

Sexuality, Reproduction, and Family Planning in Women With Schizophrenia

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Abstract

This article reviews data about how schizophrenia affects sexuality, pregnancy, the puerperium, parenting, and family planning. Women with schizophrenia have high rates of coerced sex, sexual risk behavior, and unwanted pregnancies. High rates of obstetric complications and custody loss increase morbidity for women and their offspring. Since untreated psychosis increases these problems, the risks of withholding pharmacotherapy must be weighed against the risks of prescribing medications during pregnancy. The puerperium is a time when women are especially vulnerable to exacerbations of schizophrenia. Mothers with schizophrenia may have a reduced ability to read children's cues, and they often have weak social support networks. Their children may be more difficult to raise than other children. Parenting rehabilitation can address some of these problems. Often, women with schizophrenia who are sexually active and do not wish to become pregnant do not use contraception. Incorporating family planning measures into mental health care delivery systems may reduce unwanted pregnancies.

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During the past few decades, changes in societal context, health care delivery, and pharmacotherapy have effected profound changes in the sexual and reproductive lives of women with schizophrenia. These changes, in turn, have markedly affected outcomes for both the women and their offspring. This article summarizes research and clinical findings about sexuality, pregnancy, the postpartum period, parenting, and family planning in women with schizophrenia. Based on these data, recommendations about clinical practice and mental health service delivery are presented.

Before the 1950s, sexuality was restricted for women with schizophrenia in a variety of ways. One of the most

influential was relative lack of access to marriage. In a cultural context that stigmatized extramarital sex and illegitimate births, marriage was, for many people, the only acceptable context for sexual intercourse. People with schizophrenia were significantly less likely to marry than people without mental illness and, therefore, were less sexually active (Hilger et al. 1983).

Institutionalization of people with schizophrenia reinforced sexual inactivity by discouraging or prohibiting sexual relationships. Illegitimate pregnancies occasionally occurred in psychiatric facilities, but at only one-fifth the rate in the general population (Wignall and Meredith 1968).

With the availability of oral contraceptive pills, many psychiatric institutions changed their stance to allow more sexually mixed social activities and home passes (Wignall and Meredith 1968). Subsequently, deinstitutionalization of patients with chronic mental illness accelerated; by the 1990s, beds in public psychiatric hospitals had decreased by 80 percent from their 1955 numbers (Appleby et al. 1993). Living in the community markedly increased opportunities for sexual encounters (Nicholson et al. 1996).

Due to gender differences in the expression of schizophrenia, as well as reproductive differences, these changes have affected women differently than men. As a group, women with schizophrenia have shorter hospital stays and fewer rehospitalizations (Goldstein 1988). Women with schizophrenia have better social functioning; as a group, the women kiss, date, have sex, cohabit, marry, and raise children more often than men (McGlashan and Bardenstein 1990; Test et al. 1990). The relative fertility of women with major mental illness has increased markedly in parallel with deinstitutionalization (Ødegård 1980).

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In a number of important ways, health care delivery systems have been unprepared to address these problems. There are major shortcomings in pregnancy detection, management of pharmacotherapy during pregnancy, family planning, housing for pregnant women or mother-infant pairs, and parenting rehabilitation (Bachrach 1984). The research and clinical findings summarized below are beginning to shed light on how some of these problems can be alleviated.

Sexuality

Until recently, ideas about the sexuality of women with schizophrenia were based more on theoretical formulations than on systematic empirical data. Beginning in the 1980s, more systematic studies of sexual attitudes and practices among women with schizophrenia were conducted. One early study (Lyketsos et al. 1983) found that patients with schizophrenia were less interested in sex, had sexual intercourse less frequently, and were less satisfied with sex than a control group. In this study, however, index subjects were chronically institutionalized, and they were not demographically comparable to the control group. Another study (McEvoy et al. 1983) found that even among chronically institutionalized women with schizophrenia, most had a continued interest in sex and were sexually active. Raboch (1984) found that although it took longer for patients with schizophrenia to have a first date, first kiss, first coitus, and first marriage, the sex lives of those patients who lived harmoniously with partners were no different from those controls who were not mentally ill. Patients cited institutionalization as an obstacle to sexuality (Raboch 1984; Bell et al. 1993).

Investigators studying more community-based samples found high rates of sexual exploitation and sexual risk behaviors among women with schizophrenia. Courmos et al. (1994) found that the majority of women with schizophrenia in their sample were sexually active. Most had multiple sexual partners, and about half had engaged in sex exchange (i.e., providing sex in exchange for either money or material goods). About 45 percent used addictive drugs or alcohol during sex. Although all women in the sample had heterosexual activity, about 20 percent also had homosexual encounters. Sexual activity in this study sample almost always posed a high risk of HIV infection.

To distinguish the effects of schizophrenia from socioeconomic factors, Miller and Finnerty (1996) compared sexual attitudes and practices of women with schizophrenia to those of demographically comparable women who were not mentally ill. Patients and controls were similar in their frequency of sex, in the age at which they

became sexually active (typically adolescence), in their rates of sexual abuse and feeling pressured to have sex (high for both groups), and in their rates of sexually transmitted diseases. However, the groups differed significantly in important ways. Women with schizophrenia had more lifetime sexual partners and were less likely to have a current partner. They reported significantly higher incidences of being sexually assaulted and of sex-exchange behavior. Despite having the same frequency of sex as the control women, women with schizophrenia wanted sex less often and were less satisfied with sex. Although all the index women had heterosexual partners, significantly more index women than controls also had homosexual partners. In the context of high rates of HIV-risk behaviors, significantly fewer index subjects than control subjects had undergone HIV testing.

Regarding sexual knowledge, Rozensky and Berman (1984) found that patients with schizophrenia had many misunderstandings of sexual anatomy and physiology and seemed, as a group, to lack basic vocabulary for discussing sex. Attempts to teach sexual knowledge and safe sex to patients with schizophrenia have been successful in the short term (Berman and Rozensky 1984; Kalichman et al. 1995), but without reinforcement, the acquired knowledge and skills decay over time (Kalichman et al. 1995).

The effects of antipsychotic medication on sexuality and related functions are also significant in the lives of many women. In surveys, patients have cited psychotropic medication as a factor impairing their sexual interest, ability to lubricate, or ability to achieve orgasm (Verhulst and Schneidman 1981; Raboch 1984; Bell et al. 1993). In women, potential side effects of antipsychotic medication include breast engorgement, galactorrhea, and menstrual irregularity, as well as orgasmic dysfunction and decreased libido (Jensvold et al. 1996). Although some of these side effects are indirect—for example, decreased libido due to overall sedation—they are also direct effects of drug-induced elevations in prolactin (Jensvold 1996). Dopamine functions as a natural inhibitor of prolactin secretion; dopaminergic blockade releases this inhibition, elevating prolactin levels and thus interfering with the menstrual cycle, lowering libido, and causing galactorrhea about 30 to 70 percent of the time. While it is important to recognize these side effects, it is equally important not to miss a pituitary adenoma that could be causing the same symptoms. For this reason, it is advisable to measure prolactin levels in women who experience menstrual irregularities or galactorrhea. Mild elevations in the absence of other symptoms do not require further intervention, and antipsychotic medication can be safely continued. Large elevations, amenorrhea for 6 months or longer, or visual field loss warrants imaging studies to rule out pituitary adenoma.

In summary, available data support the notion that schizophrenia, *per se*, does not diminish sexual desire or sexual activity, although psychotropic medication and hospitalization may limit both. A major problem is the quality of sexual activity. In the current social context, many women with schizophrenia have chaotic and unsatisfying sex lives, with multiple partners, high rates of coerced or forced sex, high rates of HIV-risk behavior, and limited knowledge about sexuality. Poor judgment, limited impulse control, difficulties in forming interpersonal relationships, and high rates of comorbid drug and alcohol addiction may contribute to these problems (McCullough et al. 1992; Kalichman et al. 1995).

Pregnancy

One result of these sexual patterns has been a marked increase in fertility rates among women with schizophrenia. The effects of pregnancy, the risks of prescribing versus withholding psychotropic medication during pregnancy, and risk factors for offspring have therefore become matters of increasing concern.

Some studies have investigated the effects of pregnancy on the mental health and well-being of women with schizophrenia. McNeil et al. (1984*b*) compared women with psychotic disorders to control women who were not mentally ill during pregnancy. Most control women reported no changes in their mental health during pregnancy. Among the mentally ill women, those with schizophrenia were the most likely to report worsening mental health during pregnancy: 59 percent said their mental health deteriorated and 29 percent said it improved. Notably, their psychiatric records usually did not reflect that their mental health providers were aware of these changes. Worsening mental health during pregnancy seems particularly prominent among younger women (McNeil et al. 1984*a*) and among women whose pregnancies are unwanted (Grunebaum et al. 1971). During pregnancy, extreme worries about mothering are demonstrated by many more women with schizophrenia than by women with other mental illnesses or by controls who were not mentally ill (McNeil et al. 1983).

Other studies have investigated outcomes for the offspring of women with schizophrenia. Most data suggest that about 10 to 15 percent of the children of a parent with schizophrenia will develop schizophrenia (Walker and Emory 1983; Silverman 1989), while about 50 percent will develop some type of psychiatric disorder (Silverman 1989). Some contributory factors to a high level of risk are pregnancy related, such as lack of prenatal care, prenatal exposure to teratogenic or toxic drugs, and obstetric complications. For this reason, it is important to know the

rates of these potentially reversible risk factors among women with schizophrenia.

Rates of drug addiction are high among patients with schizophrenia. The lifetime prevalence of an alcohol or illicit drug use disorder is about 47 percent among patients with schizophrenia (Ziedonis and Fisher 1994). Rates of nicotine dependence among patients with schizophrenia are in the 74 to 92 percent range, compared with 35 to 45 percent of psychiatric patients in general and 30 to 35 percent of the general population (Goff et al. 1992). A chart review of women with psychotic disorders hospitalized during pregnancy revealed similarly high rates of alcohol, cigarette, and illicit drug use during pregnancy (Rudolph et al. 1990). Miller and Finnerty (1996), in a study of women with schizophrenia, found that 78.1 percent of their sample acknowledged substance abuse during pregnancies.

Rates of obstetric complications are higher among women with schizophrenia than in the general population (Sacker et al. 1996), not from schizophrenia directly, but rather from associated risk factors related to low socioeconomic status (Walker and Emory 1983). The hypothesis that psychotic behavior additionally impairs obstetric outcome is supported by the finding that the risk of obstetric complications is higher if the mother has schizophrenia than if the father has schizophrenia (Sacker et al. 1996). Psychosis may contribute to delayed recognition of pregnancy, misinterpretation of somatic changes, lack of recognition of labor, attempts at premature self-delivery, and precipitous delivery (Stewart 1984; Muqtadir et al. 1986; Spielvogel and Wile 1986; Miller 1993). However, psychotic behavior alone does not account for the findings, since the increased risk of obstetric complications is apparent even before the onset of psychosis (Sacker et al. 1996).

Women with schizophrenia are less likely to receive prenatal care than demographically comparable women who are not mentally ill (Miller and Finnerty 1996; Sacker et al. 1996). Among women who do receive prenatal care, psychiatric symptoms are underreported, perhaps in part due to fear of custody loss (Krener et al. 1989). For these reasons, there may be less opportunity to intervene when complications arise.

The high rate of unplanned, unwanted pregnancies among women with schizophrenia makes intervention even more difficult. Compared with controls who are not mentally ill, women with schizophrenia have the same average number of pregnancies, but a greater percentage of them are unplanned, and a greater percentage of the unplanned ones are unwanted (Miller and Finnerty 1996). Compounding the risk, many women with schizophrenia (33% in one recent study) report being victims of violence

during pregnancy; this is significantly higher than the rate among controls who are not mentally ill (Miller and Finnerty 1996).

A subgroup of women at especially high risk are those who delusionally deny their pregnancies. Psychotic denial tends to be intermittent and can be associated with refusal of prenatal care, failure to recognize labor, precipitous delivery, and, in rare cases, neonaticide. Pregnancy denial may be, in part, an attempt to stave off overwhelming grief about custody loss or other pregnancy-related stresses, as it is significantly more likely to occur in those who anticipate losing custody or who have already lost custody of an infant (Miller 1990).

Pregnancy may have substantial effects on the availability of social and professional support. Although family and public agency support can sometimes rally in response to a pregnancy (Krener et al. 1989), this is often not the case. It can be extremely difficult to find facilities equipped to care for pregnant women with schizophrenia (Dolinar 1993). Many psychiatric facilities refuse admission to pregnant women out of concerns about obstetric complications, premature labor, or the risk of other patients harming a pregnant woman (Casiano and Hawkins 1987). For those women who are psychiatrically hospitalized during pregnancy, parenting assessment and custody planning are rarely part of their care (Rudolph et al. 1990). Only 10 of the 50 public-sector State psychiatric systems in the United States report having policies related to hospitalized pregnant women; these policies focus mostly on medication management and competency to consent to abortion and rarely cover other issues (Nicholson et al. 1993). Pregnancy also excludes many women from assisted-living arrangements (Bachrach 1988).

Antipsychotic Medication During Pregnancy

For many women, becoming pregnant reduces their access to psychotropic medication. Due to concerns about potential effects of medication on the fetus (on the part of the woman, her family, or her physician), a woman who otherwise adheres to her medication regimen may discontinue pharmacotherapy during pregnancy. It is estimated that 65 percent of women with schizophrenia who do not maintain medication will relapse during a pregnancy (Casiano and Hawkins 1987). Acute psychosis during pregnancy is likely to adversely affect nutrition, self-care, prenatal care, and stress levels; it may also lead to other major risks, such as violence, suicide, attempts at premature self-delivery, and precipitous delivery. Furthermore,

discontinuing medications during pregnancy may adversely influence the life course of the woman's illness, as greater consistency of antipsychotic treatment results in significantly greater improvement over time (Szymanski et al. 1996).

To date, no psychotropic medication has been approved by the U.S. Food and Drug Administration for use during pregnancy (Altshuler et al. 1996). However, because of the grave risks of withholding medication, it is important to examine available data about medication risks during pregnancy so that a thoughtful risk-benefit analysis can guide decisionmaking. Among antipsychotic agents, the ones that have been most systematically studied during pregnancy are the phenothiazines, most of which have been in widespread use since the 1950s. In addition to their use for women with psychotic disorders, these agents were used during pregnancy as anti-nauseants, as tranquilizers for women at risk for repeated spontaneous abortion, and for sedation during labor. Methodological flaws in many studies, especially the impossibility of fully controlling for confounding variables, limit our ability to draw firm conclusions but nevertheless provide useful information.

A prospective, longitudinal, controlled study of offspring exposed in utero to phenothiazines found no significant increase in the likelihood of congenital anomalies (Milkovich and Van den Berg 1976), although reanalysis of the data called attention to a nonsignificant trend toward increased anomalies after phenothiazine exposure during weeks 4 through 10 (Edlund and Craig 1984). Another prospective study (Rumeau-Rouquette et al. 1977) shed light on possible reasons for this trend by separately examining data for different classes of phenothiazines. For example, in utero exposure to phenothiazines with 3-carbon side chains (e.g., chlorpromazine) was associated with significant increases in nonspecific congenital anomalies. Exposure to piperazine phenothiazines was not. Commonly used piperazine phenothiazines in the United States include trifluoperazine and fluphenazine. The former was not included in the above-mentioned study, but large series of case reports of trifluoperazine use during pregnancy have found incidences of congenital anomalies that are the same as baseline rates (Moriarty and Nance 1963; Rawlings et al. 1963; Schrire 1963). Data from the Collaborative Perinatal Project (Heinonen et al. 1977) were used to calculate a relative risk of 1.04 for first-trimester phenothiazine exposure being associated with congenital anomalies. However, a meta-analysis that pooled data from all available studies of first-trimester phenothiazine exposure found a small increase in relative risk: The rate of congenital anomalies in phenothiazine-exposed offspring was 2.4 percent, compared to about 2.0

percent in the general population (Altshuler et al. 1996). None of the above-cited studies specified dosages used by subjects; however, since most subjects were using phenothiazines for obstetric conditions rather than for psychotic disorders, the average doses were probably lower than standard antipsychotic regimens.

Fewer systematic data are available on other antipsychotic agents. A retrospective study comparing offspring exposed to haloperidol in utero with control offspring found no difference in rates of congenital anomalies (Van Waes and Van de Velde 1969). However, haloperidol was prescribed in these cases for hyperemesis, and it was thus prescribed in much lower doses (mean, 1.2 mg/day) than are typically used for antipsychotic treatment. Even less is known about newer "atypical" antipsychotic agents. One case report demonstrated that clozapine given to a pregnant woman can accumulate in fetal serum (Barnas et al. 1994). Another raised the possibility that clozapine, by increasing social functioning, may increase the likelihood of pregnancy, particularly since it does not increase prolactin as do most older antipsychotic agents (Waldman and Safferman 1993). Although no reported adverse effects can be directly attributed to clozapine, its potential effect on developing bone marrow and other fetal systems is unknown.

Another factor in assessing teratogenicity is the potential for interaction with other agents. In the case of antipsychotic medication, an important interaction may occur with agents present in cigarettes. There is a significantly greater frequency of smoking among pregnant women with schizophrenia than among pregnant women who are not mentally ill (McNeil et al. 1983). One study (Bracken and Holford 1981) found that pregnant women who smoked cigarettes and used an antipsychotic medication had a 3.7 percent higher risk of giving birth to a malformed child than women who only smoked. The fact that smoking was not specifically controlled in most studies of in utero antipsychotic exposure may account for some of the conflicting findings. If neuroleptics are not teratogens themselves, they may potentiate the teratogens in cigarette smoke.

Since antipsychotic agents may affect developing neurotransmitter systems in the fetal brain, an important question is whether they produce behavioral teratogenicity—enduring behavioral changes as a result of changes in dopaminergic or other receptors. Early uncontrolled studies of small numbers of women taking neuroleptics during pregnancy found no behavioral or developmental abnormalities in their offspring (Kris and Carmichael 1957; Kris 1965). A prospective, longitudinal study found no difference in IQ scores in children exposed to phenothiazine in utero (Slone et al. 1977). However, children up

to age 7 exposed to dopamine blocking agents in utero were significantly taller and/or heavier than control children, despite no differences in weight or length at birth (Platt et al. 1988). Although this is not clinically problematic, it suggests the possibility that in utero effects on dopamine influenced later growth, perhaps through effects on growth hormone.

Aside from teratogenicity, neonatal side effects are another risk of antipsychotic use during pregnancy. Some infants born to mothers who have been taking antipsychotic drugs throughout pregnancy exhibit increased tone, motor activity, and tremulousness (Auerbach et al. 1992), probably related to sudden prenatal withdrawal from the drugs. In most cases, these signs are not clinically problematic. In rare instances, more severe symptom constellations appear including shrill crying, irregular respiration, coarse tremors that can involve the whole body, unusual hand posturing, increased muscle tone, vigorous reflexes, arching of the back, tongue thrusting, grimacing, hyperactivity, irritability, difficulty feeding, and erratic sleep patterns (Hill et al. 1966; O'Connor et al. 1981; Sexson and Barak 1989). Such symptoms are not present immediately at birth (unless the woman suddenly discontinued her medication before delivery) but may appear within hours to days later. Their appearance and timing are consistent with withdrawal emergent syndrome (Sexson and Barak 1989). The symptoms gradually decrease in intensity over several months, eventually disappearing.

Other neonatal side effects may be related to the anticholinergic or antihistaminic properties of neuroleptics, and they may be dose related or enhanced by other anticholinergic or antihistaminic drugs given to the mother. For example, there have been case reports of functional intestinal obstruction in babies exposed to antipsychotic agents along with benzotropine (Falterman and Richardson 1980) and of sedation and hypotonia in a newborn exposed to high doses of chlorpromazine (as much as 1,800 mg/day) toward the end of pregnancy (Hammond and Toseland 1970). Chlorpromazine may also increase the risk of neonatal jaundice in premature (but not full-term) infants (Scokel and Jones 1962).

Based on available data, guidelines can be developed for prescribing antipsychotic medication during pregnancy. First, the risks of prescribing pharmacotherapy must be compared to the risks of withholding it. Next, the clinician must establish the patient's capacity to understand this risk-benefit analysis and participate meaningfully in a decision about pharmacotherapy. For patients who are unable to give informed consent, a temporary guardian can be appointed and authorized to act on the patient's behalf. Some courts will appoint a guardian ad litem to assess risks and benefits to the fetus.

Once a decision to prescribe has been made, the choice of agent can be governed by considering efficacy, maternal and fetal side effects, and how much is known about a given drug during pregnancy. Among medications that have been systematically studied, trifluoperazine and haloperidol appear to confer the least risk of both teratogenicity and neonatal side effects. Clozapine should be avoided whenever possible due to the lack of systematic study of its effects during pregnancy, its potential to accumulate in fetal serum, and the theoretical risks of agranulocytosis in developing fetal bone marrow or lowering seizure thresholds in newborns. Chlorpromazine should be avoided when possible, due to its tendency to lower maternal blood pressure (thus risking placental hypoperfusion), its possible association with increased rates of congenital anomalies, and its possible tendency to promote jaundice in premature infants. Whenever possible, it is best to use only one antipsychotic agent, as the effects of drug interactions during pregnancy are unknown.

A further dilemma arises when a pregnant woman develops neuroleptic side effects. Agents used to treat extrapyramidal symptoms (EPS) pose additional risks during pregnancy. Although few systematic data are available, some studies have highlighted the possible teratogenicity of antihistamines, anticholinergic agents, and amantadine. A retrospective study found that children with oral clefts had a higher likelihood of first-trimester antihistamine exposure than did normal controls (Saxen 1974). The Collaborative Perinatal Project found that exposure to antihistaminic or anticholinergic agents early in pregnancy was associated with higher than expected rates of nonspecific congenital anomalies (Heinonen et al. 1977). Two studies of pregnant women taking amantadine found increases in the expected rate of congenital anomalies, including cardiac anomalies, and in nonspecific pregnancy complications (Golbe 1987; Rosa 1994). Furthermore, some agents may have transient neonatal side effects; newborns exposed in utero to diphenhydramine, for example, may experience sedation, tremor, diarrhea, or, more rarely, seizures (Parkin 1974).

These data suggest that prophylactic use of agents to treat EPS during pregnancy is not warranted, although sometimes their use for severe EPS may be necessary. Pregnancy is a time of high calcium demand, and relatively low calcium levels may predispose women to EPS (Kuny and Binswanger 1989). Careful attention to nutrition and prenatal vitamin supplementation may minimize the likelihood of developing EPS. Akathisia may be safely and effectively treated with such beta-blocking agents as propranolol or atenolol (Rubin 1981), and neuroleptic malignant syndrome can be treated with supportive measures, with or without bromocriptine (James 1988).

Vigorous efforts to lower other risk factors, such as cigarette smoking, may also lower the potential risks of antipsychotic medication.

Many women with schizophrenia have comorbid psychiatric disorders, such as depression, mania, obsessive-compulsive disorder, or addictive disorders. These conditions may respond to pharmacotherapy or electroconvulsive therapy (ECT). As newer agents become available, prescribing practices change rapidly. When prescribing such agents for women of reproductive age, it is important to consider potential pregnancy when weighing risks. For example, the use of valproate as a mood-stabilizing agent in patients with schizoaffective disorder rose from 0 percent in 1989 to 25 percent in 1994 (Fenn et al. 1996). Although not absolutely contraindicated during pregnancy, valproate is a known teratogen (Omtzigt et al. 1992) and has been associated, in rare instances, with neonatal liver failure (Legius et al. 1987). A review of pregnancy-related risks of other psychotropic drugs and ECT is beyond the scope of this article, but recent comprehensive reviews can be consulted (Miller 1994a, 1994b, 1996; Altshuler et al. 1996).

The Postpartum Period

Although most psychotic episodes beginning after childbirth are due to mood disorders, the postpartum period may also be a time of high risk for exacerbation of schizophrenia. In a prospective study of women with psychotic disorders (McNeil 1987), 24 percent of those with schizophrenia became acutely psychotic within 6 months after having a baby. The severity of their illness was related to the likelihood of exacerbation after childbirth; 44 percent of women with schizophrenia whose histories included more than 3 months of total hospitalization became worse postpartum. Onset of psychosis was, on average, later for women with schizophrenia than for women with mood disorders. The length of their hospitalization was longer postpartum than the length of stay for postpartum mood disorders (McNeil 1986) or than the length of other stays (Yarden et al. 1966).

Postpartum exacerbations are important not only because of increased likelihood or duration of occurrence, but also because of their consequences for the mother-infant relationship. Acute symptoms after childbirth may include delusions that the birth did not occur, delusions that the baby is dead or defective, or hallucinations commanding the mother to harm the baby (Stewart 1984). In rare cases, such symptoms may result in infanticide.

Despite the high level of risk, there are major barriers to optimal mental health care postpartum. Many mothers refuse or postpone needed hospitalization because, except

in the few areas where mother-baby units are available, inpatient care means separation of mother and baby. Others avoid care due to fear of custody loss. In some cases, women are more psychotic than usual due to withholding medication during pregnancy, and they have therefore lost insight about the need for care. Others are overwhelmed by the logistics of coming to a mental health clinic while also taking the baby to a pediatrician, getting a postnatal checkup at an obstetric clinic, going to a family planning clinic for birth control, and obtaining financial and other resources for the baby—all the while experiencing the stresses and sleep deprivation of being a new mother.

Prescribing practices may need to be modified in the postpartum period as well. Sedating antipsychotic agents taken at bedtime may render a new mother unable to hear her baby crying (Kris 1965); this can be remedied by daytime dosing or switching to a different agent. Some women are particularly concerned about their weight gain or inability to lose weight postpartum, and they may not be willing to take any medication that promotes weight gain. Women who breastfeed may also avoid sedating antipsychotics, as even relatively small amounts in the mother's milk may sedate the baby (Stewart and Robinson 1993).

Parenting

Schizophrenia poses formidable challenges to being a parent, due to the illness itself and from associated socioeconomic problems. Schizophrenia often reduces the ability to discern nonverbal cues, recognize affects from facial expressions, and negotiate social situations (Corrigan and Green 1993). These impairments can result in difficulty parenting infants. Although mothers with schizophrenia, on the whole, spend as much time with their infants as mothers who are not mentally ill and provide the same level of basic physical care (Walker and Emory 1983), they are, as a group, less able to foster mutual social interactions with babies and more apt to misinterpret babies' cues (Gamer et al. 1976). Compared to mothers who are not mentally ill, they touch and play less with their babies (Gamer et al. 1976), either distancing themselves excessively or showing inappropriate, sometimes aggressive, involvement (Abemethy and Grunebaum 1972). They may also provide less stability, nurturance, and stimulation for their babies (Walker and Emory 1983). Psychotropic medication can further impair spontaneity and affective expressiveness toward children (Nicholson and Blanch 1994).

In addition to behavioral and interactive differences, attitudinal differences between mentally ill and nonmentally ill parents have also been demonstrated (Cohler et al.

1976). As a group, mentally ill mothers believe less in the importance of mother-child reciprocity, and less in the possibility of distinguishing their own needs from those of their children. These potential impairments in parenting often occur in the context of limited social support. As a group, people with schizophrenia tend to have weaker social networks than people who are not mentally ill or people with mood disorders (Flaherty and Greiner 1991). Compared to controls who are not mentally ill, mothers with schizophrenia are significantly less likely to be married or cohabiting at the time of delivering a child (McNeil et al. 1983) or to have someone to help them raise the child (Miller and Finnerty 1996). Among those who are married, their spouses have high rates of psychiatric disorders compared to the general population and so may be limited in their ability to provide support. This relative lack of social support is not currently supplemented by an adequate safety net in the service delivery system. A needs assessment in New York State revealed inadequacies in the areas of housing for mentally ill mothers and their children, family services, support groups for mentally ill parents, respite care, specialized clinical services, in-home services, transportation, and outreach about existing resources (Blanch et al. 1994).

Resultant deficits in parenting capability can have a profound impact on mothers with schizophrenia and their offspring. Many mothers with schizophrenia experience one of the most profound losses possible: the loss of custody of their children. Custody loss happens to a majority of women with schizophrenia (Coverdale and Aruffo 1989; Miller and Finnerty 1996). The adoption rate, however, is very low; most children of mothers with schizophrenia spend some time, often considerable time, in the foster care system (Miller and Finnerty 1996). Although most women with schizophrenia acknowledge inability to meet their children's basic needs (Miller and Finnerty 1996), motherhood remains a centrally important role for many, so the finality of adoption rarely feels acceptable. Parenting for many women with schizophrenia is intermittent, with periods of custody loss and visits alternating with regaining custody, or, where family support is better, intermittent caregiving by relatives. When custody loss becomes permanent, the resultant grief can be devastating for many women (Apfel and Handel 1993), although some also experience it as relief from an overwhelming burden.

For children of mothers with schizophrenia, some of whom are genetically vulnerable and have been exposed to other risk factors, the quality and predictability of parenting may be critical. There is some evidence that children of mothers with schizophrenia are more difficult to raise, in that they are more likely to be "difficult" and "slow to warm up" compared with controls and mothers

who are not mentally ill (Walker and Emory 1983). These constitutional difficulties, combined with inconsistent or inadequate parenting, may pose risks for the children's development. Compared with the offspring of mothers who are not mentally ill, children of mothers with schizophrenia have lower Bayley Mental and Motor Scale scores (Bayley 1993) and more erratic physical growth (Walker and Emory 1983).

There are risks to children, both in remaining with an acutely psychotic or inadequate parent and in being separated from a mentally ill parent. For children, the degree of exposure to a parent with schizophrenia correlates with their degree of maladjustment later in life (Walker and Emory 1983). However, separation from a mother with schizophrenia during childhood also results in a higher incidence of psychiatric symptoms in adolescence and young adulthood (Walker and Emory 1983). Since both contact and separation pose risks, developing standards for child custody is critical. Parenting adequacy, rather than optimal parenting, seems to provide the safest criterion for both children and mothers: in the absence of frank child abuse or gross neglect of a child's basic needs, children are generally better off remaining with mentally ill parents.

Applying this standard optimally requires three major changes in human services delivery systems:

1. Mental health care delivery systems and child welfare systems need to collaborate closely, and parenting must be viewed as a concern of the mental health system. The current system is far from this ideal. As of 1990, only 16 U.S. States routinely collected data on whether recipients of public-sector mental health services had young children (Nicholson et al. 1993). Most States did not have systems in place to assess parenting skills, provide parenting rehabilitation, allow children to visit psychiatrically hospitalized parents, or provide housing for mentally ill women and their children. Extreme fragmentation and unnecessary duplication of services exists between mental health systems and child welfare systems in terms of location, access, funding, personnel, and philosophy (Blanch et al. 1994).

2. Methodologically sound procedures for parenting assessment must be employed. Although the studies cited above allow some generalizations about parenting deficits associated with schizophrenia, there is a wide range of individual variation in parenting capability. Current methods of assessing parenting capability suffer from profound methodological flaws (Budd and Holdsworth 1996). Comprehensive evaluation of parenting adequacy in parents with mental illness includes psychiatric evaluation, record review, interview of collateral historians, developmental assessment of children, direct observation of parent-child interactions, assessment of parenting attitudes and knowledge, and evaluation of the home environment

and the social support network (Volkmar et al. 1990; Jacobsen et al. 1997).

3. Parenting rehabilitation services must be offered. Mental health providers have come to recognize that psychosocial and vocational rehabilitation are key elements in treating schizophrenia. However, there is still widespread failure to recognize that many people with schizophrenia consider parenting to be their main vocation and their relationship with their children to be their most important social exchange. Despite the success of some programs designed to improve the parenting skills of mothers with schizophrenia (Waldo et al. 1987), rehabilitation programs for mentally ill clients seldom include parenting rehabilitation (Nicholson et al. 1996).

Family Planning

The high rates of unplanned and unwanted pregnancies among women with schizophrenia underscore the importance of understanding their attitudes and practices related to family planning. Surveys reveal that even though many sexually active women with serious mental illnesses do not want to become pregnant, they do not use birth control (Rozensky and Berman 1984; Coverdale and Aruffo 1989). Many chronically mentally ill women lack basic knowledge of contraception (Abernethy 1974; McEvoy et al. 1983). When surveyed, most women patients have said they would like to have family planning counseling in mental health settings (Grunebaum et al. 1971), and most mental health professionals have agreed that family planning information should be provided to patients with mental illness (Coverdale et al. 1992). Followup studies of patients who have received family planning counseling in psychiatric hospitals have shown that the majority continued contraception after discharge and that many patients had upgraded to safer, more effective methods of contraception (Abernethy et al. 1975). Yet, despite the need and desire for services with demonstrated efficacy, there are indications that providing family planning counseling in mental health settings is relatively rare. Grunebaum et al. (1971) found that only 1 of 21 hospitalized mentally ill women reported having discussed family planning with anyone in the hospital. Rudolph et al. (1990) found that family planning and contraception were not mentioned in most charts of women with psychotic disorders who were hospitalized during pregnancies. Coverdale et al. (1992) surveyed mental health professionals and found that they reported raising the topic of family planning to about 25 percent of their patients; only 10 percent of their female patients confirmed this.

Offering family planning services in conjunction with mental health services has many advantages for women

with schizophrenia. A central one is ease of access. Negotiating the logistics of attending separate clinics poses a formidable barrier to care for many patients. Furthermore, standard family planning clinics may be less attuned to the issue of how schizophrenia affects informed consent (Coverdale et al. 1992; McCullough et al. 1992). "Ulysses contracts," in which a woman gives informed consent when she is most stable and indicates that she wants her consent to remain valid if she later becomes more psychotic, may be helpful. Mental health professionals are also in a better position to offer psychosocial skills training to reduce unwanted sex and to understand how mental illness may influence choice of contraception. For example, contraceptive implants and intrauterine devices sometimes become a focus of delusions of control (Coverdale et al. 1993). Intrauterine devices may confer additional risk for women whose schizophrenia interferes with pain perception because they might not recognize early signs of pelvic inflammatory disease (Bachrach 1985). Oral contraceptive regimens, in addition to affecting mood in some patients, are difficult for many patients to remember. Barrier techniques may be even less effective, especially given the high rates of unplanned and pressured sex among women with schizophrenia (McCullough et al. 1992; Miller and Finnerty 1996); however, when used properly, they confer protection against HIV infection.

For many women with schizophrenia, long-acting injectable hormonal contraception is optimal. Most such preparations last for 3 months and have no clinically significant interactions with antipsychotic medication. For patients who want both antipsychotic treatment and contraception, but who have difficulty remembering to take daily medications, receiving depot neuroleptic injections in conjunction with contraceptive injections can be helpful.

Implications for Mental Health Practice

Mental health practice that considers sexuality, reproduction, and parenting can be highly effective in lessening risks for women with schizophrenia and their offspring. Specific measures to consider include the following:

1. Incorporate sex education and assertiveness training into psychosocial rehabilitation efforts.
2. Screen patients with chronic mental illness for HIV-risk behaviors and HIV infection.
3. Create systems for early detection of pregnancy in chronically mentally ill women. The State of Illinois, for example, mandates pregnancy testing for women of reproductive age on every State psychiatric hospital admission. Pregnancy test results go to a specific staff member, who assesses the level of risk and sends patients at highest risk

to a specialized unit for pregnant mentally ill women (Miller 1992). Similar systems could be created for outpatient clinics, day programs, partial hospital outpatient programs, assertive community treatment teams, intermediate care facilities, and other mental health delivery systems.

4. Enhance education about prescribing psychotropic medication for pregnant and potentially pregnant women. A model curriculum for this purpose, as well as for issues of women's mental health in general, has been developed by the Committee on Women of the American Psychiatric Association (Spielvogel et al. 1995).

5. Use prophylactic measures to reduce the likelihood of relapse during the vulnerable postpartum period. Such measures include optimal pharmacotherapy and strong psychosocial supports. When new mothers must be hospitalized, the problem of mother-infant separation can be reduced by liberal visiting policies or by mother-baby units (Sneddon et al. 1981).

6. Improve methods of assessing parenting capability in mentally ill parents and provide parenting rehabilitation interventions.

7. Offer family planning in conjunction with mental health services.

By incorporating such measures into general psychiatric practice, we will be helping not only our current patients, but generations to come.

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