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 Kseniya N. Shvets*,
 Victor A. Ruzhenkov,
 Victoria V. Ruzhenkova,
 Natalia K. Rzhetskaya
 Konstantin Yu. Retyunsky

Social cognition and its influence on adaptation of people who suffered from the first psychotic episode of schizophrenia

Abstract

Relevance. Social cognition covers different fields that include a human ability to recognize and identify emotions, apperceive mental states and intentions, understand roles, rules and aims that are a base of social interaction. Disorder in these abilities of people diagnosed with schizophrenia may cause social dysfunctions. **Goal of research** is verification of social intelligence characteristics and social intelligence influence on adaptation of people diagnosed with schizophrenia suffered from the first psychotic episode in order to elaborate recommendations relating psychosocial treatment and rehabilitation. **Material and methods.** 145 patients suffered from the first psychotic episode at the age from 15 to 40 have been screened. Clinical and psychopathological, psychometric methods of research were applied (PSP and GAF Scales, PANSS, test «Social intelligence» by J. P. Guilford). **Results.** People diagnosed with schizophrenia suffered from the first psychotic episode by the time of the first hospitalizing had significant social maladjustment in their families and production sphere: 68.3% did not have families and 41.4% were homeless. Having suffered from the first psychotic episode, 37.7% of people got decreasing individual's social status. According to all the subtests of «social cognition» of J. P. Guilford all the representatives of the control group (mentally sane) left beyond those diagnosed with schizophrenia. Patients with a higher education and incomplete higher education were able to recognize nonverbal behavior (below average) in a greater degree. **Conclusion.** It is required to arrange a psychosocial training to improve understanding different aspects of nonverbal communication by people diagnosed with schizophrenia, that is what may help to increase social functioning level.

Key words: schizophrenia, social integration, social intelligence.

Kseniya N. Shvets*, Belgorod State University, Medical Institute, 301015, 85 Pobedy St., Belgorod, Russia
Victor A. Ruzhenkov, Belgorod State University, Medical Institute, 301015, 85 Pobedy St., Belgorod, Russia, E-mail: ruzhenkova@bsu.edu.ru
Victoria V. Ruzhenkova, Belgorod State University, Medical Institute, 301015, 85 Pobedy St., Belgorod, Russia
Natalia K. Rzhetskaya, Belgorod State University, Medical Institute, 301015, 85 Pobedy St., Belgorod, Russia
Konstantin Yu. Retyunsky, Belgorod State University, Medical Institute, 301015, 85 Pobedy St., Belgorod, Russia

Introduction

Patients diagnosed with schizophrenia are one of the most vulnerable group relating social integration (Figueira & Brissos, 2011). In this aspect psychopathologic processes plasticity in patients' social integration has a great role and keeping psychopathologic processes leads to better results of the conducted treatment (Dudley et al., 2013).

Social integration of people with schizophrenia (Galderisi et al., 2014) depends on many factors: patient age, gender, the age of incursion of disease, preclinical characteristics (Dewangan & Singh, 2018), duration of disease (Vita & Barlati, 2018). Dependence of social interaction on features of progression of the disease, its clinical implications, hospitalization frequency was also detected (Guedes et al., 2018). Early intervention during or before the first psychotic episode can improve response to antipsychotic treatment (Khamker, 2015).

At the moment patients suffered from the first psychotic episode are paid a higher attention (Torosyan & Bota, 2017) due to while the first year early misadaption preventive measures and keeping the reached level of social integration to a certain degree are possible (Shvets & Khamkaya 2019). In this aspect family support plays a big role due to it helps to overcome feelings of loneli Abreu, R., David, & Segura, 2016) ness (Lim et al., 2018; Abreu, et al, 2016).

Social cognition deficit is the predictor of social functioning defection in schizophrenia to some extent. Social cognition disorder adversely affects daily functioning, in particular social and professional adaptation of people diagnosed with schizophrenia (Gaudelus et al., 2016). More than that it becomes difficult to solve social problems, behave and perform in the society (Couture et al., 2006).

Goal of research is verification of social intelligence characteristics and social intelligence influence on adaptation of people diagnosed with schizophrenia suffered from the first psychotic episode in order to elaborate recommendations relating psychosocial treatment and rehabilitation.

Material and Methods

145 patients suffered from the first psychotic episode at the age 15 to 40 (27.4 ± 6.5), 68 (46.9%) men and 77 (53.1%) women have been screened. The patients with duration of disease up to 3 years and patients hospitalized to psychiatric hospital for the first time or for the second time in their life were included in the sample. To arrange a comparative examination of social intelligence the control group of people

that have never sought assistance from psychiatrist and formally considered as mentally sane people, with relevant age, gender and educational level – 70 people (34 men and 36 women) was taken.

The main methods were clinical and psychopathological, clinical dynamic, psychometric methods (PSP and GAF Scales, «Scale of Unawareness of Mental Disorder» (SUMD), test «Social intelligence» by J. P. Guilford). Statistical analysis of data base was made with nonparametric statistic methods by the means of application program Statistica 6.0.

Results and Discussion

Age specific analysis showed the majority of patients 79.3% were at age 21-40. Educational level of people diagnosed with schizophrenia was quite high – 46.2% people had a higher education and incomplete higher education (no gender differences).

Studying marital status of the patients showed that number of women that were married was significant ($\chi^2=7.815$ $p=0,006$ $OR=41$ $95\%CI=1.4-12.4$) and more than number of men that were married – 22 (28.6%) against 6 (8.8%). Odds ratio indicates that expectation of marriage before incursion of schizophrenia (or during first years of disease) for women is four times greater than for men. 99 patients (68.3%) did not have their own family, among them on a more frequent basis men ($\chi^2=12.972$ $p=0.001$ $OR=4,31$ $95\%CI=1.8-10.3$) – 57 (8.38%) patients, than women - 42 (54.5%) patients.

Number of patients used drugs was 34 (23.4%), it was more frequently ($\chi^2=4,761$ $p=0,029$ $OR=2.6$ $95\%CI=1.1-6.2$) males – 22 (32.4%), than females – 12 (15.6%). Odds ratio indicates that expectation of using drugs by people diagnosed with schizophrenia for a male before first psychotic episode is 2.6 times higher than for a female. Part of the people drank alcohol at the level of inebriety and alcohol addiction, here number of men – 19 (27.9%), it is more frequently ($\chi^2=7,486$ $p=0,007$ $OR=3.9$ $95\%CI=1,4-11,1$) than number of women - 7 (9.1%).

Verification of patients social standing showed that despite of high educational level only 9 (6.2%) people were self-employed entrepreneurs and 26 (17.9%) people were qualified workers. Considerable part of patients – 60 (41.4%) - were unemployed and 13 (9%) patients were disabled people with mental illnesses.

The clinical picture of leading psychopathologic syndrome during the period of the initial hospitalization (Table 1) was

represented mainly by paranoid hallucinatory delusional syndrome that consisted all together syndrome, paranoid syndrome and affective 88.3%.

Table 1.
Leading psychopathologic syndrome during the period of the initial hospitalization

Leading syndrome	Men		Women		Total	
	n	%	n	%	n	%
Paranoid hallucinatory	25	36.8	35	45.4	60	41.4
Paranoid	17	25.0	16	20.8	33	22.8
Affective delusional	18	26.5	17	22.1	35	24.1
Psychopathic	5	7.3	1	1.3	6	4.1
Neurosis-like	3	4.4	8	10.4	11	7.6
Total	68	100.0	77	100.0	145	100.0

Disease duration before the initial hospitalization consisted 1-3 (15±0,9) years. 29 (20%) people were hospitalized against their will.

When comparing the test Guilford results (table 2) between the patients diagnosed with schizophrenia suffered from the first psychotic episode and people from the control group it was identified that according to all subtests the

control group was beyond the patients with schizophrenia. It reveals that patients diagnosed with schizophrenia suffered from the first psychotic episode have a lower social intelligence level than sane people do. Patients diagnosed with schizophrenia find it difficult to analyze interpersonal interaction situations and as a result they adapt poorly to different kinds of relations between people.

Table 2.
Average value according to social intelligence scale subtests in the main and the control group

Test group	Test «Social intelligence» (points: M±SD)				
	Subtest №1	Subtest №2	Subtest №3	Subtest №4	Total points
Schizophrenic	3.0 ±2.96	3.0±2.34	2.0±1.48	2.0±1.42	12.0±6.66
Control group	8.0±3.00	8.0±2.29	4.0±2.89	4.0±2.14	25.0±7.19
U (Mann-Whitney test)	1309.0	968.0	2098.0	1294.0	799.0
p- level of significance	0.000	0.000	0.000	0.000	0.000

Verification of social intelligence level of the people with schizophrenia in gender related aspect (table 3) showed that men were

more successful in Subtest №1 and Subtest №4 as well as in the composition mark.

Table 3.
Social intelligence test results of people with the first psychotic episode of schizophrenia

Subtests	Men		Women		p=
	Me	Q ₂₅₋₇₅	Me	Q ₂₅₋₇₅	
Subtest №1	4.0	3.0-6.0	3.0	2.0-5.5	0.045
Subtest №2	3.0	2.0-5.0	3.0	2.0-6.0	0.193
Subtest №3	2.0	2.0-4.0	2.0	2.0-3.0	0.199
Subtest №4	3.0	2.0-3.0	2.0	2.0-3.0	0.034
Composition mark	12.0	10.0-19.0	10.5	8.0-17.0	0.011

Data of the table 3 indicates that despite of the low (below average) value of behavior results cognition factor, men are able to anticipate people actions and forecast a sequence of events being based on a real situation analysis better than women are (subtest №1). They are able to create their course of action more effectively. More than that they were able to analyze relations between people and understand their behavioral motives better.

To a certain extent (subtests №2 и №4) the patients with a higher education and an incomplete higher education have a higher ability to estimate nonverbal behavior (even though below the average) (table 4). They are able to interpret feelings and intentions of surrounding people, understand their gestures, facial gestures and postural pose meaning. Also to a certain degree a higher education allows them to analyze people

communication and understand their intrinsic behavioral motives.

Table 4.

Comparison of the social intelligence results depending on educational level (Mann-Whitney test)

№ n/n	Subtests	higher /incomplete higher		secondary /vocational secondary		p=
		Me	Q ₂₅₋₇₅	Me	Q ₂₅₋₇₅	
1	Subtest №1	4.0	3.0-5.0	3.0	2.0-6.0	0.482
2	Subtest №2	4.0	2.0-8.0	3.0	2.0-5.0	0.019
3	Subtest №3	2.0	2.0-4.0	2.0	2.0-3.0	0.149
4	Subtest №4	3.0	2.0-4.0	2.0	2.0-3.0	0.007
5	Composition mark	14.0	9.0-22.0	10.0	9.0-17.0	0.045

Comparative assessment of social intelligence of people diagnosed with schizophrenia who use drugs and do not use drugs (table 5) showed that the patients with drug addiction have a higher ability to anticipate people actions and forecast a sequence of events. This is due to the fact that drugs addiction is more peculiar to the patients diagnosed with schizophrenia prevalently with

affective disorder – i.e. the most favorably way of its proceeding and accordingly with less noticeable negative disorders and higher personal integrity. At the same time disturbances in behavior connected with using drugs leads to more significant social maladjustment than in cases when drugs were not used.

Table 5.

Comparison of the social intelligence results of people with the first psychotic episode of schizophrenia depending on using drugs (Mann-Whitney test)

Subtests	not using drugs		using drugs		p=
	Me	Q ₂₅₋₇₅	Me	Q ₂₅₋₇₅	
Subtest №1	3.0	2.0-5.0	4.5	3.0-9.0	0.001
Subtest №2	3.0	2.0-6.0	3.5	2.0-5.0	0.531
Subtest №3	2.0	2.0-4.0	2.0	2.0-5.0	0.243
Subtest №4	2.0	2.0-3.0	3.0	2.0-3.0	0.180
Composition mark	11.5	8.0-17.0	13.0	10.0-21.0	0.031

Estimate of social integration level according to the GAF Scale (table 6) indicated

that females had significantly more satisfactory level – 72.7%, than males – 51.5%.

Table 6.

Results of GAF Scale

Social integration level	Men		Women		χ^2	p=
	n	%	n	%		
Satisfactory	35	51.5	56	72.7	6.102	0.014
Low	33	48.5	21	27.3		
Total	68	100.0	77	100.0		

Odds ratio (OR=2.5 95%CI=1.2-5.3) indicated that expectation to have a satisfactory level of social integration for females suffered from the first psychotic episode is 2.5 times higher than for males. This is due to the fact that partially males have a higher alcohol and drugs addiction.

Factor analysis of results of tests used for verification of social integration level allowed to identify 3 significant factors (table 7)

clarifying 62.9% dispersion. The most significant factors of social integration of people diagnosed with schizophrenia suffered from the first psychotic episode are physical working capacity, socially useful activity (including within the nearest micro-social surrounding) and also socially adaptation behavior and peaceful behavior (administrative and legal fields).

Table 7.
Results of factor analysis of social integration tests
(GAF, PSP, Visual analogue scale)

Factor	Components	r=	characteristic value	% dispersion
Physical working capacity	Physical working capacity	0.814	5.5	39.6
Socially useful activity	Socially useful activity (PSP)	0.929	2.2	15.5
	GAF Scale	.828		
	Relation with people close to them (PSP)	.909		
Peaceful behavior	Administrative and legal fields	0.812	1.1	7.8

Correlation analysis of Gilford Scales and PANSS is presented in the table 8.

It was indicated that positive symptoms (thought disorder, suspicion, animosity) have a negative effect on patient ability to analyze reality situation of communication, to interpret feelings and intentions of communication parties foremost within their family. Weak correlation with negative

symptoms (stereotyped thinking and difficulties in communication) is also detected (subtest №1). It leads to the situation when they poorly interpret nonverbal communication and are not able to match it with verbal communication. Ideas of grandeur are negatively correlated with ability to catch verbal messages of other people and match them with background and character of relations.

Table 8.
Correlational interconnections of social intelligence and schizophrenia symptoms (according to PANSS) at the time of hospital discharge

Symptoms	Test «Social intelligence»									
	Subtest №1		Subtest №2		Subtest №3		Subtest №4		Total points	
	r=	p=	r=	p=	r=	p=	r=	p=	r=	p=
Positive scale										
Conceptual disorganization	-0.228	0.019	-0.388	0.000	-0.144	0.142	-0.091	0.355	-0.316	0.001
Grandiosity	-0.014	0.887	0.133	0.174	-0.223	0.022	-0.110	0.262	0.053	0.589
Suspiciousness/persecution	-0.223	0.022	-0.068	0.492	-0.175	0.072	0.046	0.640	-0.154	0.115
Hostility	-0.285	0.003	-0.225	0.021	-0.097	0.321	-0.059	0.550	-0.264	0.006
Σ Positive scale	-0.325	0.001	-0.270	0.005	-0.261	0.007	-0.045	0.644	-0.307	0.001
Negative scale										
Blunted affect	-0.179	0.067	-0.200	0.040	-0.209	0.031	-0.163	0.094	-0.205	0.035
Emotional withdrawal	-0.003	0.977	-0.200	0.040	-0.076	0.438	-0.270	0.005	-0.183	0.061
Poor rapport	-0.207	0.033	-0.301	0.002	-0.313	0.001	-0.303	0.002	-0.353	0.000
Passive/apathetic social withdrawal	-0.068	0.487	-0.199	0.040	-0.079	0.419	-0.188	0.053	-0.196	0.044
Difficulty in abstract thinking	-0.104	0.289	-0.335	0.000	-0.023	0.814	-0.037	0.707	-0.173	0.075
Lack of spontaneity & flow of conversation	-0.094	0.340	-0.255	0.008	-0.103	0.294	-0.287	0.003	-0.254	0.009
Stereotyped thinking	-0.265	0.006	-0.329	0.001	-0.075	0.447	-0.022	0.819	-0.259	0.007
Σ Negative scale	-0.115	0.240	-0.274	0.004	-0.165	0.091	-0.235	0.015	-0.249	0.010
General Psychopathology scale										
Somatic concern	-0.221	0.023	-0.199	0.041	-0.102	0.299	-0.044	0.658	-0.223	0.022
Anxiety	-0.060	0.541	0.076	0.439	-0.142	0.148	-0.186	0.056	-0.066	0.500
Guilt feelings	-0.099	0.313	0.076	0.438	-0.129	0.188	-0.111	0.258	-0.004	0.970
Tension	0.047	0.632	0.147	0.133	0.000	0.998	-0.018	0.852	0.107	0.275
Mannerisms and posturing	-0.339	0.000	-0.001	0.994	-0.253	0.009	0.278	0.004	-0.075	0.448
Depression	-0.172	0.077	-0.294	0.002	-0.134	0.171	0.054	0.580	-0.224	0.021
Motor retardation	-0.119	0.224	-0.111	0.256	-0.160	0.102	-0.030	0.759	-0.106	0.279
Uncooperativeness	-0.279	0.004	-0.143	0.144	-0.126	0.198	-0.014	0.889	-0.186	0.056
Unusual thought content	-0.293	0.002	-0.240	0.013	-0.088	0.368	-0.094	0.337	-0.282	0.003
Disorientation	0.090	0.359	-0.010	0.922	0.014	0.889	0.091	0.356	0.065	0.505
Poor attention	-0.083	0.396	-0.313	0.001	-0.170	0.081	-0.072	0.462	-0.205	0.035
Lack of judgment and insight	-0.109	0.266	-0.060	0.542	-0.058	0.553	-0.123	0.211	-0.034	0.726
Disturbance of volition	0.011	0.910	-0.109	0.264	-0.204	0.036	-0.177	0.070	-0.118	0.230
Poor impulse control	-0.198	0.042	-0.210	0.031	-0.208	0.032	-0.164	0.093	-0.270	0.005
Preoccupation	0.162	0.098	0.127	0.195	0.095	0.334	0.040	0.685	0.119	0.223
Active social avoidance	-0.171	0.080	-0.230	0.018	-0.172	0.078	-0.322	0.001	-0.331	0.001
Σ General Psychopathology scale	-0.223	0.022	-0.168	0.086	-0.301	0.002	-0.160	0.101	-0.223	0.021
Accident symptom										
Difficulties in delay of gratification	0.234	0.016	0.243	0.012	0.071	0.466	-0.069	0.485	0.165	0.090
Affect lability	-0.193	0.047	-0.093	0.341	-0.207	0.033	0.031	0.752	-0.089	0.367

All negative symptoms are negatively correlated with the subtest №2. In other words the more negative symptoms are expressed the less the patients are able to understand body language, gestures, facial gestures, and the more they are oriented on a content of speaking. As a result they can interpret not quite correctly the sense of other person speaking and find it difficult to be capable of empathy and self-reflection.

Conclusion

People diagnosed with schizophrenia suffered from the first psychotic episode have a significant social maladjustment in family and production spheres: only 28.5% of women and 8.8% of men were married and 68.3% of patients did not have their own families. A great part of people was unemployed. The level of social status of 31.7% of patients suffered from the first psychotic episode has been decreased.

According to all the tests by J. P. Guilford the representatives of the control group (mentally sane) left behind the people with schizophrenia. Psychological and social counseling is required to be performed for improving the ability to interpret the different aspects of nonverbal communication by people diagnosed with schizophrenia, so it could lead to increasing a social functioning level.

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