Archives of Psychiatry and Psychotherapy, 2010; 3 : 47–55

# Prevalence of subjectively assessed symptoms of sexual disorders in schizophrenia. Preliminary report.

Andrzej Kokoszka, Mona Abd El Aal, Aleksandra Jodko, Agnieszka Kwiatkowska

**Summary**

**Aim**. Assessment of the frequency of subjectively assessed symptoms of sexual dysfunctions and sexual disorders in patients with schizophrenia in comparison with general population results.
**Method**. The study was anonymous and was conducted on a group of 56 persons with schizophrenia – patients of psychiatric hospital day-wards. A Sexological Questionnaire was used, which was based on the ICD-10 criteria. The questions contained, concern subjective perception of the occurrence of symptoms within the last 6 months.
**Results**. The symptoms of at least one dysfunction were reported by 93% patients (96% of women and 90% of men), symptoms of at least one disorder of sexual preference by 53.6% patients (36% of women and 71% of men). Symptoms of at least one sexual dysfunction or disorders of sexual preference were confirmed by 96.4% of the patients, most of whom reported signs of numerous conditions. The results achieved on frequencies in the study, were significantly higher than the ones in the "Report on sexuality of Poles" done in 2002. Symptoms characteristic for gender identity disorders were declared by 5 patients (9%). Almost 20% of the persons admitted to a constant attraction towards the same sex, whilst 10.6% do not accept their homosexual orientation; 17.8% reported having doubts about their sexual orientation.
**Conclusion**. The obtained results point to a need of further studies with resembling methodology, on a more representative and larger group of people with schizophrenia. Confirmation of the data gathered in the pilot study would imply a necessity of introducing effective methods of evaluating sexual problems within a routine diagnostic and therapeutic proceedings. The presented results suggest that every patient with schizophrenia requires a discussion about sexual dysfunctions and disorders, as well as therapeutic actions in case of their prevalence.

**sexual dysfunctions / sexual disorders / schizophrenia**

## INTRODUCTION

Schizophrenia is a disease present in 1% of the adult population. Various aspect of the disease have been described in numerous scientific reports and researches. Sexuality and sexual disorders among patients suffering from schizophrenia still remain a rare subject.

Until the 1970's some psychiatrists believed that sexual activity could have an influence on schizophrenia development [1]. Reports from the 1970's additionally suggest that people with a diagnosed schizophrenia engage less in any form of sexual activities [2], and when such engagement occurs, their partners perceive and assess them as weakly communicating and playing their role in a primitive way [3]. Therapists asked about sexuality of their patients with

**Andrzej Kokoszka[1], Mona Abd El Aal[2], Aleksandra Jodko[2], Agnieszka Kwiatkowska[3]**: [1]II Department of Psychiatry, Medical University of Warsaw, Poland; [2]Warsaw School of Social Sciences and Humanities, Poland; [3]Nowowiejski Hospital, Psychotherapy Center, Poland. Correspondence address: Andrzej Kokoszka, II Department of Psychiatry, Medical University of Warsaw, 8 Kondratowicza St., 03-242, Warszawa, Poland. E-mail: andrzej.kokoszka@wum.edu.pl

The research was done as part of the programme in the statutory action of the II Department of Psychiatry, Medical University of Warsaw.

schizophrenia, thought that their patients cannot cope with their sexuality and discussing this issue can, not only trigger undesired behaviour, but also slow down their recovery [4].

Sexual activity nowadays is not seen as a reason of psychosis – currently conducted researches dispel many myths, nevertheless not much is known about sexual functioning of people with diagnosed schizophrenia. According to Buddeberg and collaborators [5] for 80% of patients, sexuality and its disorders are a crucial element of life. Causes of sexual disorders in a group of people with a diagnosed schizophrenia are complex, the illness itself has and undoubted influence – its chronicity, as well as symptoms and treatment.

Baggaley [6] reports that not systematic researches carried for a long time have shown that sexual disorders dissemination among suffering of schizophrenia, both in treated patients and not treated is high and concerns about 30-80% women and about 45-80% men. It is also higher than sexual dysfunctions among patients treated for other mental disorders. Results of researches show that lack of interest in initiating sexual contacts among mentally ill men, even in a period before a psychosis, is more frequent than in a healthy men group [7]; and that according to people with diagnosed schizophrenia, their needs of 'personal relations' are the most unfulfilled [8]. Also results of McCann's work [9] and those of Volman's and Landeen's [10] prove that in spite of difficulties, people with schizophrenia show an interest in discussing issues connected to their sexuality and their intimate life. They also feel the need of establishing sexual relationships.

Aizenberg and co-workers' research [11], who compared frequency of sexual dysfunctions among groups of patients with schizophrenia: a) treated, b) not treated with psychotropic medicine, c) control group consisting of healthy patients, shows that in both groups of ill persons dysfunctions occurred significantly more often than in the control group. Failure of genital response and orgasmic dysfunction were more frequent in treated persons, while in the ill and not treated patients, a lack or loss of sexual desire was significantly more often.

According to Bitter's and collaborators' data [12] 37% of 570 patients with the first episode of schizophrenia examined by him, declared occurrence of dysfunction before starting therapy; whereas Gabay's and collaborators' research conclusions show that people with diagnosed schizophrenia in 50% of cases declared having regular sexual relationships, 32% had an intercourse in a month preceding the research, 36% reported sexual problems, and only 5% claimed to have had a constant partner.

Frequent occurrence of sexual disorders as side effects of neuroleptics is a separate problem. Sexual dysfunctions, which are a negative effect of medications, impair not only a patient's psychic sphere, his or her self-esteem, comfort and quality of life, but also an attitude towards the medication taken and what follows - his or her readiness for co-operation in treatment. According to Fleischhacker and collaborators [14] and Perkins [15], sexual dysfunctions are one of the main reasons for not obeying recommendations concerning use of anti-psychotropic medications. At the same time only 10% of the patients treated pharmacologically report (unasked) sexual disorders as an outcome of taking medication [16].

First reports about sexual dysfunctions caused by neuroleptics were published in 1968 [17 ref: 18]. In 1989 Segraves [19] described research results according to which 30-60% of men taking psychotropic medication declared erectile dysfunction (difficulty in developing or maintaining erection) and premature or delayed ejaculation. Research results from 2003 [20] indicate sexual dysfunctions in 80-90% of persons treated with traditional neuroleptics. Weaken desire and lower ability of having an orgasm are relatively frequent. The most often adverse effect of anti-psychotic medications is decreased libido caused by an antagonist effect in connection to dopamine and an increase of prolactin level caused by blocking dopamine activity, which may lead not only to libido decrease, but also to menstruation disorders, galactorrhoea, erectile dysfunctions. Limited sexual desire, difficulties in achieving orgasm and limited experiencing of it are particularly frequent among women. Moreover, the medication can cause vaginal dryness (failure of lubrication), atrophy followed by pain during an intercourse (nonorganic dyspareunia).

Also other adverse reactions, such as sedation or gaining body weight can, in a non-spe-

cific way, lead to a decrease of sexual interests. Extra pyramidal symptoms can hamper sexual activity making more precise movements difficult, and drug-induced hyperprolactinaemia can lower sexual desire by limiting the testosterone level.

Research on influence of specific antipsychotic drugs on sexual function reveal varied results. According to some reports, sexual dysfunctions occur in 30-60% of persons treated with traditional antipsychotic drugs (e.g. haloperidol, fluphenazine, chloropromazine); among atypical antipsychotic drugs, hyperprolactinaemia is most often caused by risperidone (89%), compared to 24% dysfunction occurrence in persons using olanzapine and 0% clozapine [21]. Research results from 2003 [22] suggest that in a group of 636 persons treaded with one neuroleptic for at least 4 weeks, sexual dysfunctions occurred in 43% of the ones who used risperidone, 38% using haloperidol, 35% using olanzapine, 18% using quentiapine. Research from 2006 [23] on 3828 patients with schizophrenia point at sexual dysfunction occurrence in 71.1% (N=188) of patients treated with haloperidol, 67.8% (N=860) treated with risperidone, 60.2% (N=142) treated with quentiapine and 55.7% (N=2638) treated with olanzapine. Kelly and Conley research, also in 2006 [24], indicated dysfunction occurrence in 78% of persons treated with fluphenazine, 50% treated with quentiapine and 42% of patients who used risperidone. Moreover, a lack of correlation between the dysfunction and prolactin level was confirmed. A better subjective feeling of orgasm was noticed best in the group treated with quentiapine, whereas 55% of those treated with risperidone and 40% treated with quentiapine declared a better feeling connected with their own sexuality than during treatment with first generation drugs.

Having done a thorough review of issues connected with sexuality in schizophrenia, Kasperek-Zimowska and collaborators claim that the most important factor triggering sexual disorders in schizophrenia is a clinical picture – disturbing personal and social functioning [25].

The aim of this research was to assess the frequency of sexual disorders in patients with diagnosed schizophrenia in comparison with general population results. Sexual disorders prevalence in the general population was based on data presented in "Report on Sexuality of Poles" by Lew-Starowicz from 2002 [26] and other sources quoted by the same author.

## MATERIAL AND METHOD

The group consisted of persons with diagnosed schizophrenia treated in out-patient psychiatric clinic in Warsaw and its surroundings. Among 56 persons – there were 25 women and 31 men aged between 20 and 71. 44.6% of the patients taking part in the research had a partner in the last 6 months, out of which 25% questioned were living together with their partners during the research.

The research was anonymous and carried out in smaller groups. Prior to the research, patients were informed about the rules and when they agreed to take part, the patients were asked to sing a Conscious Agreement Form.

The tool used to conduct the research was a Sexological Questionnaire [27], based on the diagnostic criteria included in ICD-10. Part A of the questionnaire includes questions about basic sociodemographic data – gender, age, education, address, marital status, diagnosis, any somatic illnesses, drugs taken, length of therapy and questions about partnership and living together with a partner. Part B of the questionnaire includes 12 questions concerning subjectively assessed symptoms of sexual dysfunctions, two referring to experiencing symptoms of gender identity disorders, 13 questions referring to disorders of sexual preference symptoms and 3 to sexual orientation.

Part C of the sexological questionnaire, which refers to the use of the Internet, will not be subject of this report (the results have been published separately [28]). All questions referred to the period of 6 months prior to the study. Answers were marked on Likert scale – from "always" through "often" to "never." Initial questionnaire assessment results show that it has high sensitivity and relatively good specificity [27].

## RESULTS

Results presented below include added answers from the questionnaire to "always" or "often" questions about complaints, sensations and

experiences related to sex functioning present during six months prior to the study. It has been stated that persons who in that period lived together with a partner, more often indicated having sexual dysfunction. At the same time, women have been noticed to have varied sexual dysfunctions more often than men.

Experiencing symptoms characteristic for at least one dysfunction "always" or "often" was reported by 93% of the questioned (96% women and 90% men), no sexual dysfunction was reported only by one woman (4%) and three men (10%). Subjectively assessed symptoms of 2 dysfunctions occurred in 16% (N=9) of the questioned (8% women – N=2 and 22% men – N=7), 3 dysfunctions in another 16% (N=9) (20% women – N=5 and 13% men – N=4). Occurrence of 4 or more dysfunctions was reported by 61% (N=34) of the questioned (68% women – N=17 and 55% men – N=17). The results are presented in Tab. 1.

**Table 1.** Frequency of reporting symptoms of sexual dysfunctions in patients with schizophrenia.

| Number of dysfunctions | Total | Women | Men |
|---|---|---|---|
| At least 1 | 92.8% N=52 | 96% N=24 | 90.3% N=28 |
| 1 | 0 | 0 | 0 |
| 2 | 16% N=9 | 8% N=2 | 22% N=7 |
| 3 | 16% N=9 | 20% N=5 | 13% N=4 |
| 4 or more | 61% N=34 | 68% N=17 | 55% N=17 |

Lack or loss of sexual desire was declared by 68% of the questioned women and 71% men, which surpasses a frequency of this dysfunction in the general population (25% women, 8% men). Significant differences between the questioned group and general population also concerned symptoms of sexual aversion (86% of the questioned women and 56.7% of the questioned men), symptoms of failure of genital response (45.2% men declared difficulties with developing erection, while in the general population this problem concerns 8% of men; 56% of women declared failure of lubrication, present in 12% of general population) and symptoms of orgasmic dysfunction (76% stated lack of orgasm, in 43% men orgasm is delayed). Self assessed sense of symptoms of nonorganic vaginismus was present in 44% of women (2% of the general population). However, painful discomfort accompanying an intercourse was declared by 32% of women and 6.5% of men. An interesting result concerning an excessive sexual drive turned out in a group of female patients – a self assessed sense of symptoms characteristic of this dysfunction was reported by 32% of the questioned women which exceeds the result of similar symptoms in men (their result does not differ from the general population results). Results accordance was also achieved with a reference to premature ejaculation. Tab. 2 – *next page,* presents collective results of the research concerning frequency of sexual dysfunctions in a group of questioned women and men with a comparison to a general population.

Symptoms of gender identity disorders were noted by 5% (N=2) of the participating women and 9.6% (N=3) men (Tab. 3 – *next page*). The results have to be interpreted with care, bearing in mind that disorientation accompanying psychotic symptoms can also affect perceiving own sexuality and also considering sexual illusions (including being convinced to belong to the opposite gender) at various stages of illness development.

In a group of questions referring to disorders of sexual preference (in spite of difficulties in relating them to the general population), the results indicate that men declared such symptoms considerably more often, especially with a reference to masochistic, sadistic and fetishistic needs and using a fetish in order to achieve sexual arousal. Symptoms of at least one kind of disorder of sexual preference occurred in 53.6% (36% women and 71% of the men) – including 1 disorder in 17.8% (N=10) (including 20% of women – N=5 and 16.1% men – N=5), 2 in 16% (N=9) (including 8% of women – N=2 and 16.1 % men – N=7), 3 in 7.1% (N=4) of the participants (including 4% women – N=1 and 9.7% men – N=3), and 4 or more in 14.3% (N=8) (including 4% of women – N=1 and 22.6% men – N=7) of the participants. In total, 36% of the participating women and 71% of the participating men declared symptoms of at least one disorder of sexual preference. Symptoms of at least one sexual dysfunc-

**Table 2.** Frequency of reporting symptoms of sexual dysfunctions in patients with schizophrenia in comparison with the general population.

| Sexual dysfunction | In any occurrence | In any occurrence | Data from the report | Data from the report |
|---|---|---|---|---|
| | Women | Men | % Women | % Men |
| Lack or loss of sexual desire | 68% N=17 | 71% N=22 | 25 | 8 |
| Sexual aversion | 68% N=17 | 54.8% N=17 | 3 | |
| Failure of genital response (erectile disorder: insufficient erection before intercourse) (only in M) | | 45.2% N=14 | | 8 |
| Failure of genital response (erectile disorder: insufficient erection during intercourse) (only in M) | | 54.8% N=17 | | 8 |
| Failure of genital response (vaginal dryness) (only F) | 56% N=14 | | 12 | |
| orgasmic dysfunction (anorgasmy) | 76% N=19 | | 10 | |
| orgasmic dysfunction (inhibited orgasm) | 44% N=11 | 43.3% N=13 | 17 | 4 |
| Premature ejaculation (only in M) | | 32.3% N=10 | | 32 |
| Nonorganic vaginismus (only in F) | 44% N=11 | | 2 | |
| Nonorganic dyspareunia | 32% N=8 | 6.5% N=2 | 13 | 2 |
| Excessive sexual drive | 32% N=8 | 19.4% N=6 | | 19 |

**Table 3.** Frequency of reporting symptoms of gender identity disorders in patients with schizophrenia in comparison with the general population.

| Disorder | In any occurrence | In any occurrence | Data from the report | Data from the report |
|---|---|---|---|---|
| | Women | Men | % Women | % Men |
| Transsexualism | 2.5% N=1 | 3.2% N=1 | 0.001 | 0.003 |
| Dual-role transvestitism | 2.5% N=1 | 6.4% N=2 | | |

tion or disorder of sexual preferences were confirmed by answers of 96.4% of the participants.

19.4% of men shown masochistic tendencies (2.5% of the men are estimated to have this paraphilia), 29% indicated a need of using fetishes in order to achieve sexual arousal (in the estimated data, 11% of the men are touched by fetishism), needs featuring sexual sadism was reported by 4% of the women and 16.1% men (general population data indicate this disorder in 5% of the men). Sexual desire towards under aged boys were declared by 3.2% men. 32% of the women indicated experiencing symptoms characteristic for disorders of sexual preference. Most often they concerned a need of furtively watching others in intimate situations (16%), hetero-

sexual pedophile tendencies (12% compared to 0.8% in the general population) and frotteurism (12%). Frequency of reporting symptoms of sexual dysfunctions results are presented in Tab. 4 and Tab. 5.

Almost 20% (N=11) of the participants declared a constant desire towards persons of the same gender (including 2% of the women – N=5 and 19.4% of the men – N=6), almost half of them 10.6% (N=6) claim that they do not accept their own homosexual orientation (including 4% of the women – N=1 and 16.1% of the men – N=5). Doubts concerning own sexual orientation were declared by 16% of the women (N=4) and 19.4% (N=6) men taking part in the research. A higher percentage of participants, both men and wom-

**Table 4.** Frequency of reporting symptoms of disorders of sexual preference in patients with schizophrenia in comparison with the general population

| Disorder | In any occurrence | In any occurrence | Data from the report | Data from the report |
|---|---|---|---|---|
| | Women | Men | % Women | % Men |
| Fetishism | 4% N=2 | 29% N=9 | 6 | 11 |
| Fetishistic transvestitism | 4% N=2 | 3.2% N=1 | | |
| Exhibitionism | 8% N=4 | 16.1% N=5 | | |
| Voyeurism | 16% N=8 | 51.6% N=16 | | |
| Pedophile – interest in boys | 12% N=6 | 3.2% N=1 | 1.3 | 0.8 |
| Pedophilia – interest in girls | 4% N=2 | 6.5% N=2 | 0.8 | 8.6 |
| Sadism | 4% N=2 | 16.1% N=5 | 2 | 5 |
| Masochism | | 19.4% N=6 | 4.6 | 2.5 |
| Frotteurism | 12% N=6 | 29% N=9 | | |
| Zoophilia | | 3.2% N=1 | | |

**Table 5.** Frequency of reporting symptoms of disorders of sexual preference in patients with schizophrenia

| Number of disorders | Total | Women | Men |
|---|---|---|---|
| At least 1 | 53.6% N=30 | 36% N=9 | 71% N=22 |
| 1 | 17.8% N=10 | 20% N=5 | 16 .1% N=5 |
| 2 | 16.07% N=9 | 8% N=2 | 22.5% N=7 |
| 3 | 7.1% N=4 | 4% N=1 | 9.7% N=3 |
| 4 or more | 14.3% N=8 | 4% N=1 | 22.6% N=7 |

en stated interest of homosexual form of intercourse as "sometimes." Answers indicating ego-dystonic orientation were declared by 4% female patients and almost 10% men. Results showing sexual orientation of participants are shown in Tab. 6.

**Table 6.** Frequency of reporting symptoms of sexual desire to the persons of the same sex and ego-dystonic orientation in patients with schizophrenia

| Orientation | Total | Women | Men |
|---|---|---|---|
| Homosexual desire | 19.6%<br>N=11 | 20%<br>N=5 | 19.4%<br>N=6 |
| Ego-dystonic orientation | 10.7%<br>N=6 | 4%<br>N=1 | 16.1%<br>N=5 |
| Doubts concerning sexual orientation | 17.8%<br>N=10 | 16%<br>N=4 | 19.4%<br>N=6 |

## DISCUSSION

Research results have to be interpreted cautiously, bearing in mind their pilot character and an unrepresentative group, as well as the method used which disables a precise diagnostic criteria assessment by a doctor. Research anonymity ensured intimacy and protected from shame from people who would learn about the patient's sexual disorders. Most of all, it protected participants from any actions that may have been taken against the ones who admitted having features of sexual disorders which involve violence (pedophilia, frotteurism, voyeurism).

The results show that among patients with schizophrenia, less than a half of the participants remained in a partnership relation in the last 6 months, out of whom only one fourth was living with their partner at that time. It seems to confirm a thesis that mentally ill people have more difficulties in initiating and maintaining interpersonal relations and fulfilling their sexual needs in the relations. At the same time, participants living with a partner indicated sexual dysfunctions more often, which most probably is connected with real possibility of fulfilling sexual needs.

The results on frequency of occurrence symptoms of sexual dysfunctions in schizophrenia gained with the questionnaire, considerably outnumber data from the healthy population. At a level of statistical tendency, a conclusion can be drawn that women declare occurrence of sexual dysfunction symptoms more often, reporting lack or loss of sexual desire, orgasmic dysfunction during intercourse and dyspareunia. Similarly in men – most common dysfunctions are the ones which are the biggest clinical problem in the general population, however a general frequency of occurring dysfunctions in the group of patients is higher, compared to general population data.

Interpreting results connected with gender identity disorder, one has to bear in mind that comorbidity of schizophrenia and transsexualism (reported by 4% of women and 3.2% men) is a unique phenomenon, so the results should be connected with the specific character of schizophrenia and disorientation it causes in perceiving oneself, including own body and psychic gender.

Disorders of sexual preference in the general population are a relatively weakly researched phenomenon, therefore difficulties in relating the presented results to frequency of such disorders in the general population do appear. In one of the very few presented reports, including all subsequent 120 men (88 men with disorders of sexual preference and 32 with related disorders, treated in an outpatient setting), in 5 patients (4.1%) there was a psychosis present in their lives [29]. This sample is obviously unrepresentative, but a percentage of patients with psychosis is higher than in the general population, which suggests a possibility of certain connections between schizophrenia and disorders of sexual preference.

A similar view was expressed by authors of sexual criminals with schizophrenia typology, who distinguished a group of people who had a disorder of sexual preference before the beginning of psychosis [30]. Results of the quoted re-

search need to be interpreted with a special care due to limited group, anonymity during data collection and a possible influence of psychotic experience on the answers. An assumption can be made that securing a full anonymity in the research had a positive influence on honesty of the answers concerning commonly negatively assessed needs and tendencies. It was important especially in case of disorders of sexual preference, which are often realised with an interference with other people's integrity. If this interpretation was acknowledged to be true, then taking into consideration widely accessible data on frequent cognitive processes disorders in people with schizophrenia causing possible difficulties in an interpersonal functioning, one can suppose that they can also have an influence on psychosexual development. Difficulties in satisfactory fulfilment of sexual needs in a proper development period can increase a risk of sexual preference and identification disorders, making satisfactory sexual relation more difficult. Awareness of disordered preferences can be one of the reasons of not searching for sexological help, which is most probably caused by fear of consequences of revealing them (e.g. treating disorders of sexual preferences as symptoms of psychosis or negative therapist's assessment etc). Differences present in a group of women and men seem to confirm views of more frequent occurrence of these disorders in the male population, although in the questioned group, the number of women admitting to these behaviours was surprisingly high (especially in cases of frotteurism and voyeurism).

In the results, a clear difference can be noticed, concerning homoerotic tendencies. In the investigated group, 4% of the women and 3.2% of the men declared sexual desire to persons of the same sex. In comparison with the data gathered by Lew-Starowicz where 0.5% of the women and 2.7% men declared exclusively homosexual orientation, there are clear differences in the group of women studied.

Studying aetiology of sexual disorders in a group of patients with diagnosed schizophrenia, factors connected with the illness have to be taken into account – deficits, autism, withdrawing from social relations, psychomotor efficiency reduction and the fact that mentally ill persons have less possibilities of making interpersonal relations. Considering reasons of sexual disorders one should not forget about the possible coexistence of other somatic illnesses and addictions. Taking into consideration the fact that satisfaction from sexual life is a crucial element of general well-being and satisfactory sexual relations can be an important factor of stable emotional relations, further studying of the causes and frequency of sexual dysfunction and symptoms of disorders of sexual preference and orientation disorders as well as ego-dystonic orientation, seem justifiable.

## CONCLUSIONS

A very high frequency of subjectively assessed symptoms of sexual disorders in patients with schizophrenia indicates that their assessment should be a part of every psychiatric examination and should there be such a need – a subject of therapy.

A verification of the obtained results on a larger and more representative group of patients with schizophrenia is suggested.

Study anonymity makes it possible to gain data on the occurrence of tendencies characteristic for symptoms of disorders of sexual preference, including those whose realisation is connected with using violence – they should be discussed in psychoeducation.

## REFERENCES

1. Pinderhughes CA, Barrabee Grace E, Reyna LJ. Psychiatric disorders and sexual functioning. Am. J. Psychiatry 1972, 128: 1276–1283.
2. Rozan GH, Tuchin T, Kurland ML. Some implications of sexual activity for mental illness. Mental Hygience 1971, 55: 318–323.
3. Skopec HM, Rosenberg SD, Trucker GJ. Sexual behaviour in schizophrenia. Medical Aspects of Human Sexuality 1976, 10: 32–48.
4. Sadow D, Corman A. Teaching a human sexuality course to psychiatric patients: The process, pitfalls and rewards. Sexuality and Disability 1983, 6: 47–53.
5. Buddeberg C, Furrer H, Limbacher B. Sexuelle chwierigkeiten ambulant behandelter. Schizophrener. Psychiatrische Praxis 1988, 15: 187–191.

6. Baggaley M. Sexual dysfunction in schizophrenia: focus of recent evidence. Hum. Psychopharmacol. 2008, 23: 201–209.
7. Rowlands P. Schizophrenia and sexuality. Sex Marital Ther. 1995, 10: 47–61.
8. Burns T, Fioritti A, Holloway F, Malm U, Rossler W. Case management and assertive community treatment in Europe. Psychiatric Services 2001, 52: 32–35.
9. McCann E. The expression of sexuality in people with psychosis: breaking the taboos. Journal of Advanced Nursing 2000, 32: 132–138.
10. Volman L, Landeen J. Uncovering the sexual self in people with schizophrenia. Journal of Psychiatric and Mental Health Nursing 2007, 14: 411–417.
11. Aizenberg D, Zemishlany Z, Dorfmag-Etrog P, Weizman A. Sexual dysfunction in male schizophrenic patients. J. Clin. Psychiatry 1995, 56: 137–141.
12. Bitter I, Basson BR, Dossenbach MR. Antipsychotic treatment and sexual functioning in first-time neuroleptic-treated schizophrenic patients. Int. Clin. Psychiatry 2005, 20: 19–21.
13. Gabay PM, Fernandez Bruno M, Roldan E. Sexual behavior in patients with schizophrenia: a review of the literature and survey in patients attending a rehabilitation program. Vertex 2006, 17: 136–144.
14. Fleischacker WW, Meise U, Gunther V, Kurz M. Compliance with antipsychotic drug treatment: influence and side effects. Acta Psychiatrica Scandinavica Suppl., 1994, 382: 11–15.
15. Perkins DO. Predictors of noncompliance in patients with schizophrenia. J. Clin. Psychiatry 2002, 63: 1121–1128.
16. Knegtering H, Blijd C, Boks MPM. Sexual dysfunctions and prolactine levels in patients using classical antipsychotics, risperidone or olanzapine. Schizoph. Res. 1999, 36: 355–356.
17. Shaker RI, DiMascio A. Endocrine effects of psychotropic drugs: VI male sexual function. Connecticut Medicine 1968, 32: 847–848.
18. Kelly DL, Conley RR. Sexuality and Schizophrenia: A review. Schizophrenia Bulletin 2004, 30: 767–779.
19. Segraves RT. Effects of psychotropic drugs on human erection and ejaculation. Arch. Gen. Psychiatry 1989, 46: 275–284.
20. MacDonald S, Halliday J, Mac Ewan T, Sharkey V, Farrington S, Wall S, McCreadie RG. Nithsdale Schizophrenia Surveys 24: Sexual dysfunction. Case control studies. British Journal of Psychiatry 2003, 182: 50–56.
21. Haddad PM, Wieck A. Antipsychotic-induced hyperprolactinemia: mechanisms, clinical features and management. Drugs 2004, 64: 2291–2314.
22. Bobes J, Garca-Portilla MP, Rejas J. Frequency of sexual dysfunction and other reproductive side effects in patientss with schizophrenia treated with risperidone, olanzapine, quetiapine, or haloperidol: results of the EIRE study. Journal of Sexual and Marital Therapy 2003, 29: 125–147.
23. Dossenbach M, Dyachkova Y, Pirildar S, et al. Effects of atypical and typical antipsychotic treatments on sexual function in patients with schizophrenia: 12-month results from the Intercontinental Schizophrenia Outpatient Health Outcomes (IC-SOHO) study. Eur. Psychiatry 2006, 21: 251–258.
24. Kelly DL, Conley RR. A randomized double-blind 12-week study of quetiapine, risperidone or fluphenazine on sexual functioning in people with schizophrenia. Psychoneuroendocrinology 2006, 31: 340–346.
25. Kasperek-Zimowska B, Brodniak WA, Sarol-Kulka A. Zaburzenia seksualne w schizofrenii – przegląd badań. Psychiatria Polska 2008, 42: 97–105.
26. Lew-Starowicz L. Raport: Życie seksualne Polaków. Przegląd Menopauzalny 2002, 4: 64–73.
27. Kokoszka A, Jodko A, Czernikiewicz W, Bilejczuk A. Kwestionariusz Seksuologiczny do badań przesiewowych: założenia i trafność. Psychiatria Polska, praca wysłana do druku.
28. Abd El Aal M, Jodko A, Kokoszka A. Ocena korzystania z treści seksualnych dostępnych w internecie przez osoby cierpiące na schizofrenię. Doniesienie wstępne z anonimowych badań kwestionariuszowych. Seksuologia Polska 2008, 6: 21–25.
29. Kafka MP, Hennen J A. DSM-IV Axis I Comorbidity Study of Males (n=120) With Paraphilias and Paraphilia-Related Disorders. Sex Abuse 2002, 14: 349–366.
29. Drake CR, Pathe M. Understanding sexual offending in schizophrenia. Crim Behav Mental Health 2004, 14: 108–120.