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A 45-year follow-up study of adolescent schizophrenia. Part I: Premorbid values of psychological and relational indicators in the context of illness course and long-term social functioning of patients

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Summary

Aim. Research on predictors of adolescent schizophrenia, especially those based on long-term follow-up studies, is rare in the literature. In our analysis, we examine the relationship between the premorbid functioning of the respondents and clinical and social indicators of the illness course.

Method. 69 patients at the average age of 16 years (time point 0), hospitalized due to schizophrenia (retrospectively re-diagnosed according to ICD-10 criteria) and re-examined 5 years later (time point 1 – personal examination of 41 individuals), were re-evaluated for clinical and social parameters 45 years after their initial hospitalization (time point 2 – personal examination of 21 individuals).

Results. Premorbid indicators of mood, life drive, emotional expression, level of social withdrawal, intelligence, anxiety, development of sexual and aggressive drive, and family and extra-family relational life revealed numerous and various correlations with both the symptomatic picture and clinical course of schizophrenia as well as distant social functioning of the subjects. Variables of the greatest prognostic value were: the emotional attitude of "moving away from" people and the world, and rich relational life outside the family of origin. These variables revealed opposite correlations, especially with the severity of negative symptoms, the level of late insight and regression, the quality of professional life and GAF scores, with the correlations of rich relational life to be assessed as positive and the correlations of attitude of "moving away from" as negative. The harmonious development of drive as well as high intelligence also proved to be significant. The correlations of both of these variables have proved beneficial both in clinical and social terms.

Conclusions. The so-called premorbid personality described by several indicators turns out to be an important prognostic factor in juvenile schizophrenia.

Key words: schizophrenia, adolescence, prognosis

Introduction

For approximately 40 years schizophrenia has been diagnosed according to uniform criteria that are independent of the patient's age. However, there is currently no doubt that it remains a complex issue which is still enigmatic in many areas. Follow-up research on schizophrenia has been conducted for many years with only a minority concerning developmental age schizophrenia (generally referred to in the literature as early onset schizophrenia – EOS or, in the case of children before puberty, very early onset schizophrenia – VEOS). The illness developing in adolescents is not a rare phenomenon, as it constitutes about 15% of all cases [1], and its multidimensional distinctiveness has been emphasized in numerous studies and papers [e.g., 2–4]. Therefore, determining the key factors for the prediction of its course and success of treatment is an important task which, however, has not been commonly addressed. Follow-up studies of more than 20 years are rare. We identified only two studies [5, 6] with a follow-up period of 42 years, however, both of them concerned the VEOS subpopulation. A review of contemporary knowledge about factors influencing prognosis in early-stage psychoses is provided by researchers from Madrid [7].

Part I of our follow-up study deals with the predictive value of personality type and social functioning in the premorbid period. Despite the well-established knowledge of the importance of such factors for the prognosis of schizophrenia and the undoubted methodological limitations of our work (which are discussed below), we decided that due to the relative scarcity of data in the literature relating specifically to adolescent schizophrenia and due to the exceptionally long follow-up period available to us, it is worth undertaking this research task.

Material and method

The initial research for the project was conducted in the years 1968–1972 (time point 0) [8]. It included a group of 256 patients aged 14–19 years (mean: 16 years), hospitalized psychiatrically for the first time in their lives. Five years after admission to the Psychiatry Clinics in Krakow, in the years 1972–1977 (time point 1), a second study was carried out after having invited former patients by letter to come to the Clinic. The same 5-year follow-up period was applied to all these patients. Those who could not come to the clinic were asked to send back a completed questionnaire containing 11 questions about different aspects of their functioning during the follow-up period. Where necessary, medical records from treatment in other centers were checked. At both stages, the same method of information collection was used – an interview and a psychiatric examination, based on the same scenario. Medical history data, especially those concerning the premorbid period, were collected also from the patients' parents – wherever possible, from both of them. The collected data were processed using the modified Turku Schizophrenia Assessment Form (TSAF) and Follow-up Assessment Form (FAF) constructed by Alanen and Räkköleinën [9, 10].

Many years later, around the year 2010, the idea of re-examining the patients was born. It was decided that the examination would be carried out on people who were diagnosed with adolescent schizophrenia during their first hospitalization in the years 1968–1972. Based on very detailed descriptions of the mental condition of the examined patients at time point 0, a re-diagnosis of cases according to ICD-10 [11] was performed, qualifying patients meeting the criteria of diagnostic code F20 (schizophrenia) for examination. Altogether, 69 former patients (34 men and 35 women) were qualified for the study. Out of them, 41 people were also personally examined at time point 1 (19 men and 22 women). An invitation to participate in the study, with a description of its course and explanation of its purpose, was sent to the living patients. To those who, to our knowledge, had received the letter but have not responded to it, another registered letter was sent with a follow-up survey modeled on the one used 5 years after the first hospitalization, together with a request to fill it in and send it back to the Clinic in the enclosed return envelope. At the beginning of the study, to our knowledge, 20 people had already died, therefore, a total of 49 letters was sent.

21 people were examined personally (7 men and 14 women), most of them in the Psychiatry Clinic, some in social welfare homes (DPS), and some in their private homes and flats. In the case of 6 people, the source of information were questionnaires, letters and phone contact. Nevertheless, the query was carried out in 20 hospitals and psychiatric wards, in which, in the highest probability, the examined persons could have been re-hospitalized psychiatrically during the follow-up period. The whole research was conducted in the years 2014–2016 (time point 2), i.e., on average 45 years after the first hospitalization. Again, selected items of the FAF questionnaire were used, thus maintaining methodological consistency in relation to the previous survey time points. The GAF (*Global Assessment of Functioning*) scale from DSM-IV TR [12] was also used and additional categories described further in this paper were created.

The categories relevant in this part of the study are the variables:

– "Basic mood", "Emotional attitude", "Psychosexual development", "Aggressiveness", "Anxiety", "Relations with siblings" – dichotomous in nature, with the following values at the top of the scales, respectively: sadness, attitude of "moving away from" (people and the world, a term created by Kępiński [13]), normal psychosexual development, the presence of manifestations of violent, impulsive aggressiveness, the presence in the development of traits, tendencies and symptoms of anxiety and with strong relations with siblings;
– determined on a three-point order scale: "Emotional expression", or on a four-point scale: "Life drive", "Intelligence", "Extra-family relations" – where at the top of scales there were self-containedness, very weak life drive, above-average intelligence, and numerous and rich extra-family relations, respectively.

The psychopathology of schizophrenia recorded at individual time points of the study was divided into the following categories: "Autism", "Apathy and abulia",

"Symptoms of splitting", "Formal thought disorders", "Catatonia symptoms", "Hebephrenic symptoms", "Delusions", and "Hallucinations". The severity of each symptom was assessed by personal examination using a four-point order scale. The sum of the whole schizophrenic psychopathology ("Sum of schizophrenia symptoms") was also calculated by adding together the severity of all eight groups of symptoms. "Cognitive deficits" were assessed using the same four-point scale. "Cognitive deficits" here mean the impairment of cognitive functions such as thinking, memory, and judgement, understood as secondary to the development of the schizophrenic process. The number of hospitalizations and the total number of days spent in hospital ("days in hospital in total") were assessed on quantitative scales, taking into account only inpatient hospitalizations in general psychiatric wards. The other order variables included were classified on a three-point ("Regression"), five-point ("Relational abilities", "Education", "Professional life") or six-point ("Insight", "Clinical improvement") scale, with the following values at the top of the scales, respectively: deep regression, ability to establish mature bonds, higher education, very good professional functioning, full insight, and full remission.

The following variables were dichotomized: "Psychotherapy during follow-up", "Marriage", "Death before time point 2", "Death before the age of 50", with the following values at the top of the scales: psychotherapy between time points 0 and 1, getting married, death before time point 2, and death before the age of 50.

The GAF is a hundred-point order scale combining the assessment of the severity of psychopathology and the level of social functioning. The conditions of this study were considered to allow for an assessment with an accuracy corresponding to the five-point range. "The number of children" was regarded as a quantitative variable.

Statistical methods

Due to the multitude of dependent variables and potential predictors that we decided to take into account, we stopped the analyses at the level of bilateral correlations without moving to the level of regression analysis, which would have required a significant pre-selection of data. We considered non-parametric tests (Spearman's coefficient) to be more adequate than parametric tests because of the lack of clarity about the normal distribution of the examined traits, a large amount of data outliers from the average, and also because of the large amount of dichotomous and sequential data, thus not typically quantitative data. The statistical significance level was assumed to be $p < 0.05$, however, due to interesting trends emerging from the analyses at a weaker significance level (< 0.1) we decided to also present them, bearing in mind the weak statistical basis of such conclusions. For analyses, we made use of statistical software IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp., Released 2012.

Limitations of the work

We recognize very serious methodological limitations of our work. 50 years have passed since the period when the first data were collected. During this time, the entire psychiatry has changed significantly, including the understanding of schizophrenia. The decisions of the first researchers concerning the diagnosis of the patients, the division of the symptoms of schizophrenia into categories, the understanding of anxiety disorders, the understanding of psychosexual development (to remain with selected examples only) were certainly anchored in the (not only psychiatric) culture and knowledge of those times. The mere re-diagnosis of psychopathological syndromes according to ICD-10 criteria (although, thanks to the reliability and inquisitiveness of the first researchers' descriptions, it seems relatively reliable) certainly does not eliminate these differences entirety. The construction of the scales, which have been preserved for methodological continuity, is not devoid of a certain arbitrariness.

Undoubtedly, the weakness of the work is the fact that, except in particularly doubtful cases, the results of the examination of individual persons were not discussed, and the researchers individually and independently made decisions about scores in particular categories. The work is also limited by the fact that the number of people surveyed personally is clearly decreasing over time: at time point 0 there were 69 people, at time point 1 – 41, and at time point 2 – only 21. It should be noted that only 12 people (9 women and 3 men) were examined personally at each of the points of the study. The fact that a lot of data (concerning the course of treatment, education, work, personal life, survival) could be obtained from other sources can only be a partial compensation, burdened by its own limitations.

A separate problem is the issue of distinguishing between the unfavorable characteristics of the premorbid personality and the prodromal symptoms of schizophrenia. Even today, it is still virtually impossible to resolve this problem unequivocally, and in the case when the researcher relies on evaluations made 50 years ago, the historically determined differences of opinions undoubtedly further entangle this issue. From the statistical point of view, the work stops at a rather superficial level of analysis, which has already been discussed and justified in the previous subsection. When discussing the limitations of the work, it is worth noting that the analyzed material was developed by researchers to whom psychodynamic theories of schizophrenia etiopathogenesis are particularly close. Wherever the text refers to the premorbid personality of adolescents, this term should be understood as a personality not fully formed, being still in development. This issue does not only concern terminology but it is also an expression of the authors' beliefs.

Results

The first area of analysis was the correlation between the values of premorbid psychological and relational indicators and the image of the illness recorded both

during the first hospitalization and 5 years and 45 years later. This area is illustrated by Tables: 1, 2,and 3.

Table 1. **Value of premorbid psychological and relational indicators and clinical picture of the illness at time point 0**

	Basic mood	Emotional expression	Emotional attitude	Life drive	Intelligence	Psychosexual development	Aggressiveness	Anxiety	Relations with siblings	Extra-family relations
Autism 0	0.27*	0.09	0.24*	0.03	0.03	0.02	-0.05	0.09	0.04	-0.20+
Apathy, abulia 0	0.23+	0.24*	0.30*	0.22+	0.00	-0.01	-0.14	-0.05	-0.14	-0.31**
Symptoms of splitting 0	0.01	0.03	-0.03	0.03	0.00	-0.14	0.16	0.18	-0.10	-0.04
Formal thought disorders 0	-0.09	-0.20+	-0.18	-0.23+	0.13	0.41***	0.15	0.04	0.15	0.30*
Catatonia symptoms 0	-0.11	-0.28*	-0.27*	0.03	-0.28*	0.17	0.00	-0.02	0.15	0.24*
Hebephrenic symptoms 0	-0.11	-0.13	-0.07	-0.20	0.14	0.15	0.19	0.00	-0.05	0.03
Delusions 0	0.14	0.11	-0.03	-0.08	0.07	0.04	0.16	0.08	0.16	-0.08
Hallucinations 0	0.04	-0.06	-0.12	0.23+	-0.21+	-0.07	-0.18	0.03	0.09	0.00
Sum of schizophrenia symptoms 0	0.07	-0.08	-0.13	0.02	-0.05	0.25+	0.00	0.02	0.09	0.06

Spearman's correlation coefficient:

+ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.005$

Premorbid sadness correlates with a higher severity of autism and apathy/abulia at time point 0. On the other hand, poor emotional expression primarily correlates with later apathy/abulia, but it is also a protective factor against the development of catatonia symptomatology and, to a lesser extent, against the development of formal thought disorders. The attitude of "moving away from" is quite clearly translated into autism and apathy/abulia and turns out to be a protective factor against catatonia symptoms. The correlations of life drive are not that distinct but focusing on the stronger ones among them, it can be noticed that weak drive correlates with later apathy and abulia as well as hallucinogenic experiences, while strong drive correlates with formal thought disorders and hebephrenia. Premorbid intelligence is primarily negatively correlated with later catatonicity. On the other hand, normal psychosexual development very

clearly translates into the higher severity of formal thought disorders. This is actually true for the psychopathology as a whole at time point 0 because the total severity of psychopathology shows the strongest (although still statistically insignificant) correlation with normal psychosexual development. Correlations of premorbid aggressiveness and anxiety are weak and vague at time point 0. Extra-family relations are a more important prognostic factor than relations with siblings. They protect against apathy and abulia in a particularly significant way, however, they increase the chances of formal thought disorders and catatonia symptoms.

Table 2. **Value of premorbid psychological and relational indicators and clinical picture of the illness at time point 1**

	Basic mood	Emotional expression	Emotional attitude	Life drive	Intelligence	Psychosexual development	Aggressiveness	Anxiety	Relations with siblings	Extra-family relations
Autism 1	0.54***	0.47***	0.50***	0.20	0.03	-0.12	0.11	-0.01	-0.18	-0.43***
Apathy, abulia 1	0.35*	0.23	0.32*	0.10	-0.17	-0.10	0.27+	0.01	-0.21	-0.24
Symptoms of splitting 1	0.37*	0.31*	0.36*	0.01	0.04	-0.15	0.24	0.04	-0.12	-0.30+
Formal thought disorders 1	0.07	0.27+	0.15	-0.11	0.00	-0.12	0.30+	0.24	-0.29+	-0.19
Catatonia symptoms 1	0.11	0.19	0.11	0.08	-0.27+	0.11	0.23	-0.14	-0.09	-0.13
Hebephrenic symptoms 1	-0.21	-0.30+	-0.19	-0.03	-0.28+	-0.24	0.41**	0.32*	0.16	-0.09
Delusions 1	0.41**	0.41**	0.23	0.07	0.23	0.08	0.05	0.28+	-0.05	-0.22
Hallucinations 1	0.19	0.20	0.01	0.14	0.10	-0.22	0.00	0.13	-0.17	-0.10
Sum of schizophrenia symptoms 1	0.42**	0.39*	0.38*	0.10	-0.04	-0.17	0.27+	0.10	-0.20	-0.36*

Spearman's correlation coefficient:

+ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.005$

At time point 1, the positive correlations of premorbid sadness, secrecy and attitude of "moving away from" with autism become very clear. Correlations with apathy and abulia are also significant. Similar correlations with splitting symptoms and delusions, as well as with the psychopathology as a whole at time point 1 are also present. Some protective significance of the analyzed parameters against catatonia is dissipated, and catatonia is replaced by hebephrenia. Relationships are not statistically significant, but its different, contrasting position compared to other psychopathologies becomes quite clear. Correlations of weak life drive are similar to those of secrecy, withdrawal

and sadness but are weaker. Psychosexual development and the psychopathology of time point 1 correlate negatively almost without exception. On the contrary, premorbid aggressiveness has a positive effect, especially on hebephrenia. Also in the case of premorbid anxiety, the most vivid and positive correlation is observed with hebephrenia. Rich premorbid relationships protect against every kind of psychopathology at time point 1 except hebephrenia. There is an evident protective value of rich extra-family relations with respect to autism at time point 1. The significance of this parameter is also visible in relation to the psychopathology as a whole at time point 1.

Table 3. **Value of premorbid psychological and relational indicators and clinical picture of the illness at time point 2**

	Basic mood	Emotional expression	Emotional attitude	Life drive	Intelligence	Psychosexual development	Aggressiveness	Anxiety	Relations with siblings	Extra-family relations
Autism 2	0.37+	0.12	0.52*	0.26	-0.26	-0.49*	0.22	-0.06	-0.12	-0.49*
Apathy, abulia 2	0.47*	0.22	0.47*	0.30	-0.28	-0.16	0.06	-0.20	-0.01	-0.58**
Symptoms of splitting 2	0.14	-0.03	0.24	-0.25	-0.18	-0.40+	0.25	-0.04	0.26	-0.20
Formal thought disorders 2	0.08	0.14	0.23	0.00	-0.14	-0.45+	0.13	-0.16	0.08	-0.30
Catatonia symptoms 2	-0.12	0.08	-0.12	0.35	-0.50*	0.06	0.03	-0.53*	-0.16	0.01
Hebephrenic symptoms 2	0.17	0.16	0.28	0.05	-0.21	-0.47*	0.21	-0.11	0.11	-0.25
Delusions 2	0.05	-0.30	-0.20	-0.33	0.44*	-0.41+	0.12	0.28	-0.11	0.38+
Hallucinations 2	0.14	-0.08	0.14	0.15	0.04	-0.39+	0.46*	0.23	0.17	0.20
Sum of schizophrenia symptoms 2	0.25	0.10	0.28	0.13	-0.28	-0.34	0.21	-0.17	0.08	-0.29

Spearman's correlation coefficient:

+ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$

At time point 2, the correlations of four premorbid parameters: sadness, secrecy, withdrawal, and poor drive with the severity of psychopathology are still mainly positive. Exceptions mainly concern delusions, symptoms of splitting and catatonia, and do not reach statistical significance. The strongest impact connects premorbid attitude of "moving away from" with late autism, and apathy and abulia. Correlations of this parameter are also particularly pronounced in other types of psychopathology and in relation to psycho-

pathology as a whole at time point 2. Intelligence and normal psychosexual development turn out to have a protective effect on late psychopathology, with greater significance of sexual development. Intelligence has a clearly negative correlation especially with catatonia, which is a return (this time even stronger) to the trend already present at time point 0. On the other hand, intelligence has a clearly positive correlation with late delusions. Normal psychosexual development is a protective factor against virtually any type of late psychopathology. This is least visible in the case of apathy and abulia components, as well as catatonia, and most strongly in the case of autism and hebephrenia. While at time point 0 normal psychosexual development was the predictor having the strongest positive correlation with the level of psychopathology as a whole, it has the strongest negative correlation with this collective parameter at time point 2 ($p < 0.16$). The only predictor correlating positively with all parameters describing late psychopathology is premorbid aggressiveness. The only statistically significant of these correlations was the one regarding late hallucinations. It can be said that premorbid intelligence implies more late delusions, and premorbid aggressiveness implies more late hallucinations. Premorbid anxiety rather protects against distant psychopathology, excluding productive symptoms. The strongest negative correlation concerns catatonia. In the protective effect of premorbid relational life, a separation between sibling and extra-family relations is formed. The former lose their importance, while the latter maintain and even strengthen their importance in some areas. Exceptions are delusions and hallucinations – similarly as in the case of anxiety – and the strongest protective effect of the premorbid extra-family relational life concerns negative symptoms: autism, apathy and abulia.

Table 4 describes the relationships between the values of psychological and relational indicators relating to the premorbid life of the subjects and the effects of treatment during the first psychiatric hospitalization.

Table 4. **Value of premorbid psychological and relational indicators and effects of treatment at time point 0**

	Basic mood	Emotional expression	Emotional attitude	Life drive	Intelligence	Psychosexual development	Aggressiveness	Anxiety	Relations with siblings	Extra-family relations
Clinical improvement 0	-0.25*	-0.14	-0.32**	-0.24+	0.05	0.10	-0.05	0.08	0.00	0.29*
Insight 0	-0.22+	-0.17	-0.37***	-0.40***	0.28*	0.03	0.06	0.15	0.23+	0.29*
Relational abilities 0	-0.33**	-0.33**	-0.40***	-0.48***	0.20+	0.08	0.16	0.07	0.13	0.39***

Spearman's correlation coefficient:

+ p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.005

When it comes to the quality of clinical improvement and the level of insight and relational abilities at the end of the first hospitalization, there is a clear opposition between premorbid sadness, secrecy, withdrawal, and low life drive on the one hand and premorbid relational life on the other. The first group of factors correlates strongly negatively with the quality of clinical improvement, insight and ability to establish contact, with withdrawal and low life drive being the most important burden. Rich premorbid relationships, especially extra-family relations, act as a protective factor. Other predictors are less important, apart from intelligence, which positively affects the quality of insight and, to a slightly lesser extent, relational abilities.

Tables 5 and 6 describe the relationships between the values of psychological and relational indicators relating to the premorbid life of the subjects and certain parameters of the later course of the illness and its treatment. Correlations at time point 1 are listed below:

Table 5. **Value of premorbid psychological and relational indicators and certain indicators of the later course of the illness and its treatment at time point 1**

	Basic mood	Emotional expression	Emotional attitude	Life drive	Intelligence	Psychosexual development	Aggressiveness	Anxiety	Relations with siblings	Extra-family relations
Cognitive deficits 1	0.10	-0.08	0.11	0.28+	-0.37*	-0.01	0.08	-0.02	0.07	-0.09
Number of hospitalizations 1	-0.07	-0.08	-0.13	-0.18	0.05	-0.11	0.07	0.21+	0.17	-0.10
Days in hospital in total 1	0.05	0.04	0.03	-0.15	0.12	-0.23+	0.00	0.17	0.12	-0.19
Regression 1	0.24	0.29+	0.24	0.07	-0.08	-0.21	0.35*	0.01	-0.16	-0.30+
Insight 1	-0.30+	-0.43***	-0.39*	-0.36*	0.21	0.09	-0.02	0.14	0.28+	0.34*
Clinical improvement 1	-0.39*	-0.26+	-0.19	0.09	-0.06	0.14	-0.24	-0.13	0.13	0.13
Relational abilities 1	-0.29+	-0.30+	-0.39*	-0.17	0.02	0.28+	-0.17	-0.02	0.17	0.31*
Psychotherapy in follow-up 1	-0.01	-0.07	-0.16	0.05	0.17	-0.01	0.13	0.07	-0.22	0.13
GAF 1	-0.23	-0.21	-0.32*	-0.09	0.16	0.05	-0.13	0.11	-0.08	0.39**

Spearman's correlation coefficient:

+ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.005$

At time point 1, the strongest predictors are premorbid sadness, secrecy, withdrawal, and the strength of relational involvement outside the family. The most im-

portant areas of influence of these factors are insight, relational abilities and overall psychosocial functioning (GAF 1 score). In addition, premorbid sadness translates clearly and significantly into a weaker clinical improvement at time point 1. As far as other predictors are concerned, the negative correlation of weak life drive with the level of insight, the negative correlation of intelligence with cognitive deficits, and the positive correlation of premorbid aggressiveness with the level of regression at time point 1 are noted. Intelligence is the strongest protective factor against cognitive deficits at time point 1, while aggressiveness is the most positively correlated with the level of regression.

Here are the correlations at time point 2:

Table 6. **Value of premorbid psychological and relational indicators and certain indicators of the later course of the illness and its treatment at time point 2**

	Basic mood	Emotional expression	Emotional attitude	Life drive	Intelligence	Psychosexual development	Aggressiveness	Anxiety	Relations with siblings	Extra-family relations
Cognitive deficits 2	0.14	0.06	0.33	0.07	-0.32	-0.43+	0.10	-0.07	0.07	-0.36
Number of hospitalizations 2	-0.02	-0.06	-0.06	-0.16	0.03	-0.06	-0.02	0.29*	0.16	0.07
Days in hospital in total 2	0.05	0.05	0.07	-0.14	0.03	-0.18	-0.01	0.30*	0.08	-0.07
Regression 2	0.35	0.15	0.55**	0.29	-0.30	-0.50*	0.18	0.01	-0.12	-0.52*
Insight 2	-0.23	-0.16	-0.23	-0.21	0.26	0.29	-0.16	0.03	0.00	0.23
Relational abilities 2	-0.36	-0.12	-0.36	-0.22	0.15	0.45+	-0.20	-0.10	0.03	0.36

Spearman's correlation coefficient:

+ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$

At this stage, the three most important predictors are premorbid withdrawal, normal psychosexual development and extra-family relations. The premorbid attitude of "moving away from" correlates clearly positively with the level of late regression, and the correlation of rich extra-family relations is almost identical in strength but the opposite in direction. Similar correlations as that of extra-family relations with the level of late regression are observed for normal psychosexual development. It also shows the most positive correlations among all factors with quality of insight, relational abilities and severity of cognitive deficits. Estimating the strength of various correlations, it should be considered as the most important protective factor. Premorbid anxiety shows a positive correlation with the balance of hospital stays throughout the illness, both

in terms of frequency and length of stays. In fact, it is the only premorbid predictive factor which is important in this aspect.

Table 7 illustrates the relationships between the values of psychological and relational indicators of the premorbid life of the subjects and certain indicators of later social functioning.

Table 7. **Value of premorbid psychological and relational indicators and certain indicators of later social functioning**

	Basic mood	Emotional expression	Emotional attitude	Life drive	Intelligence	Psychosexual development	Aggressiveness	Anxiety	Relations with siblings	Extra-family relations
GAF 2	-0.24	-0.10	-0.49*	-0.13	0.31	0.39+	-0.30	-0.09	0.09	0.58***
Education 2	0.24+	0.31*	0.13	0.10	0.42***	-0.25+	-0.06	0.02	-0.20	-0.06
Professional life 2	-0.06	-0.10	-0.36*	-0.19	0.20	0.21	-0.21	-0.09	0.09	0.39***
Marriage 2	-0.27*	-0.14	-0.27*	-0.32**	0.06	0.11	0.11	-0.05	0.05	0.34**
Number of children 2	-0.06	-0.17	-0.30*	-0.18	-0.13	0.14	0.05	0.00	0.28+	0.27+
Death before time point 2	-0.05	0.00	-0.10	0.10	-0.11	-0.13	0.25*	0.10	-0.07	-0.02
Death before age of 50	0.11	0.05	-0.04	0.19	-0.04	-0.22	0.23	0.15	-0.26*	0.06

Spearman's correlation coefficient

+ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.005$

From the perspective of social functioning, it can be noticed that the most important correlations are revealed by the strength and depth of the premorbid involvement in extra-family relations. This parameter has a highly positive (one of the strongest correlations) effect on GAF 2 score and on the possibility of creating a marital bond and functioning at work. A positive correlation with the number of children is also visible. A similar correlation with the number of children is also found for the parameter of strong bonds with siblings. However, the significance of this parameter is particularly evident in the significantly negative correlation with the probability of premature death. The opposite is true for premorbid aggressiveness. This means a significantly lower chance of reaching seniority in the studied group. The protective influence of normal psychosexual development also in the spheres studied here turns out to be slightly greater than that of intelligence. The strongest influence of both these factors concerns the general level of functioning measured on the GAF scale. A separate is-

sue is the strong positive correlation of premorbid intelligence with the level of final education, which is hardly surprising. Somewhat surprising is the rather strong negative correlation with the level of education revealed by normal psychosexual development. As far as the other predictors are concerned, again, the premorbid attitude of "moving away from" seems to be the most important. It has a significantly negative impact on the GAF 2 level, on professional functioning, on the possibility of getting married, and on the number of children. None of the other predictors has so many significant correlations. Premorbid sadness and weak life drive mainly translate into a reduced possibility of creating a marital bond, with low life drive having a stronger impact. After years, emotional secrecy does not turn out to be an important predictor of social functioning, and in particular, it is not a negative predictor. This is because of its significant positive relationship with the level of education.

Discussion

The unfavorable prognostic value of the so-called premorbid personality understood as a combination of features of social withdrawal, secrecy, sadness, and low life drive has very strong support in the literature on schizophrenia [e.g., 14, 15]. It should be noted that EOS is perceived as a form of illness particularly often burdened with this risk factor, and many researchers agree that this is one of the main reasons for the poorer prognosis of EOS compared to adult schizophrenia [2]. In about 30% of EOS cases [16], which some researchers claim even up to 60% [17], there are premorbid withdrawal, deterioration in contact quality, reduced life drive, cognitive and social deficits. The analysis of correlations of such variables as "Basic mood", "Emotional expression", "Emotional attitude" and "Life drive" carried out in the present study confirms the thesis of the unfavorable prognostic significance of premorbid personality. In clinical terms, these variables translate into higher severity of psychopathology at time points 0, 1 and 2 (with particular emphasis on negative symptoms), as well as a weaker therapeutic effect of the first hospitalization and a lower level of insight and a deeper level of regression during the later life.

The strongest correlations were found for the premorbid attitude defined by Kępiński as the attitude of "moving away from" people and the world, which proves the accuracy and practical value of such an approach to the basic dilemma of a schizophrenic patient. An opposite significance for the prognosis can be attributed to having numerous and deep extra-family relations in the premorbid period. The importance of this factor is also significantly supported in the literature [e.g., 15, 18]. The positive correlation of this parameter with the quality of the respondents' distant social functioning, especially their professional life, was particularly striking. Thus, the quality of the premorbid relations with people and the world seems to be crucial for the prognosis of schizophrenia, and the illness process itself does not eliminate it but rather refers to it in some way. It is worth noting that the theoretical and methodological difficulties faced by the researcher trying to describe the relations between personality and ill-

ness process, as defined by Berner [19] and Häfner [20], remain valid. At the present stage of knowledge development, the distinction between the premorbid personality and prodromal syndrome seems to be particularly important [21]. The results of research indicate that the predictive value of premorbid intelligence is somewhat less unambiguous [22, 23]. However, our analyses allow us to conclude that it is likely to be a significant factor that correlates with lower severity of distant psychopathologies (especially catatonic) and a more favorable course of the illness in terms of insight, regression and level of secondary deficits.

The analysis of the correlation between normal premorbid psychosexual development and rapid, poorly inhibited premorbid aggressiveness allows (in reference to classical psychoanalytic conceptualization [24]) to put forward the thesis that schizophrenic psychopathology has less and less to do with libido and more and more with destrudo as the illness continues. It is worth noting that at time point 0 (i.e., at the level of the initial psychopathology), the picture is slightly different and may indicate an internal struggle within the schizophrenic patient's weak ego to resolve the psychotic conflict. At time point 1, the significance of aggressiveness is already much greater – it significantly correlates with the depth of regression, for example.

The predictive value of anxiety, which means the presence of traits, tendencies and symptoms of anxiety and neurosis in premorbid development, seems to be less significant compared to other parameters. It is, however, interesting that this factor was the only one that turned out to be significantly correlated with the balance of the number and length of psychiatric hospitalizations in the whole follow-up period. Presumably, the strong experience and expression of anxiety is an important factor influencing both the pursuit of hospitalization and the physician's decision to refer a patient to hospital.

Conclusions

1. The so-called premorbid personality, understood as a combination of the features of social withdrawal, secrecy, sadness, and low life drive, has a significant, unfavorable prognostic value in EOS both in the clinical and social area.
2. Rich extra-family relations in the premorbid period have a significant, beneficial prognostic value in EOS, especially in relation to the later social functioning of the subjects.
3. The harmonious development of sexual drive in the premorbid period and high intelligence seem to be predictors of a more beneficial prognosis in EOS, especially in the clinical aspect.
4. Increased anxiety tendencies and sensations in the premorbid period seem to correlate positively with the level of use of hospital care by future patients.

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