Schizophrenia and Other Psychotic Disorders

15

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15.1 Introduction

Human sexuality is the aspect of the human condition that is manifested as sexual desire or appetite, the associated physiological response patterns, and behaviour which leads to orgasm or at least pleasurable arousal, often between two people, but not infrequently by an individual alone [1]. A commonly used classification of stages in sexual response is the following: sexual desire (thoughts, interest), sexual arousal (feeling sexually excited as well as physiological effects, e.g. erection or lubrication), orgasm (peak in pleasure; mentally as well as physiologically), and resolution/refraction [2].

Systematic, large size studies about sexual function and behaviour in psychotic spectrum disorders are still missing. Questions naturally arise about how patients experience sexuality and sexual function during various psychotic disorders, how they deal with their sexual issues in remission, and while experiencing the adverse effects of drugs or negative symptoms. Since the main concentration is focused on psychosis management, other areas including sexual function and behaviour often remain without attention. Sexual content psychopathology as a part of psychosis regresses by itself because of appropriate psychosis treatment and therefore remains under-researched. Even today, the prevalence of sexual dysfunctions is underestimated by physicians, and spontaneous complaints from patients are uncommon. The understanding of the relationship between sexual function and psychotic disorders enables the selection of an appropriate treatment for sexual dysfunctions and dysfunctional sexual behaviour for each individual [1].

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15.2 Clinical Manifestations

15.2.1 Psychosis and Schizophrenia Spectrum Disorders

The stress vulnerability model integrates various psychological and biological factors to explain the vulnerability for psychosis development. Psychosis is considered as a dynamic process that develops in stages. The construct of a clinical "ultrahigh risk" for psychosis "prodromal" state has evolved to capture the pre-psychotic phase, describing people presenting with potentially prodromal symptoms [3]. Psychosis is usually characterised by positive symptoms reflecting an excess of function with impaired insight and reality testing. Disturbances in perception such as hallucinations and changes in thought content such as delusions are present. Disorganisation is often considered to be a part of positive symptoms in psychosis: disorganised speech, disorganised thinking, and disorganised behaviour including the catatonia phenomenon [4–6].

Currently, two known official classifications of mental disorders, the ICD-10 and DSM-5, distinguish primary psychotic disorders such as schizophrenia spectrum disorders (schizophrenia, schizoaffective, schizotypal (personality), and schizophreniform disorder), acute and transient (brief) psychotic disorder, and delusional disorder from secondary psychosis due to another medical condition and substance/medication induced [5, 7].

Schizophrenia is one of the most well-known psychotic disorders, and the concept of it has a long and changing history. It was common to categorise schizophrenia into subgroups: paranoid, hebephrenic, catatonic, undifferentiated, residual, simple, other, and unspecified. The modern construct presented in the revised version of the official classification system DSM-5 and ICD-11 excluded clinical subtypes of schizophrenia. It was replaced by the symptom specifiers [6, 7]. Schizophrenia is a severe and chronic psychiatric disorder affecting approx. 1% of population, with an onset usually in early adulthood, which causes prolonged disability in the affected person. Schizophrenia has a premorbid phase. Infantilism, autism traits, reticence, pathological fantasy, and unusual interests and activities are common for the premorbid personality of schizophrenia. In the clinical manifestation of schizophrenia, the main phenomenon is specific splitting: newly emerging mental processes (positive symptoms) while at the same time losing—already developed—mental processes (negative symptoms), including personality features. Positive symptoms include persistent hallucinations in any modality, persistent delusions of any kind, distortions of self-experience via passivity phenomena, and the permeability of ego boundaries such as thought insertion, withdrawal, broadcast, as well as disorganised thinking, speech, and motor behaviour. The negative symptoms in schizophrenia include apathy, avolition, anhedonia, affective blunting or flattening, disturbances in emotional communication, and/or cognitive changes. Because of these negative symptoms, people with schizophrenia may have difficulties with everyday tasks, neglect personal hygiene, social integration, and finding a partner [1, 8].

Positive and negative symptoms are common not only in schizophrenia but also in other schizophrenia spectrum disorders. The diagnosis of this spectrum depends on the prevalence, intensity, combination, and duration of the symptoms [5, 6, 8].

15.2.2 Sexual Content Psychopathology in Psychotic Disorders

Sexuality is an integral part of an individual's mental processes. Changes in the integrity of the person's mental processes may impair or even damage the expression of sexuality. Several categories of symptoms and syndromes that manifest in psychotic spectrum disorders and are related to sexual function and performance may be distinguished (Table 15.1).

The consequences of inappropriate psychotic sexual behaviour can cause financial problems directly from the costs for the behaviour or indirectly via decreased productivity; may result in a higher risk of sexually transmitted diseases, infrequent use of contraceptives, and inadequate use of sexual enhancement drugs; may account for genital injury and sexual attacks; may complicate relations between partners; or can cause distress to patients when they deal with the psychological, moral, and physical consequences [1, 9].

Table 15.1 Sexual content psychopathology in psychotic disorders

Condition	Clinical presentation
Changes in the sexual response cycle (sexual dysfunctions)	Hypoactive sexual desire disorder for both sexes
	Female sexual arousal disorder; male erectile dysfunction, priapism
	Female orgasmic disorder; male ejaculation disturbances
	Genital pain for both sexes
Disorder of sensation	Hyperesthesia, senestopathia
Hallucinatory condition related to external and/or internal genitals also sexual function/performance	Hallucinations in any modality. Typical are tactile, somatic, auditory, visual hallucinations
Imagined, false belief (not of delusional intensity)	Dysmorphophobia, hypochondriac ideas
Culture-bound syndromes	Koro and Dhat syndromes
Delusional condition related to external and/or internal genitals also sexual function/performance	Delusions of any kind. Typical are delusion of love, delusional jealousy, delusional changes in sexual identity
	Religious, somatic, hypochondriacal, nihilistic delusion
	Cotard's syndrome
	Delusion of reference, persecution, grandeur; control, and bizarre (permeability of ego boundaries and passivity phenomena)
Hypersexual behaviour (compulsive sexual behaviour/paraphilia-related disorders)	Sexual impulsivity, sexual compulsivity, compulsive masturbation, protracted promiscuity, severe sexual desire incompatibility, sexual harassment, excessive prostitution, pornography addiction, telephone sex and cybersex addiction
Paraphilias and paraphilic disorders	Exhibitionism, frotteurism, voyeurism, fetishism, paedophilia, sexual masochism, sexual sadism, other specified paraphilic disorder

15.2.3 Sexuality, Sexual Function, and Behaviour in the Presence of Schizophrenia Spectrum Disorders

The premorbid personality of schizophrenia patients is often schizoid or schizotypal with few interpersonal relationships and a lack of interest in forming sexual relationships and sexual experience. It may manifest with neurotic and hypochondriacal complaints, dysmorphophobia towards genitals or sexual reactions, and compulsive masturbation with deviant fantasies already in adolescent period [10, 11]. Polymorphic sexual content psychopathology is common during schizotypal disorder. The diagnostic criteria of this disorder in ICD-10 also consider the symptoms of sexual content [5].

The psychotic phenomena in schizophrenia in many cases have a sexual content. Sexual interest in the presence of bizarre sexual ideas or highly abnormal patterns of personal interaction may account for psychotic sexual behaviour with/without aggressive elements up to sexual attacks [1, 10]. Among many diagnostic criteria of paranoid schizophrenia, ICD classification mentions delusions of bodily change or jealousy and hallucinations of sexual or other bodily sensations [5]. Hallucinatory-delusional conditions may include the theme of love, jealousy, various sexual acts, genitals, or sexual identity during acute psychosis. Hallucinations involving the genitals occur in 30% of males and 36% of females; delusions about the genitals changing are present in 20% of males and 24% of females [12, 13]. Twenty-eight percent of 137 patients with schizophrenia or schizoaffective disorders reported sexual problems related to psychotic symptoms. These problems were twofold. On the one hand, a sexual disorder may occur due to sexual content of the patient's thoughts and perceptions. On the other, sexual content can attach meaning to the existing sexual problems [14, 15]. It is important to remember that an individual seldom applies for specialised help because of sexual complaints during acute psychosis. A person in psychosis may not be able to disclose his/her sexual experiences, and mostly they may be concealed.

Hyperesthesia and senestopathia as disorders of sensation may occur in the region of the external/internal genitals (hot/cold sensations, creeping sensation, etc.). Dysmorphophobia describes patients with an imagined physical defect. It can manifest itself as complaints in changes in form, size, colour, turgor of the genitals, and/or appearance of body fluids. The changes are noticeable in a particular part of the body or organ. Often, patients are convinced about the changes of the external/internal genitals such as "shrink", "atrophic", and "dried up". Hypochondriac complaints are unrealistic interpretations of physical signs or sensations as symptoms of serious illness: "I have syphilis", "it is impaired reflex of erection", "I'm impotent". Somatic delusion usually involves the fixed false belief that one's body or organs (genitals) are abnormal, diseased, or changed in some manner: "vagina emits a foul smell". Cotard's syndrome is a delusional condition that one or more of one's organs or body parts are missing, disintegrated, or no longer existing: "there is no more blood". In case of the bodily (somatic) passivity phenomenon, unusual subjective complaints may appear; patients are confident about rough changes/damages of the genitals and/or sexual function, often due to the influence of a higher extra-terrestrial power: "the possibility to get an erection was taken", "reflexes are controlled

by someone". An example of bodily (somatic) passivity phenomenon might be patients' tortured sexual sensations that may lead to an attempt to inflict self-mutilation or even castration. Self-mutilation in the area of genitals may be a result of religious, self-accusation delusions, or delusionally altered sexual identity. Because of the openness of thoughts and the sense of their broadcasting, one may be afraid that everyone around knows about his/her sexual fantasies, sexual acts, or sexual identity as well as orientation, both in terms of gender polarity and in relation to other objects. Auditory hallucinations can manifest themselves as comments towards different issues on sexuality [10, 16].

Sex change or being no longer a man occurs in 27% of schizophrenic males, meanwhile sex change or being no longer a woman appears in 25% of schizophrenic females [12, 13]. Delusions related to sexual identity can be in the case of schizophrenia, and such psychotic manifestation usually regresses after starting antipsychotic medication [10, 16]. Some indications suggest a higher incidence of gender dysphoria among people with schizophrenia than in the general population. The potential links between schizophrenia and identity difficulties can be explained by four hypothetical mechanisms [17]:

1. The vulnerability-stress model suggests that "gender identity confusion" may be a major stressor that increases the probability of developing schizophrenia in predisposed individuals [18].
2. It can be assumed that identity difficulties are a result of the illness itself: the change in the perception of reality triggered by the psychotic process may also affect one's self-image in mental, bodily, and social dimensions [17].
3. Both schizophrenia and gender dysphoria could be explained as neurodevelopmental disorders: neurobiological studies have shown significant similarities between schizophrenia and gender dysphoria groups, suggesting an association of these states with changes in cerebral sexual dimorphism and cerebral lateralisation [19].
4. Schizophrenia-specific deficits of mental function such as cognitive, emotional, and social functioning also impair the processes involved in the formulation of gender identity [19].

Fluctuations in all phases of the sexual response cycle (desire, arousal, orgasm, and resolution) can occur. Sexual function may be either increased or decreased. This is the relationship between increased desire, arousal, and the positive symptoms in schizophrenia with a tendency to decreasing desire over time in association with the improvement of symptoms [16, 20]. At least one sexual dysfunction was reported in 82% of women and 74% of men suffering from schizophrenia or schizoaffective disorders in a sample of 137 patients (56 women and 81 men) [14]. Sexual dysfunction occurred in 50% of men and 37% of women (46% of the sample) in the sample of 243 adult and sexually active patients of both sexes (men accounted for 71% of the group) with diagnosed psychosis (71% of whom were diagnosed with schizophrenia) [21]. In a sample of 636 patients, 38.1% of the subjects experienced some type of sexual dysfunction (44.6% of men and 25.0% of women). In men, the most frequent sexual dysfunctions were erectile dysfunction (30.8%) and decreased sexual desire (30.8%), whereas in women, the most frequent

sexual problem was reduced sexual desire (23.8%) [22]. According to research data, in a sample of 111 male outpatients with schizophrenia, 97.1% of the subjects had problems with satisfaction in intercourse, 95.5% erectile dysfunction, 93.7% sexual desire disorders, 88.6% problems with the general sexual satisfaction, and 78.4% orgasmic disorders [23].

The biopsychosocial model is the most suitable explanation for the development of sexual dysfunctions. There are various aspects that need to be considered: (1) the primary illness with changes in the dopamine system; (2) concomitant medications, especially those with effects on the pituitary hormonal axis; (3) the impact of comorbid psychiatric and physical diseases; (4) previous sexual experience and relationship; and (5) social competence issues [1, 10, 24, 25].

It is hypothesised that schizophrenia is characterised by abnormally low prefrontal dopamine activity (causing deficit symptoms) leading to excessive dopamine activity in mesolimbic dopamine neurons (causing positive symptoms) [26]. Dopamine is also an important biological factor for the physiology and psychology of sexual function. Dopamine is a neurotransmitter in brain areas and circuits involved in attention and salience of stimuli and in experiencing motivation and rewards, including sexual motivation (desire) and sexual reward. Sexual reward is experienced primarily during orgasm, but other stages of sexual functioning also seem to be involved in reward-related learning [2] (for details see Chap. 7). Hypodopaminergic activity in the frontal cortex can directly severely impair the ability to enjoy sexual life [11] and may also cause sexual function impairment via negative symptoms in schizophrenia. Negative symptoms such as lack of interest and anhedonia, blunted affect, a loss of impulse control, low social confidence, or difficulty starting and maintaining social or intimate relations can negatively affect sexual function [11, 25].

Because of the postsynaptic dopamine antagonism of antipsychotics, sexual desire, arousal, and ability to experience pleasure can be decreased [27, 28]. Prolactin is another important biological factor that is likely to be involved in patients treated with antipsychotics [27]. Elevated prolactin levels may explain endocrine side effects on sexual function—such as reduced capacity to create sexual fantasies [29], decreased desire and arousal, erectile, orgasmic, and ejaculatory dysfunction [30]. Besides having an affinity for the dopamine receptors and effects on prolactin elevation, antipsychotics interact with many other neurotransmitter systems—such as serotonergic, noradrenergic, histaminic, and cholinergic/muscarinic—in the brain and other parts of the body as the genitalia [31, 32]. The effects of antipsychotics on other neurotransmitter systems are associated with a decreased ability to achieve arousal or orgasm [32]. Sedation, weight gain, reduced mobility because of extrapyramidal effects and tardive dyskinesia, and vegetative side effects of antipsychotics [25] have an indirect effect on the sexual function as well (also see Chap. 24). These patients face difficulties in establishing and maintaining relationships not only as a result of recurrent psychotic episodes and negative symptoms but also because of such side effects of antipsychotics [11].

Comorbidity with other psychiatric conditions is also common throughout the course of the schizophrenia spectrum illness, with the estimated prevalence being 30–75% for depressive symptoms and depressive disorders [33, 34], 29% for

post-traumatic stress disorder, 23% for obsessive-compulsive disorders, and 15% for panic disorder [35]. The reported prevalence rate of personality disorders in psychosis is about 40%, but it varies significantly from 4.5 to 100% depending on the country, study type, and the diagnostic tools used for the evaluation of personality disorders [36]. People experiencing psychotic disorders more often have comorbid substance abuse disorders with the prevalence between 25 and 40%, most common drugs of abuse being nicotine, alcohol, and cannabis [37–39]. People with schizophrenia are at a greater risk of obesity, Type 2 diabetes, dyslipidaemia, and hypertension compared to the general population. In addition, smoking, poor diet, reduced physical activity, alcohol or drug abuse, and side effects of antipsychotics are prevalent in people with schizophrenia and contribute to those risks [40, 41]. An increased incidence of chronic medical illnesses and comorbidity with psychiatric conditions during psychotic disorders contributes to the development and persistence of sexual dysfunctions [1].

The quality of studies of the prevalence and types of sexual dysfunctions in patients with schizophrenia and the effect of antipsychotic medication has shown many methodological differences and large variations. The frequency of sexual dysfunction was high in patients treated with risperidone (43.2%), haloperidol (38.1%), as well as with olanzapine (35.3%) and quetiapine (18.2%) [22]. A review comparing different antipsychotics with regard to sexual dysfunction concluded that risperidone induced sexual dysfunction most frequently, followed by typical antipsychotics (haloperidol), olanzapine, quetiapine, and clozapine, while the lowest frequency was found for aripiprazole [42, 43]. Amisulpride, ziprasidone, and paliperidone seem to have a similar effect on the sexual function to that of typical (first generation) antipsychotics and risperidone [15, 43] (see Chap. 24 for more details).

Sexual desire. Patients with schizophrenia reported a significantly higher prevalence of reduction in sexual desire versus unaffected controls, and sexual desire was reduced in patients irrespective of antipsychotic use [24]. Patients using antipsychotics experienced a reduction in sexual desire ranging from 12 to 38% [44].

Sexual arousal. Patients using antipsychotics experienced dysfunction of arousal (such as erection and lubrication) ranging from 7 to 46% [44]. Studies suggest that women report diminished lubrication in frequencies that are comparable to the frequency of erectile dysfunction reported by men treated with the same antipsychotics [27]. Patients who used antipsychotics experienced significantly more erection disturbances both during sexual intercourse and during masturbation compared to those who did not undergo antipsychotic therapy [24]. Priapism related to treatment with antipsychotics is a rarely occurring condition and has occurred only in case reports [16, 45].

Orgasm. 4–49% of patients using antipsychotics experienced orgasm dysfunctions [44]. Ejaculation disturbances consisted of a change in the consistence or the volume of the ejaculate [16]; it occurred in 8–58% in patients treated with antipsychotics [44]. Women reported orgasmic dysfunction including difficulty achieving orgasm, changes in the quality of orgasm, and anorgasmia. Spontaneous ejaculation [32] and pain during orgasm were also reported in a few studies [46, 47].

People with schizophrenia are engaged in less overall sexual activity of any type, yet they are more likely to experience autoerotic behaviour [25, 48]: over 75% of men have masturbatory activity [49]. However, most patients with schizophrenia

show an interest in sex that differs little from that in the general population [50]. Furthermore, some patients have shown an increased sexual desire to engage in intimate relationships over time, which may be seen in the context of improved psychopathology due to the treatment [51].

Social isolation and impaired impulse control may be the basis for paraphilic behaviours in psychotic disorders. The prevalence rate of paraphilic and psychotic disorders has been reported between 1.7 and 16% [52]. In a study on sexually offensive behaviour, it was found that fully two-thirds of the sex offenders had a diagnosis of schizophrenia or schizoaffective disorder and many had a comorbid substance use disorder. The sexually offensive behaviour included rape, lewd and lascivious acts, and sodomy. Of the 42 offenders, in 50% of cases, the victims were children [53]. Dynamic transformation of paraphilia (developing of new forms of paraphilia in addition to the already existing ones) is related to the psychotic symptoms and an increase of negative symptoms in schizophrenia: a combination between paedophilia, exhibitionism, and voyeurism in schizophrenia with persistent but nonprogressive negative symptoms and necrophilia in schizophrenia with progressive negative symptoms has been reported [54]. Sexual acts with animals and fantasising about animalistic objects have been reported in relation with psychosis [55]. It has also been reported that psychosis may increase the risk of recurrent sexually offensive behaviour in individuals who are prone to such behaviour [56]. It is proposed that individuals with schizophrenia spectrum disorders who are engaged in sexually offensive activities should be classified into broad groups: (1) those with a pre-existing paraphilia; (2) those whose deviant sexuality arises in the context of illness and/or its treatment; and (3) those whose deviant sexuality is one manifestation of more generalised antisocial behaviour. In the cases, the paraphilia is secondary to the psychotic illness and subsides when the psychosis is successfully treated, whilst in other cases, the paraphilia is independent of the psychosis and may need treatment in its own right [57].

15.2.4 Specific sexual content delusions

Delusional disorder is characterised by well-circumscribed delusions without schizophreniform symptoms [8]. A person may have a single delusion or more closely related ones, which are linked to a paranoid system. The function level is therefore relatively good, with the exception of areas drawn into delusions [5]. Delusion of love (erotomania/De Clerambault's syndrome) and delusional jealousy (Othello syndrome) as persistent mental disorders are well-known but rare psychiatric conditions. The prevalence is estimated to be less than 0.1% [58]. About 246 cases of erotomania worldwide are known from a review published for the period of 1900–2000 [59]. It is reported that the prevalence of delusional jealousy in 8134 psychiatric in-patients was 1.1% [60]. It is likely that those conditions are often not recognised as a distinct syndrome and are consequently classified under one of the larger psychiatric categories, nor do all the persons with this syndrome come to the attention of mental health professionals [61]. Delusions of love and jealousy as well as more specific culture-bound syndromes related to genitalia and sexual function are summarised in Table 15.2.

Table 15.2 Specific sexual content delusions

Condition	Symptoms	Comments
Delusion of love	Delusional idea that a person whom she/he considers to be of higher social and/or professional standing is in love with her/him	Usually occurs in a young/middle-aged woman
	It can be accompanied by comorbid paraphilia or hypersexual behaviour and stalking behaviour	The pure form existed alone as the whole psychosis, remained unchanged or fixed following its sudden onset
	The syndrome may persist for a period of a few weeks to a few months in a recurrent form and may be replaced by a similar delusion about another person. In the fixed form, it may persist for several years [9, 61]	The secondary form exists in association with other psychiatric states—most often, paranoid schizophrenia [9, 61]
Delusional jealousy	It is marked by suspecting a faithful partner of sexual infidelity, with accompanying jealousy, attempts at monitoring and control, and sometimes violence [62]	The syndrome can appear in association with organic psychoses, alcohol psychosis because of long-term alcohol consumption, schizophrenia, affective disorder, and a pure paranoid disorder
	Reduced sexual function such as real or imaginary hypophallism may give rise to feelings of inferiority and lead to the development of this syndrome [63] Sado-masochist behaviour—moral and physical torture of the partners, self-torture, high sexual excitation with decreased possibilities in the sexual function, and perversions have been mostly reported to be of alcoholic aetiopathology [64]	The syndrome is seen in both sexes, but women are more likely to suffer from this syndrome in cases of schizophrenia, while men—in cases of alcohol psychosis [60]
Dhat syndrome	The syndrome is characterised by severe anxiety and hypochondriacal concerns associated with the discharge of semen, whitish discoloration of the urine, and feelings of weakness and exhaustion	It is a culture-bound syndrome
	The hypochondriacal fear about some irreversible harm to the patient's body (permanent impotency or the shrinking of the size of the penis) is manifested [65]	Somatoform, hypochondriacal, dysmorphophobic, and delusional disorder occur along with this syndrome [65]
Koro syndrome	It is characterised by acute anxiety and a deep-seated fear of the shrinkage of the penis and its ultimate retraction into the abdomen, which will cause death	It is a culture-bound syndrome
	The dysmorphic quality of own-penis perception such as the decreased penis length is discussed in relation to Koro vulnerability [66]	It is has been reported in association with various somatic, psychiatric, and drug-induced disorders [66]

15.2.5 Sexuality, Sexual Function, and Behaviour in the Presence of Other Psychotic Disorders

Psychosis can occur during other psychiatric and somatic conditions than the schizophrenic spectrum. Sexual behaviour and function in elderly psychosis as a very late onset of schizophrenia-like psychosis (previously known as paraphrenia), psychosis induced by substance abuse, psychosis in affective disorders, and psychosis as a post-traumatic condition or because of neurodegenerative disorders are presented in Table 15.3.

Table 15.3 Sexual function and the other psychotic conditions

Condition	Comments
Psychosis in the elderly	Functional psychosis in the elderly; the onset occurs after the age of 60 The patient group is mainly single elderly women; many have never been married, with poor sexual functioning The content of positive symptoms is related to housing—mostly about imaginary people in the environment; "outgroups" such as criminals, prostitutes, etc.; often sexual undertones, possibly grotesque sexual content of rape, sexual harassment, or stalking [8, 67]
Psychosis in affective disorders	Increased or inhibited sexual activity may occur in unipolar or bipolar depression/mania because of changes in mood and psychomotor activity [1] Increased sexual drive and sexual impulsivity with the clinical picture of paraphilia-related disorders are quite common in mania with psychosis [9, 10] Sexual complaints due to depressive psychosis are related to sadness, grief, self-accusation, delusion of sinfulness, hypochondria, nihilism, as well as Cotard's syndrome Sexual activity tends to normalise both in unipolar and bipolar affective disorder in the remission phase [10]
Psychosis related to a post-traumatic condition	The odds of the development of a psychotic disorder or positive psychotic symptoms in adolescents and adults with histories of traumatic life events range between 2.78 and 11.50 [3] Impulsive, unsafe, risky, and also autoerotic sexual behaviour can appear as an expression of sexual behaviour in psychosis of post-traumatic etiopathology Sexual dysfunctions and dysfunctional relationships (fear of intimacy and an inability to trust the partner) may also occur in chronic psychosis as a post-traumatic condition after an aggressive, autonomy-violating relationship
Psychosis related to substance abuse	Cannabis, stimulants, or hallucinogens can cause psychosis by intoxication, while alcohol causes psychosis as a part of the withdrawal syndrome (delirium) or chronic hallucinosis Typical behavioural aberrations such as high energy, a strong desire without erection, or prolonged sexual intercourse without ejaculation were found to occur due to stimulants [68] A higher rate of paraphilic behaviour and hypersexual behaviour was associated with a substance-induced psychotic disorder [53, 69] Impaired sexual function during chronic alcohol consumption may provoke delusion of jealousy and/or paraphilic behaviour [64]

Table 15.3 (continued)

Condition	Comments
Organic (secondary) psychosis due to a neurodegenerative condition	The incidence of psychotic symptoms in different types of dementia is approximately 70% Between typical delusions of financial loss or deceit, delusions of jealousy and love may occur. Hypersexual and autoerotic behaviour has been reported as well The delusion of love was reported in the early stage of Alzheimer's disease and vascular dementia Hypersexual behaviour and delusional jealousy may occur independently in patients with Parkinson's disease who are on dopamine agonist therapy [4, 70]

15.3 Clinical Management

Due to the complexity and the biopsychosocial nature of human sexual disorders, a comprehensive, broad-spectrum evaluation and treatment approach must be applied for individuals with psychotic disorders. A reliable diagnosis should be provided that has differentiated the cause of the dysfunction together with the patient's medical history with attention to risk factors, which also evaluated basic laboratory tests results. Therapy should be targeted specifically to sexual content psychopathology, saving and maintaining individual's normal sexual function, and oriented to interpersonal relationships and patient's expectations [1, 11]. Several particular steps can be distinguished in dealing with sexuality concerns during psychotic disorders: (1) stabilisation of the psychotic condition; (2) assessment of sexual function; (3) application of psychosexual counselling; and (4) adjustment of disorder-specific treatment.

15.3.1 Stabilisation of the Psychotic Condition

Stabilisation of the psychotic condition should be performed first because of the urgency of this condition. It is important to assess and eliminate possible causes of the psychosis (primary or secondary psychosis due to substance abuse or somatic/medication background). The risk assessment for aggression, self-harm, and suicide attempts must be carried out. Urgent intervention with medications, psychotherapy, or hospitalisation must be evaluated and carried out. Comorbid conditions in psychosis have a negative effect and should be a key issue in the follow-up and treatment of patients. Depending on the predominant syndromes in psychosis, treatment with typical/atypical antipsychotic medications as monotherapy or in combination with other psychotropic medications (typical/atypical antipsychotics, benzodiazepines, antidepressants, or mood stabilisers) could be applied. The dose should be chosen individually according to the prevailing psychopathology, the effect, and tolerance. Inappropriate, bizarre sexual performance as the part of hallucinatory-delusional syndrome can be treated in this phase.

Case Report 1

A 33-year-old woman presented to a sexual medicine specialist for consultation concerning her sexual orientation. On arrival, she expressed apprehensions and doubts concerning a possible change in her sexual orientation and uncertainty about further relationships with her husband.

Current status. During the consultation, the woman expressed doubts about her sexual orientation and stated that all the surrounding people could see and knew that she was homosexual, which made her feel very ashamed and uncertain of how to interact with her children and her husband. She had always been certain she was heterosexual. To check on her sexual orientation, she masturbated several times while fantasising about different scenarios, which exacerbated the feelings of guilt and dissatisfaction. The interview revealed more complaints: the woman stated that she felt vibrations in her body and sometimes felt that her body was sensitive to "bad" energies radiated by the environment, which made her feel tired at the end of the day. During the course of the consultation, the real cause of anxiety about her sexual orientation emerged: the woman admitted hearing voices that told her she was homosexual. Those voices blamed and shamed her. Gradually, her sleep and appetite became impaired, and the sensations in the body and the voices speaking about her homosexuality became tiring, preventing her from focusing at home or at work.

History of the present illness. The woman is married, has two small children, and is employed. She had not experienced any sexual impairment when living in partnership. She could not recall having any doubts about her sexual orientation during her psychosexual development. The history of illness also showed that at the age of 24, the patient developed psychosis, and after this episode, paranoid schizophrenia was diagnosed. The optimisation of the treatment with antipsychotics resulted in the remission of the psychotic symptoms, and the woman functioned sufficiently well both at work, at home, and in her sexual relationships with her partner. Since the woman was feeling well, she thought she had completely recovered and thus discontinued medication use.

Evaluation. During the consultation, the patient's condition was evaluated as a relapse of psychosis provoked by the discontinuation of pharmacotherapy. The risk of suicidal tendencies or aggressiveness was evaluated as low.

A combined treatment was applied.

- Psychoeducation about paranoid schizophrenia and the risk associated with the discontinuation of the treatment.
- Psychoeducation about doubts concerning one's sexual orientation due to the influence of voices appearing because of the exacerbation of the main disease. An analysis (performed together with the patient) of the possibility that upon the initiation of treatment with antipsychotics and disappearance of the commenting voices, her doubts concerning her sexual orientation would disappear as well.

- Psychosexual education about an individual's psychosexual development (using library resources).
- Treatment with atypical antipsychotic was initiated, starting with a minimal dose: olanzapine 5 mg. The dose was gradually increased, evaluating the risk-benefit ratio. A positive effect on the symptoms of psychosis was observed after increasing the dose to 15 mg/day. The voices commenting about the patient's sexual orientation and other psychotic symptoms gradually disappeared.
- Prolactin concentration was evaluated at baseline, and follow-up evaluations are planned in case of signs of hyperprolactinemia.

15.3.2 Assessmentof Sexual Function

Focus on an individual's sexual function after stabilisation of acute psychosis onset must be provided. Desirable conditions are sufficient insight and collaboration, as well as the patients' consent. Psychosexual development, premorbid sexual function, early psychotrauma, sexual interest and sexual response changes, evaluation of triggering situations, and relationship issues must be assessed. The following should be considered: educational and religious factors, sexual attitudes, sexual thoughts and fantasies, sexual beliefs, problems derived from the attitude of the sexual partner, and the partner relationship itself in the sexual history of a patient as well. Direct and indirect effects of psychosis symptoms in the primary psychiatric disorder, comorbid psychiatric illness, iatrogenic effects of treatment, and comorbid physical illness must be considered in this evaluation process [11]. Spontaneous reporting shows very low rates of sexual dysfunctions, whereas reports increased over 46% when questionnaires for sexual functioning were used [21]. To improve the reported rates of sexual dysfunctions, reliable and specific questionnaires are suggested, such as the Female Sexual Function Index (FSFI) for females [71], the International Index of Erectile Function (IIEF) for males [72], or the Antipsychotics and Sexual Functioning Questionnaire (ASFQ) for the evaluation of the influence of antipsychotics on sexual performance [73].

15.3.3 Psychosexual Counselling Approaches

Psychosexual counselling strategies include individual and couple psychosexual education. Psychosexual education has a very important mission in patients and their partners. The goals are the following: (1) to destigmatise individuals with psychotic disorders; (2) normalise the understanding about sexual function/performances during mental illness; (3) improve acceptance of one's own sexuality and to their integrate sexuality and psychopathology diagnosis; and (4) change attitudes. The main focus in this counselling is to explain a patient's sexual function and dysfunction within the biopsychosocial context of his/her illness and life experience as well as to provide knowledge concerning the therapeutic targets (the impact of

affect changes, positive and negative symptoms, and side effects of medications on sexual response and performance) both for the patient and for the partner. Couples should know that there are various legitimate motivations for being sexual without adding performance pressures. The information and appropriate reassurance about the potential for stimulated "responsive" desire, even if the patient has no spontaneous sexual urges, must be accentuated [74]. Addressing modifiable risks factors such as smoking, substance abuse, obesity, diet, and exercise should be taken into account for better management of sex life. Family planning and contraceptive counselling addressing patient concerns should be incorporated into the treatment plan for people with schizophrenia or other psychotic disorders [1].

15.3.4 Disorder-Specific Treatment Approaches

The goals of disorder-specific treatment are the following: (1) restoration of lasting and satisfying sexual function; (2) maximisation of remaining capacity; (3) preservation of improved or sufficiently individually normalised capacity of sexual function; and (4) adaptation to residual limitations by utilising specialised therapies, including partner support [74, 75]. A clinician should offer detailed and concrete suggestions/therapy after clinical evaluation. An appropriate treatment for sexual content psychopathology of individuals with psychotic spectrum disturbances should be applied. Bizarre and inappropriate sexual behaviour during psychosis because of the hallucinatory-delusional syndrome with sexual themes should be regulated with appropriate treatment with antipsychotics. Sufficient treatment results in the regression of sexual content psychopathology along with psychotic symptoms. Optimisation of medications for each individual could be recommended: monotherapy instead of polytherapy or selection of an antipsychotic drug with fewer detrimental effects on sexual functioning. A comparison of different antipsychotics showed high frequencies of sexual dysfunction for risperidone and typical antipsychotics and lower frequencies for clozapine, olanzapine, quetiapine, and aripiprazole. Lowering the dose of antipsychotic or switching to an antipsychotic with fewer harmful effects on sexual functioning is recommended for those who develop sexual dysfunctions during treatment with antipsychotics. For the switching strategy, it is recommended to use an antipsychotic with fewer harmful effects on sexual functioning—such as aripiprazole, olanzapine, quetiapine, or ziprasidone, especially for sexually active patients [16].

Adjunctive therapy with dopamine agonists (cabergoline or amantadine) or aripiprazole is recommended in the case of hyperprolactinemia [16, 76]. The risk of psychiatric symptom exacerbation when applying any of these treatment options should be evaluated in each individual patient [16]. However, conservative actions should be taken first, especially for patients who have been difficult to stabilise on antipsychotic medications and may be likely to have side effects or exacerbation of symptoms [44]. For erectile dysfunction, adjunctive treatment with a phosphodiesterase-5 inhibitor (PDE5) like sildenafil, vardenafil, avanafil, or tadalafil is recommended [16, 77]. Sexual aids such as lubricants and mechanical tools such as vacuum devices or vibrators could be used as appropriate [1, 9, 11]. Individual and/

or couple therapy in relation with dominant symptoms of psychotic disorders should be offered. The following is recommended: cognitive behaviour therapy for maladaptive thoughts and problematic behaviour; psychodynamic therapy in case of conflicts in the development stages from early life; mindfulness for sexual anxiety, catastrophizing, and trauma treatment; psychomotor physiotherapy focuses on awareness and a change of tension and its patterns in the body and increases familiarity and connection to own body and experiences; couple therapy for changing attitudes and expectations, for learning openness to alternative sexual activity, and for reducing physical stress or discomfort; and individual or couple sex therapy to apply concrete individual exercises, positioning options, or strategies [1, 9, 11].

Case Report 2

A 52-year-old man presented to a sexual medicine specialist for a consultation concerning insufficient erection. The man stated that because of his poor erection, his wife was unfaithful to him. He said this was not the first time, and thus he wanted to solve that sexual problem. His conviction that his wife was unfaithful was based on her strange behaviour, being secretive, and refusal to have sex. He also suspected that his wife had infected him with a sexually transmitted disease because his temperature elevated in the evenings.

Current status. During the consultation, the individual was angry, tense, irritable, and distrustful. He was speaking loudly and continuously, becoming irritable upon specific questions from the specialist. The man denied using alcohol. He stated that he had recently visited a urologist and had undergone ultrasonographic evaluation of penile blood circulation because of this complaint. The evaluation revealed no impairment. The man stated that his family physician had performed his blood analysis. The patient was angry with his family physician for suggesting taking haloperidol. He said he could not comprehend how this drug would solve his sexual problems. The man seemed quite reluctant to talk about the circumstances associated with haloperidol use and stated that he had been prescribed this drug "for depression". He asked not to focus on his mental status and said he was "normal".

History of the present illness. Objective data about the patient's previous mental disorders obtained from his family physician: the patient has had paranoid schizophrenia for 32 years. Psychoses begin with delusions of infidelity, persecution of the wife, and collection of "evidence" against her. Subsequently, the delusion becomes systematised to form world conspiracy theories, involving the patient himself. The patient was admitted to mental hospitals several times. Various combinations of antipsychotics were applied—mostly typical antipsychotics or their combinations with tranquilisers. Their side effect on the sexual function manifested itself via decreased desire and insufficient erection and ejaculation, which resulted in the patient's predisposition to discontinue the treatment. Laboratory tests: no changes in sex hormone or thyroid hormone profiles; moderately increased total cholesterol and low-density lipoprotein concentrations; normal concentration of prolactin; and normal

levels of glycated haemoglobin (HBbA1c). Renal and hepatic functions—nothing abnormal detected. Objective history of the illness obtained from the wife: the wife confirmed that the husband has had a psychotic disorder for many years. He has no delusions while taking medicines, but he is continuously worried about weakening sexual function, which he blames on the medications and discontinues their use without consulting the physician. The wife has noticed that antipsychotic medications have an inhibitory effect on the husband's psychomotor function; during sexual intercourse, the husband becomes anxious, irritable, or even angry, and even if the intercourse is successful, it does not bring satisfaction to either partner. The woman stated that when her husband discontinues the treatment, he becomes hypersexual, he wants frequent intercourse, and both erection and ejaculation are normal. During this stage, the wife's refusal to have sexual intercourse strengthens his paranoid suspicions about the wife's unfaithfulness. The wife denies the presence of any physical or sexual violence.

Evaluation. During the consultation, the patient's condition was evaluated as a relapse of psychosis provoked by the discontinuation of pharmacotherapy. The risk of suicidal tendencies was evaluated as low. The level of aggression was slightly increased, but no additional measures have been taken.

A combined treatment was applied.

- Psychoeducation about the relapse of paranoid schizophrenia provoked by the discontinuation of treatment.
- An analysis of the possibility for selecting atypical antipsychotic with a lower risk of sexual dysfunction, performed together with the patient and his partner.
- Treatment with aripiprazole was initiated, the starting dose being the minimal therapeutic dose of 10 mg in his case. The dose was gradually increased, evaluating the risk-benefit ratio. A positive effect on the symptoms of psychosis was observed after increasing the dose to 30 mg/day. The administration of this medication did not result in any psychomotor inhibition phenomena or a negative effect on sexual desire, erection, or ejaculation, which reduced the risk of treatment discontinuation.
- Psychosexual education of the couple about sexual function when one of the partners has a mental disorder and is using psychotropic medications. Discussion with the couple about their expectations and possibilities and about each partner's individual needs. A survey of the possibilities for creating additional intimacy in the environment prior to the planned intercourse, with recommendations of a prolonged prelude with caresses, which would create the atmosphere of calmness, relaxation, and trust.
- Modification of risk factors such as elevated total cholesterol and low-density lipoprotein levels.
- Follow-up of prolactin concentration in the future, in case of signs of hyperprolactinemia.

15.4 Key Messages

- Sexual content psychopathology in the structure of psychotic disorders can manifest as a hallucinatory-delusional condition with content theme about love, jealousy, sexual acts, genitals, sexual identity, as well as hypersexual behaviour and paraphilic behaviour.
- Positive and negative symptoms in psychotic disorders, comorbid mental or medical conditions, and treatment with antipsychotics alone or in combination may contribute to the development of sexual dysfunctions and sexual relationship difficulties.
- Stabilisation of the psychotic condition, assessment of the sexual function, application of psychosexual counselling, and adjustment of disorder-specific treatment are several particular steps in dealing with sexuality-related concerns during psychotic disorders.
- Destigmatisation of individuals with psychotic disorders, normalisation of the understanding about sexual function/performances during mental illness, improvement of the acceptance of one's own sexuality, integration of sexuality and psychopathology, and alteration of attitudes are the main goals of psychosexual counselling.
- The main goals of the combined treatment are the following: the restoration, the maximisation, the preservation, and the adaptation of the residual limitations for sufficiently satisfactory sexual function.
- Optimisation of medications for each individual could be recommended: monotherapy instead of polytherapy, selection of an antipsychotic drug with fewer negative effects on sexual functioning, lowering the dose or switching to an antipsychotic with fewer harmful effects on sexual functioning, adjunctive therapy with dopamine agonists or aripiprazole in case of drug-induced hyperprolactinemia, and use of PDE5 inhibitors in case of erectile dysfunction. In addition, sexual aids such as lubricants or mechanical tools could be used.

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