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ABSTRACT – *Objective*: Self-perception is a complex, dynamic system and sexual self-perception is only one of the items in that complex system. Our goal was to establish whether the differences in sexual self-perception between schizophrenic patients and healthy individuals exist, and to establish possible differences in sexual self-perception between acute and chronic schizophrenic patients.

Method: Bezinovic's test for sexual self-perception was used because it assesses multiple aspects of sexual self-perception and provides thorough insight of that part of self.

*Results:*Results revealed that schizophrenic patients, compared to healthy individuals, scored significantly higher on the aspects of negative emotionality and sexual incompetence and significantly lower on the aspect of sexual satisfaction. No statistically significant differences were established between acute and chronic schizophrenic patients.

Conclusions: It can be concluded that the conscious part of libido organization in schizophrenic patients exhibits proper consciousness of own sexuality, normal readiness for sexual activity, normal sexual adventurism, significantly higher negative emotionality and sexual incompetence and significantly lower sexual satisfaction.

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Introduction

Instincts have a strong impact on the human psyche and their fulfillment results in relief of internal tension. They belong to our inner, unconscious (Id) world and there is no "escape" from them. The source of our instincts is unclear and their goal is always the same – fulfillment or elimination of the stimuli. Since impulses do not belong to the realm of reality, they do not obey the laws of time, logic and causality. Their destiny is to be fulfilled, kept in the unconscious, or turned into their opposite. Ego and superego determine

their destiny[1]. Sexual drive is one of the strongest drives[1] and sexuality, in a way, determines our lives – our behavior and general adaptability[2-4]. During our development and development of self-perception (self) our relationship towards sexuality, as well as our comprehension of it, is shaped and we change the ways we perceive and value ourselves[4].

Contemporary interpretations represent self-perception as a complex, dynamic system that is reflected in our behavior and it mediates our behavior[5]. Sexual self-perception is only one of the items of that complex system (self). Aspects of sexuality have mostly been researched among healthy individuals[2,6-9]. Scientific papers that deal with this issue in mentally ill patients are very few and far between, those that do exist mostly concentrate on sexual side effects often caused by psychopharmacological drugs[10-16]. As a result of research among healthy individuals, instruments have been devised in order to measure sexual self-scheme and other aspects of sexual self-perception (consciousness of one's sexuality, readiness for sexual activity, sexual adventurism, negative emotionality, sexual incompetence and sexual satisfaction)[17]. We used those instruments to analyze the differences in certain aspects of sexual self-perception among acute and chronic schizophrenic patients and compared them with control group of healthy individuals.

Schizophrenia is a severe mental illness that often causes changes in the personality and therefore certain aspects of sexual self-perception significantly differ between schizophrenic patients and healthy individuals[18-21].

Scientific research mainly focused on the analysis of psychological characteristics of patients diagnosed with some kind of sexual dysfunction[22-26]. Until now, no scientific research analyzed various aspects of sexual self-perception among schizophrenic patients.

This research is the first complete analysis of sexual self-perception in patients suffering from schizophrenia. Existing research findings are mainly analyses of sexuality among patients suffering from certain mental illnesses[27,28] and analyses of sexual dysfunction incidence caused by certain psychotropic medications[10-16]. Therefore our goal was to establish the existence of differences in sexual self-perception between schizophrenic patients and healthy individuals, and to establish possible differences in sexual self-perception between acute and chronic schizophrenic patients.

Patients and methods

This research included 200 schizophrenic patients in stable phase of the disease, treated at the Psychiatric Clinic, Clinical Hospital Centre Rijeka in a two year period. 100 of them were with one acute schizophrenic episode (G1) and 100 of them were chronic schizophrenic patients (G2). Patients from the G1 group were treated for the first time with antipsychotic medication and G2 group patients have been treated with antipsychotic medication for at least 10 years. Patients were from 18 to 45 years of age. Control group consisted of 100 healthy volunteers (C), age and gender matched to the research groups. Exclusion criteria for this group were: 1 Psychically healthy and 2 No history of sexual dysfunctions.

Perceived statistical baseline differences between G1, G2 and C groups were regarding age and gender. G2 group was found to be statistically significant older than G1 and C groups (G2 : G1 = 37.07 ± 6.32 : 30.07 ± 8.24; G2 : C = 37.07 ± 6.32 : 29.25 ± 7.73), but it is obvious to see that all the participants in this research were in their reproductive

age. Furthermore, group C consisted of more females than males and that is not the case with G1 and G2 groups (N = 59 : 39 : 38).

There were no differences regarding the use of typical and atypical antipsychotics, most of the patients were treated with typical antipsychotics (81% of the G1 group and 84% of the G2 group) and 41% of the G2 group patients were treated with atypical antipsychotics, as was 66% of patients from the G2 group.

This research has been approved by the Ethics committee of Rijeka Medical Faculty. All participants included in the research were informed about the various types of testing used in this research and have signed their written informed consent. Also, all the items of the questionnaire used were clarified to participants prior to filling it, in order to avoid any unclear issues.

Inclusion criterion for schizophrenic patients was schizophrenia diagnosed according to the criteria of DSM-IV[29]. Criteria for exclusion of schizophrenic patients from the research: schizophrenic patients with dominating sexual delusional ideas and those who have already been diagnosed with a sexual dysfunction before the onset of schizophrenia.

Questionnaire for sexual self-perception created by Bezinovic[17] was used to investigate seven aspects of sexual self-perception. It consists of 57 items that are relevant to seven aspects of sexual self-perception (sexual self-scheme, sexual consciousness, sexual readiness, sexual adventurism, negative emotionality, sexual incompetence and sexual satisfaction).

Limitations of the research are: a) patients' willingness to speak about and express his sexuality, and because of that fact all of the patients did not complete the Bezinovic's questionnaire for sexual self-perception; b) sample size is seemingly small, but if we take into consideration the significance of analyzing schizophrenia locally (Primorsko-goranska region of Croatia) sample size is representative.

Statistical data analysis

SPSS computer program was used for statistical analysis of the research data[30]. Cronbach-alpha test was used to establish the reliability of the measurements on all scales of sexual self-perception.

Reliability of internal consistence (*Cronbach-alpha*) was examined for all seven scales of sexual self-perception (sexual self-scheme – 12 statements; *Cronbach-alpha* 0.83, sexual consciousness – 6 statements; *Cronbach-alpha* 0.74, sexual readiness – 3 statements; *Cronbach-alpha* 0.78, sexual adventurism – 9 statements; *Cronbach-alpha* 0.82, negative emotionality – 12 statements; *Cronbach-alpha* 0.89, sexual incompetence – 10 statements; *Cronbach-alpha* 0.90 and sexual satisfaction – 5 statements; *Cronbach-alpha* 0.90).

One-way analysis of the variances was used to test the differences among the three groups (G1, G2, C) of participants, regarding aspects of sexual self-perception. Subsequent analysis of differences between the groups of participants was performed using the *Newman-Keuls test*. Statistically significant differences between particular variables were tested by *Student-t test*.

Results

Results of the comparison between acute and chronic schizophrenic patients and their age and gender matched control group revealed significant differences in three out of

seven aspects of sexual self-perception. Acute and chronic schizophrenic patients scored significantly higher ($p < 0.05$) then their healthy counterparts on the scale of "negative emotionality", which consists of 12 items of Bezinovic's test[17] for sexual self-perception (Table I). Significantly higher negative emotionality in schizophrenic patients raised out of the experience of one's sexual inadequateness, abandonment and isolation. Fear of performing inadequately during sexual intercourse is a significant factor and results in considerable distress while trying to accomplish a sexual relationship. That fear comprises of fear that one will say or do something wrong during sexual intercourse and of fear of partner's rejection. Our subjects spend too much time thinking about what their partner thinks of them. All the points mentioned above result in giving up on sexual relationships even before they begin and it is not surprising that schizophrenic patients are significantly less satisfied with their sexual life compared to healthy controls. The fact that we found no significant differences between acute and chronic schizophrenic patients suggests that high negative emotionality is not a result of long-lasting illness or lengthy taking of antipsychotic medication but phenotypic characteristics of schizophrenia.

Acute and chronic schizophrenic patients score significantly higher ($p < 0.05$) then their healthy counterparts on the scale of "perception of sexual incompetence", which consists of 10 items of Bezinovic's test[17] for sexual self-perception (Table I). Significantly higher perception of sexual incompetence among schizophrenic patients is a result of their feeling of being sexually worthless. Past failures in forming sexual relationships produce doubts in future success and those doubts are only being worsened by one's insecurity in one's sexual skills, by feeling incapable of accomplishing successful sexual relationships and by constant reassessing of one's sexual motives. Consequently, schizophrenic patients feel that they are partly or completely sexually worthless and unsuccessful. Statistically significant difference regarding perception of sexual incompetence between acute and chronic schizophrenic patients has not been registered.

Acute and chronic schizophrenic patients score significantly lower ($p < 0.05$) then their healthy counterparts on the scale of "sexual satisfaction", which consists of 5 items of Bezinovic's test[17] for sexual self-perception (Table I). Significantly lower levels of sexual satisfaction among schizophrenic patients stem out of dissatisfaction with their sexual lives. That kind of dissatisfaction is a result of being in a sexual relationship which does not produce sexual satisfaction. Therefore, schizophrenic patients deem that they are not as sexually happy as other people. Statistically significant difference regarding sexual satisfaction between acute and chronic schizophrenic patients has not been registered.

There were no statistically significant differences between G1 and G2 groups regarding the aspects of sexual self-perception in relation to treatment with typical antipsychotics (results not shown).

No statistically significant differences were observed in G1 group regarding the aspects of sexual self-perception in relation to treatment with atypical antipsychotics. G2 group patients were treated with atypical antipsychotics significantly more than G1 group patients. In G2 group we established significantly higher sexual adventurism and altered sexual self-scheme in those patients that were treated with atypical antipsychotics compared to G2 patients that have not been treated with atypical antipsychotics (Table II).

Table I
Sexual self-perception differences between acute (G1) and chronic (G2) schizophrenic patients and healthy individuals (C)

Aspects of sexual self-perception	N			$\bar{x} \pm SD$ *			ANOVA **					Post-hoc (LSD test)***
	1.G1	2.G2	3.C	1.G1	2.G2	3. C		Df	Mean square	F	p	
Sexual self-scheme	100	100	100	598.63 ± 239.47	633.35 ± 267.09	660.66 ± 204.75	Between groups	2	96650.590	1.72	p = 0.182	1 = 2 = 3
							Within groups	297	56329.887			
							Total	299				
Sexual consciousness	100	100	100	279.09 ± 140.12	289.11 ± 156.70	261.68 ± 98.16	Between groups	2	19265.223	1.06	p = 0.347	1 = 2 = 3
							Within groups	297	18147.885			
							Total	299				
Sexual readiness	100	100	100	122.77 ± 92.00	125.68 ± 94.39	112.74 ± 85.92	Between groups	2	4608.543	0.56	p = 0.573	1 = 2 = 3
							Within groups	297	8252.204			
							Total	299				
Sexual adventurism	100	100	100	184.53 ± 169.74	202.68 ± 200.35	144.61 ± 149.85	Between groups	2	88252.563	2.90	p = 0.057	2 > 3
							Within groups	297	30469.57			
							Total	299				
Negative emotionality	100	100	100	474.69 ± 276.95	505.08 ± 286.75	224.61 ± 179.25	Between groups	2	2368782.990	37.19	p < 0.001	1. 2 > 3
							Within groups	297	63687.248			
							Total	299				
Sexual incompetence	100	100	100	375.30 ± 238.03	406.71 ± 254.60	152.97 ± 147.04	Between groups	2	1913353.410	40.11	p < 0.001	1. 2 > 3
							Within groups	297	47701.200			
							Total	299				
Sexual satisfaction	100	100	100	266.82 ± 141.95	223.77 ± 162.63	356.07 ± 127.08	Between groups	2	570302.583	27.27	p < 0.001	3 > 1. 2
							Within groups	297	20915.013			
							Total	299				

* Results shown as $\bar{x} \pm SD$ of the total score on the scale for sexual self-perception.
** One-way analysis of variances was used to test the differences between the three groups of participants.
*** Subsequent testing of significance of differences ($p < 0.05$) between the three groups of participants (post-hoc tests) was performed using LSD test.

Table II
The value of points shown by arithmetic means and standard deviation for the seven aspects of sexual self-perception and treatment with/without atypical antipsychotic medication in chronic schizophrenic patients, with statistical significance

Aspects of sexual self-perception	Chronic schizophrenic patients				
	Atypical antipsychotics		Without atypical antipsychotics		
	Arithmetic means	Standard deviation	Arithmetic means	Standard deviation	Statistical significance*
Sexual self-scheme	720.21	268.46	588.61	257.07	**p = 0.019**
Sexual consciousness	316.44	165.95	275.03	154.18	p = 0.218
Sexual readiness	140.24	95.78	118.18	93.52	p = 0.271
Sexual adventurism	260.82	234.25	172.73	174.93	**p = 0.037**
Negative emotionality	567.74	260.22	472.80	296.22	p = 0.117
Sexual incompetence	447.82	227.90	385.53	266.50	p = 0.248
Sexual satisfaction	246.56	158.10	212.03	164.86	p = 0.317

* t-test

Discussion

Shalvelson and associates have described a structured model of self-perception[31]. In their model, self-perception is defined as one's perception of himself/herself, created upon the experience of the surrounding environment and interpretation of that environment. There are seven basic characteristics of self-perception: 1) It is organized and structured, meaning that an individual can place information about himself/herself in certain categories, and those categories can be linked among themselves; 2) It has multiple aspects; 3) Its organization is hierarchic; 4) Global and general idea about oneself is stable; 5) The structure of self-perception becomes more complex, serving a developmental function from childhood to maturity; 6) Self-perception is both descriptive and assessable, which allows the individual to describe and evaluate himself/herself; 7) Self-perception can be distinguished from achieved accomplishments during one's lifetime. Self-perception is obviously an extremely complicated issue and very difficult to investigate. However, its multiple aspects provide us the possibility of isolating and analyzing each aspect separately. Due to the fact that the aspect of sexual self-perception has been analyzed so rarely, especially among mentally ill, our goal was to analyze differences regarding sexual self-perception between acute and chronic schizophrenic patients and compare them to the control group of healthy volunteers. We have decided to use Bezinovic's test for sexual self-perception[17] because it assesses multiple aspects of sexual self-perception and provides thorough insight in that part of self and sexual self-scheme.

Due to very small number of previous research on sexual-self perception in schizophrenic patients, it is hard to discuss the character of sexual behavior of chronic schizophrenic patients as well as of those

suffering from the first attack of the disease. Patients suffering from chronic mental illnesses manifest high incidence of sexual dysfunctions[32,33]. There are several factors which might be associated with sexual disturbances in patients suffering from severe psychic disorders, like schizophrenia: biological factors, such as functional and structural dysfunctions of certain brain regions which mediate sexual behavior; psychological factors; weak social functioning and side- effects of antipsychotic medication[11-13,34,35]. Patients suffering from schizophrenia have impaired ability to maintain stable, meaningful relationships because they often lack psychosocial and psychosexual skills essential for establishing such relationships. Also, various side-effects of psychotropic medication often have negative effects on sexual functioning. Therefore it is not surprising that those patients exhibit high levels of sexual dysfunctions[35]. Disturbed sexual functions affect the perception of self and can obstruct further personality development or hinder intentions of finding a sexual partner[36].

Results of this research point towards significant differences in sexual self-perception among schizophrenic patients. With respect to theoretical knowledge about self-perception[31] it is obvious that schizophrenic patients have altered sexual self-perception because they significantly differ from healthy individuals in terms of the experience of surrounding environment and personal interpretation of the environment. In fact, out of 7 aspects of sexual self-perception (sexual self-scheme, consciousness of one's sexuality, readiness for sexual activity, sexual adventurism, negative emotionality, sexual incompetence and sexual satisfaction), schizophrenic patients have displayed significant discrepancy compared to healthy individuals regarding three aspects of sexual self-perception: significantly higher negative emotionality (Table I); significantly higher sexual incompetence (Table I) and significantly lower sexual satisfaction (Table I). That suggests that schizophrenic patients do not have distorted sexual self-scheme, that they have proper consciousness of their own sexuality, preserved readiness for sexual activity and normal sexual adventurism.

While analyzing items from Bezinovic's scale of "negative emotionality"[17] we have come to conclusion that significantly higher negative emotionality in sexual self-perception of schizophrenic patients emerges from the experience of one's sexual incompetence, abandonment and isolation. Schizophrenic patients obviously have high levels of negative emotions associated with the "fear of performing inadequately during sexual intercourse" and that results in considerable distress while attempting a sexual relationship. Apart from the fear of performing inadequately, negative emotionality is stimulated by the fear that one will say or do something wrong during sexual intercourse and by the fear of partner's rejection. All of that results in giving up on sexual relationships even before they begin, and it is not surprising that schizophrenic patients are significantly less satisfied with their sexual life compared to other people. If sexuality is related to emotions, and emotions are one of the leading psychic functions that are always affected by schizophrenia, then negative emotions in schizophrenic patients leading to dysfunctional sexual processes is en expected course of events. On the other hand, in healthy individuals, negative emotions block sexual processes to a much lesser extent[17]. Apart from expressing negative emotions, schizophrenia leads to social withdrawal which additionally emphasizes emotional coldness of people suffering from

schizophrenia, thus becoming impossible for their families to establish emotional contacts with them. Failure to grasp reality leads to an even greater emotional blockade in people suffering from schizophrenia[21]. Furthermore, affective ambivalence, because of existing opposite emotions directed towards a specific object (love and hate, desire and rejection at the same time) hinders the establishment of contacts, especially contacts of sexual nature and endorses the fact that people suffering from schizophrenia exhibit less sexual satisfaction then healthy individuals[37].

Analyzing items from the scale of "perception of sexual incompetence" of Bezinovic's test for sexual self-perception[17], significantly higher perception of sexual incompetence among schizophrenic patients, whether acute or chronic (Table II) is a result of their feeling of sexual worthlessness. Negative connotations associated with previous sexual experiences produce doubts in future success. Insecurity in one's sexual skills, thoughts about the inability of realizing worthy sexual relationships and constant reassessing of one's sexual motives induce doubts in future sexual success. It finally leads to a feeling of low self worth or even complete sexual worthlessness and unsuccessfulness. This can also be related to low self esteem, as it is known that people who have recovered from psychosis develop depression, which is a direct cause of low self esteem[38].

Analyzing the items from the scale of "sexual satisfaction" of Bezinovic's test for sexual self-perception[17], we can conclude that significantly lower sexual satisfaction among schizophrenic patients is a consequence of unhappiness with their sexual relationship. As a result of that, schizophrenic patients are not as sexually happy as healthy individuals are.

The fact that there were no significant differences between acute and chronic schizophrenic patients regarding negative emotionality, perception of sexual incompetence and sexual satisfaction suggests that high negative emotionality and perception of sexual incompetence, as well as low sexual satisfaction are not results of a long-lasting illness or lengthy taking of antipsychotic medication but possibly phenotypic characteristics of schizophrenia. We have shown that antipsychotic medication has a significant influence on sexual adventurism and altered sexual self-scheme, but it has no influence on negative emotionality, sexual satisfaction and perception of sexual incompetence (Table II). Therefore results of these three aspects of sexual self-perception can be linked to schizophrenia, regardless of the duration of the illness itself or the duration of antipsychotic therapy. Sigmund Freud's definition of libido[4] suggests that schizophrenic patients remain fixated on the oral stage of libido development (autoerotic), and our results show that on the conscious level of libido organization, in schizophrenic patients, consciousness of one's sexuality is preserved, as well as readiness for sexual activity and sexual adventurism. However, negative emotionality is significantly higher, while sexual incompetence and sexual satisfaction are significantly lower.

Conclusion

On the conscious level of libido organization in schizophrenic patients, consciousness of one's sexuality is preserved, as well as readiness for sexual activity and sexual adventurism. However, negative emotionality is significantly higher, while sexual incompetence and sexual satisfaction are signifi-

cantly lower. No significant differences between acute and chronic schizophrenic patients regarding negative emotionality, perception of sexual incompetence and sexual satisfaction suggests that high negative emotionality and perception of sexual incompetence, as well as low sexual satisfaction are not results of long-lasting illness or lengthy taking of antipsychotic medication but phenotypic characteristics of schizophrenia.

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