of the few papers that examine the topic, Uhlmann *et al.* report that a higher extent of self-stigmatisation predicts a more negative attitude towards taking medication [17], and Surmann *et al.* note that the degree of subjective well-being under antipsychotic medication mediates the extent of self-stigmatisation [18].

The range of currently available antipsychotic drugs is characterised by variations in recommended dosage, route of administration, pharmacokinetics, pharmacodynamics and side-effect profile [19]. Despite second-generation antipsychotics being considered first-choice treatment, the psychiatrist may decide on a different strategy, for example one based on the use of first-generation antipsychotics or polypragmasia [20]. The choice of pharmacotherapy is usually based on the psychopathological profile of the patient, the intensity of positive symptoms and the risk of side effects [21]; however, this decision is known to be influenced by several other factors, including the age and experience of the physician, indications for long-acting injectables and the attitude of the patient towards a certain drug [20, 22]. It may be hypothesised that the choice of the treatment is indirectly associated with internalised stigma. Individuals with a high degree of self-stigma tend to delay treatment, are characterised by increased severity of symptoms, are at increased risk of depression and demonstrate poor adherence to the chosen treatment [10, 12]. These factors may determine the outcome of the pharmacotherapeutic process. In addition, a high level of self-stigma may be associated with side-effects, such as gains in body mass index. Obesity is known to be correlated with poor quality of life and increase in self-stigma.

The aim of the present study was to assess the relationship between the internalised stigma of mental illness associated with the use of antipsychotic treatment and psychopathological profile among patients diagnosed with schizophrenia.

METHOD

Studied sample

The study group comprised patients who attended the Babinski Memorial Specialist Psychiatric Hospital in Łódź, Poland from 2014 to 2017. The patients were recruited consecutively and non-randomly in the stated period. All patients were fully informed of the aim and the procedure of the study. The inclusion criteria comprised age between 18 and 70, a diagnosis of schizophrenia based on the ICD-10 classification, a stable mental state and cognitive functioning at a level which allowed completion of the questionnaires. Seventy-five patients were initially chosen as being eligible for the study. Seven of these did not agree to participate, and another three did not complete all the questionnaires. In addition, one patient was receiving a short-acting injectable and so was rejected from the analysis; the remainder were receiving either oral antipsychotics or long-acting injectables (LAI). Therefore, the final analysed sample comprised 64 patients, i.e. 12 inpatients staying in the day ward (19%), 51 treated in the open psychiatric unit (79%) and one person from outpatient clinic (2%). All patients gave their signed informed consent to take part.

Ethical considerations

The study was conducted in accordance with the Declaration of Helsinki. The protocol of the study was approved by the Bioethical Committee of (blinded for the purpose of the review) (decision number RNN/10/14/KE, 14th January 2014).

Operationalisation of variables

All information concerning prescribed antipsychotic medication was obtained from the medical charts of the patients. Patient age, weight and height was also taken to calculate body mass index (BMI). Detailed information on the dosage of the antipsychotics was converted to olanzapine-equivalent doses for the purposes of analysis [23]. The antipsychotics were introduced at least two weeks prior to the study.

Patient psychosocial functioning was assessed with the Global Assessment of Functioning (GAF) scale, developed by the American Psychiatric Association [24]. The best GAF value identified from the six months preceding the study was recorded.

The Internalised Stigma of Mental Illness Inventory (ISMI) was used to assess the self-stigmatisation of the patients. The questionnaire was developed by Ritsher *et al.*, and the Polish version was adapted by Piotr Świtaj [25, 26]. It consists of 29 items divided into six subscales: Alienation, Stereotype endorsement, Discrimination experience, Social withdrawal (six items each) and Stigma resistance (five items). While a higher score is associated with greater perceived stigma in the first five scales, the sixth scale is inverted. However, in the present study, a lower Stigma resistance score was assumed to indicate a higher perceived vulnerability to stigma for the sake of clarity.

The Clinical Assessment of Schizophrenic Syndromes Scale (KOSS-S) is a tool devised at the First Department of Psychiatry, Institute of Psychiatry and Neurology of Warsaw, Poland [27]. It comprises 31 items, which refer to symptoms assessed by the psychiatrist. Factorial analysis identified eight dimensions within the psychopathological profile: Disorganisation (of syntax, conceptual, communicational, inadequacy

of speech, inadequacy of behaviour and emotion), Deficit (affective bluntness, lack of interest, poverty of thinking, autism), Lack of insight (lack of criticism, lack of insight into illness, unwillingness to treatment), Disturbances of Sense of Self (SOS, sense of incoherency of self, self-alienation, disturbances of ipseity), Dysphoria (dysphoric mood, aggressive behaviour, arousal), Impaired judgement (delusional content, hallucinations, delusional actions), Catatonia (freezing, negativism) and Depression (auto-aggressive behaviour, depressive mood and anxiety). Three items (difficult contact, elevated mood and inhibition) were not included in this factorial solution, and so were not considered as variables in the present study.

One of the unique aspects of the KOSS-S, offering an advantage over the popular Positive and Negative Symptoms Scale (PANSS) for the purposes of the present study, is that it makes a detailed evaluation of patient insight. Otherwise, both the PANSS and KOSS-S have been found to yield similar psychometric values [27].

Statistical analysis

Multivariate linear regression models were created to assess the association between variables of interest and ISMI subscale scores. All candidate variables (enlisted and characterised in Table 1 and Table 2) were included at the beginning of each model. Backward elimination was used to determine which variables were significantly linked to ISMI scores. The probability of elimination was set at 0.051. An analysis of residuals based on the Durbin-Watson test was performed for each model to assess the validity of assumptions of normality, homoscedasticity and independence between observations. The tolerance indices were analysed to check for possible multicollinearity. The linear regression results were reported as unstandardised ß parameter values with standard errors (SE). Standardised ß parameter values were used to present the size of effects. Results were considered statistically significant when $p < 0.05$. The Benjamini-Hochberg procedure was introduced to decrease the false discovery rate associated with the exploratory character of the study [28]. SPSS 24.0 (IBM, USA and Predictive Solutions, Poland) was used for all statistical analyses.

Table 1. Frequencies of sex and choice of antipsychotic medication in the studied sample

	N	%
Patient sex		
Male	33	52.38
Female	30	47.62
Number of meds		
One	14	22.22
Two	44	69.84
Three	5	7.94
Oral antipsychotics		
Amisulpride	8	12.70
Aripiprazole	12	19.05
Chlorprothixene	4	6.35
Clozapine	11	17.46
Haloperidol	3	4.76
Olanzapine	28	44.44
Quetiapine	8	12.70
Perazine	3	4.76
Risperidone	14	22.22
LAI antipsychotics		
Haloperidol	13	20.63
Olanzapine	1	1.59
Risperidone	8	12.70
Zuclopenthixol	4	6.35

LAI – long-acting injectables

RESULTS

All variables of interest are listed in Table 1 (qualitative variables with frequencies in the studied group) and Table 2 (continuous variables with descriptive statistics in the studied group).

A multiple linear regression model was created for each ISMI subscale. Each model was matched to the empirical data ($p < 0.05$ each). Detailed results are given in Table 3.

Prediction of Alienation

The coefficient of determination of the linear regression model was 0.296. A rise in the Alienation score was predicted by the lack of use of olanzapine LAI, the lack of use of oral risperidone, the use of Zuclopenthixol LAI, a rise in the KOSS-S Deficit dimension score, a fall in the KOSS-S Lack of Insight score and a rise in the Disturbances of Sense of Self score. No interactions were suspected.

Prediction of Stereotype endorsement

The coefficient of determination of the model was 0.312. A rise in the Stereotype endorsement score was associated with the use of Risperidone LAI and Zuclopenthixol LAI, a fall in the GAF score, a fall in the KOSS-S Lack of Insight score and a rise in the Disturbances of sense of self score.

Prediction of Discrimination experience

The coefficient of determination of the linear regression model was 0.262. A rise in the Discrimination experience score was linked to a rise in BMI, a fall in daily antipsychotic dose, the use of Zuclopenthixol LAI, a fall

Table 2. Descriptive statistics of continuous variables of interest in the studied sample

	Min	Max	M	SD
Age	25.00	68.00	46.25	12.12
BMI	19.57	40.00	26.11	4.79
OLA eq. (mg/day)	2.50	53.20	25.44	12.23
GAF	20.00	90.00	39.10	12.73
ISMI scales				
Alienation	1.00	4.00	2.54	0.74
Stereotype endorsement	1.00	3.71	2.16	0.61
Discrimination experience	1.00	4.00	2.40	0.69
Social withdrawal	1.00	4.00	2.41	0.66
Stigma resistance	1.00	4.00	2.77	0.59
ISMI total score	1.00	3.55	2.34	0.55
KOSS-S dimensions				
Disorganisation	6.00	28.00	15.62	5.22
Deficits	7.00	18.00	12.83	2.91
Lack of insight	5.00	18.00	10.65	3.73
Disturbances of sense of self	3.00	12.00	3.49	1.55
Dysphoria	3.00	10.00	4.06	1.75
Impaired judgement	3.00	18.00	6.19	3.27
Catatonia	3.00	7.00	3.19	0.64
Depression	3.00	11.00	4.44	1.93
KOSS-S total score	38.00	95.00	66.48	13.99

BMI – body mass index; OLA eq. – olanzapine-equivalent dose; GAF – Global Assessment of Functioning; ISMI – Internalised Stigma of Mental Illness; KOSS-S – Clinical Assessment of Schizophrenia Syndromes; Min – minimal value; Max – maximal value; M – mean; SD – standard deviation

in GAF score, a fall in the KOSS-S Lack of Insight score and a rise in the Disturbances of sense of self score.

Prediction of Social withdrawal

The coefficient of determination of the linear regression model was 0.130. A rise in Social withdrawal score was predicted by a rise in the KOSS-S Deficit dimension score, a fall in the Lack of Insight score and a rise in the Impaired judgment score.

Prediction of Stigma resistance

The coefficient of determination of the prediction model was 0.204. A rise in Stigma resistance was predicted by the use of oral risperidone, a rise in the KOSS-S Disorganisation score, a fall in the KOSS-S Deficit dimension score, a fall in the Disturbances of Sense of Self score and a rise in the Catatonia score.

DISCUSSION

The present study investigates the relationships between antipsychotic pharmacotherapy and various dimensions of internalised stigma; however, the constructed models and the design of the study do not allow conclusions to be drawn regarding any causal relationships.

Our findings indicate that the choice of antipsychotics is most likely affected by certain cues identified by the psychiatrist from the clinical assessment. Those cues might exist outside the evaluated schizophrenic syndromes: our findings suggest that the associations between pharmacotherapy and self-stigma were independent of the symptoms. This would be in line with an approach known as 'drug-cantered pharmacotherapy', in which treatment is chosen based on a holistic assessment of all the symptoms together with the other problems presented by the patient, and is not dictated by the diagnosis [29]. This model may also suggest that changes in internalised stigma are drug induced since it is expected that psychiatric medications exert their function via changes in emotional, cognitive or behavioural patterns.

Antipsychotic treatment as a predictor of self-stigma

Our findings indicate that of all considered oral antipsychotic drugs, only risperidone was found to be asso-

Table 3. Parameters of linear regression models for the prediction of Internalised Stigma of Mental Illness questionnaire dimensions in the studied sample

Alienation: R^2 = 0.296, F = 5.348, df = 6, p < 0.001						
	B	**SE**	**Beta**	***t***	***p***	***p* corr.**
Intercept	1.810	0.386		4.685	< 0.001	< 0.001
Olanzapine depot	–1.302	0.636	–0.221	–2.047	0.045	0.047
Risperidone	–0.566	0.197	–0.320	–2.868	0.006	0.012
Zuclopenthixol depot	0.885	0.353	0.294	2.503	0.015	0.021
KOSS-S Deficit dimension	0.095	0.030	0.371	3.131	0.003	0.010
KOSS-S Lack of insight	–0.082	0.025	–0.414	–3.251	0.002	0.010
KOSS-S Sense of self disturbances	0.139	0.054	0.291	2.562	0.013	0.022
Stereotype endorsement: R^2 = 0.312, F = 6.634, df = 5, p < 0.001						
	B	**SE**	**Beta**	***t***	***p***	***p* corr.**
Intercept	3.529	0.443		7.959	< 0.001	< 0.001
Risperidone depot	0.526	0.195	0.288	2.699	0.009	0.017
Zuclopenthixol depot	0.888	0.288	0.356	3.080	0.003	0.009
GAF	–0.028	0.006	–0.572	–4.400	< 0.001	< 0.001
KOSS-S Lack of insight	–0.069	0.023	–0.417	–2.981	0.004	0.011
KOSS-S Sense of self disturbances	0.091	0.043	0.231	2.119	0.038	0.043
Discrimination experience: R^2 = 0.262, F = 4.677, df = 6, p = 0.001						
	B	**SE**	**Beta**	***t***	***p***	***p* corr.**
Intercept	2.705	0.864		3.129	0.003	0.009
BMI	0.052	0.017	0.363	3.105	0.003	0.009
Olanzapine equivalent (mg/day)	–0.017	0.007	–0.301	–2.344	0.023	0.028
Zuclopenthixol depot	0.981	0.339	0.349	2.891	0.005	0.013
GAF	–0.024	0.008	–0.442	–2.872	0.006	0.012
KOSS-S Lack of insight	–0.075	0.030	–0.405	–2.539	0.014	0.022
KOSS-S Sense of self disturbances	0.123	0.050	0.277	2.441	0.018	0.023
Social withdrawal: R^2 = 0.130, F = 4.088, df = 3, p = 0.011						
	B	**SE**	**Beta**	***t***	***p***	***p* corr.**
Intercept	1.889	0.373		5.069	< 0.001	< 0.001
KOSS-S Deficit dimension	0.065	0.029	0.285	2.209	0.031	0.037
KOSS-S Lack of insight	–0.063	0.025	–0.353	–2.519	0.015	0.022
KOSS-S Impaired judgement	0.058	0.028	0.284	2.030	0.047	0.047
Stigma resistance: R^2 = 0.204, F = 4.176, df = 5, p = 0.003						
	B	**SE**	**Beta**	***t***	***p***	***p* corr.**
Intercept	2.358	0.435		5.416	< 0.001	< 0.001
Risperidone	0.424	0.169	0.302	2.514	0.015	0.021
KOSS-S Disorganisation	0.034	0.016	0.303	2.154	0.035	0.041
KOSS-S Deficit dimension	–0.074	0.028	–0.366	–2.606	0.012	0.021
KOSS-S Sense of Self Disturbances	–0.096	0.046	–0.254	–2.109	0.039	0.042
KOSS-S Catatonia	0.334	0.106	0.365	3.142	0.003	0.011

LAI – long-acting injectables; KOSS-S – Clinical Assessment of Schizophrenia Syndromes; SOS – Sense of self; GAF – Global Assessment of Functioning; BMI – body mass index; OLA eq. – olanzapine-equivalent dose; R^2 – quotient of determination; F – F statistics; df – degrees of freedom; p – probability in a test of significance; p corr. – probability after Benjamini-Hochberg correction; B – unstandardised linear regression parameter; SE – standard error of B; β – standardised linear regression parameter (size of effect); t – Student's t statistics

ciated with self-stigmatisation: its use was linked to lower severity of Alienation and a greater degree of Stigma resistance. Risperidone is a member of the second-generation group of antipsychotic drugs, which is currently recognised as first choice in schizophrenia treatment due to its relative safety and efficacy [30]. Although no previous data exists on the link between the use of risperidone and internalised stigma, data from one randomised controlled trial suggests that risperidone may improve social engagement, cooperative behaviour and the interpersonal trust of patients with schizophrenia, which may prevent the patient experiencing a sense of alienation [31]. On the other hand, another study has previously linked the choice of risperidone to a greater severity of positive symptoms [21], which in turn may increase the odds of experiencing negative discrimination [32]. Our present findings identify a link between positive symptoms (i.e. Impaired judgment) and Social withdrawal (probably due to atypical behaviour accompanying psychotic symptoms), but not Alienation, Stereotype endorsement or Discrimination experience. The results of the aforementioned studies suggest that the mechanism of action of risperidone may include alleviation of alienation; however, this conclusion demands further research.

LAI Zuclopenthixol was linked to greater Alienation, Stereotype endorsement and Discrimination experience, while LAI risperidone was associated with higher indices of Stereotype endorsement. The use of LAI antipsychotics represents one of the treatment choices for patients with poor compliance, which in turn has been linked to greater severity of internalised stigma [10, 33]. This may explain the relationship identified between LAI Zuclopenthixol use and ISMI score. Conversely, LAI olanzapine predicted a decrease in Alienation score, but this result should be interpreted carefully since only one patient in the study group used the drug in this formulation. It was previously considered that LAI antipsychotics were underutilised due to the stigmatising character of their use: this treatment is reserved for psychotic mental illness and regular injections are required [34]. Nevertheless, it should be considered that LAI use is associated with substantial improvements in adherence, symptoms and rate of hospitalisations [35]. Those benefits may outweigh their possible link to increased self-stigma; however, this hypothesis requires further verification.

Severity of illness as a predictor of self-stigma

The severity of illness and loss of general functioning have been previously linked to self-stigma in schizophrenia. These findings were confirmed in a recent systematic review by Boyd *et al.* [26, 36]. In the present study, several indicators of symptom severity predicted greater internalised stigma. For example, worse functioning, evaluated via GAF, predicted high scores of Stereotype endorsement and Discrimination experience, and a high score on Deficit dimension was associated with high Alienation and Social withdrawal scores. The latter is in line with findings by Shin *et al.*, who linked self-perceived cognitive deficits to self-stigma in schizophrenia [37].

Vrbova *et al.* found that the difference between the objective and subjective severity of symptoms was negatively correlated with internalisation of stigma. This difference may be directly proportional to lack of insight. Thus, the patients lacking insight into their disease may not consider the stigmatising stereotypes and attitudes as referring to them, and so may not internalise stigma [38]. These results were confirmed in the present study.

A greater severity of Disturbances of sense of self (or disturbances of ipseity) predicted higher scores on Alienation, Stereotype endorsement, Discrimination experience scales and lower Stigma resistance. Disturbances in the sense of self are defined as hyperreflexivity and diminished self-affection, and are considered as being "the core" of schizophrenic psychopathology [39]. It was previously reported that patients with schizophrenia suffer from various disturbances of ipseity more often than patients with bipolar disorder or healthy individuals [40]. Disturbances of self-involved sense of self-alienation and instability of ipseity, which may be particularly burdensome for the patient, thus increasing the degree of self-stigma. Even so, this hypothesis requires further verification employing both qualitative and quantitative methods.

Other results

In the present study, high BMI predicted a high Discrimination experience score. Obesity is considered as one of the most common and most apparent side effects of antipsychotic drug use and is widely known to be particularly stigmatising [41]. Barber *et al.* found that weight stigma may be less pronounced among patients with schizophrenia than in the non-psychiatric population; yet, self-directed weight bias may be similar in both groups. Nonetheless, weight-related stigma may significantly impair quality of life, especially if it is accompanied by serious and debilitating mental illness [42].

The coefficient of determination for the constructed linear regression models varied from 0.13 to 0.31. This may reflect the poor size of effect of clinical symptoms and pharmacotherapy on the internalised stigma. Therefore, none of the models can be used to predict the value of a "dependent" variable based on those of "independent" variables [43]. However, as the process of self-stigmatisation is multifactorial, the size of the effect for any of the associations was not expected to be large.

Limitations of the study

Despite obtaining statistically and clinically significant findings, the study has certain limitations. Firstly, as this

is a cross-sectional, observational analysis at a single time point, the potential interpretation of the influence of "dependent" variables on "independent" variables is limited. Future studies on the topic should employ a prospective design. In addition, the sample size is small, especially in the context of the number of the variables of interest. Also, the study group only comprises patients from a single psychiatric centre. The exploratory character of the study and the choice of statistical methods implies that its results are definitely not conclusive and merely serve as an introduction for further studies. A multicentre study with randomised choice of patients may allow further confirmation and generalisation of the present results.

CONCLUSIONS

Although internalised stigma among patients with schizophrenia is regarded as a psychosocial phenomenon, it seems that it may also be of clinical importance. As shown in the present research, it has been linked to the severity of symptoms, the choice of psychopharmacotherapy and general functioning. Self-stigma has previously been reported to be linked to poor adherence to treatment [33]. Therefore, self-stigmatisation of patients diagnosed with schizophrenia is confirmed to be of both clinical and psychosocial importance [44].

Conflict of interest/Konflikt interesu

Absent./Nie występuje.

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