

Selective Review of Age-Related Needs of Women with Schizophrenia

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Abstract

Objective: Recognizing that needs differ between men and women with schizophrenia and that they vary over time, this review attempts to categorize the needs that are relevant to younger and to older women. **Method:** This is a selective literature review focusing on topic areas the two authors determined to be most germane to women with schizophrenia. Articles were selected on the basis of currency, comprehensiveness, and study design. Particular attention was paid to the voices of the women themselves. **Results:** There is considerable overlap between the needs of younger and older women with schizophrenia, but as a general rule, younger women require preventive strategies to stop the escalation of illness while older women require recovery interventions to regain lost hopes and abilities. **Conclusions:** There is clinical utility in cataloguing the needs of younger and older women with schizophrenia and conceptualizing interventions according to gender and age rather than viewing needed services along purely diagnostic lines.

Key Words: Schizophrenia, Women, Needs, Youth, Age

Introduction

Many adult mental health services are segregated with respect to age, with adult patients above a threshold age graduating to facilities for seniors (1). This interferes with continuity of service but has merit because the needs of younger and older individuals with serious mental illness, such as schizophrenia, while overlapping, also differ. In this paper, we will address the clinical needs, often unmet, of younger and older women who suffer from schizophrenia.

Method

In an attempt to differentiate the needs of younger versus older women with schizophrenia, we searched the recent literature with the following search terms: schizophrenia women + early diagnosis, hospital admission, psychoedu-

cation, antipsychotic treatment, sexuality, reproduction, employment, housing, substance abuse, family counseling, violence, suicide, eating disorders, recovery, menopause, social support, spiritual needs, cognitive decline, and quality of life. The choice of topics and their placement under either youth or age was a result of brainstorming; the choice of selected articles was by the authors' joint agreement based on currency, comprehensiveness, and study design. Wherever possible, patient participatory studies were included so that the insider's voice could be heard.

Results

The Needs of Younger Women

Prompt Diagnosis and Effective Treatment

It is generally accepted that the briefer the delay between the initial emergence of symptoms and diagnosis/treatment, the better the outcome. A long duration of untreated illness undermines self-confidence, friendships, and family cohesion as well as eroding a person's opportunities for academic and vocational achievement (2). Prompt diagnosis and treatment are, therefore, important needs. Since the process of

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symptom emergence in men is more similar to the one described in textbooks, men are easier than women for clinicians to diagnose. Male illness develops gradually (3) so that, by the time of first assessment, men may already have experienced school failures and social problems and they may already have put a distance between themselves and their friends and family members. The diagnosis is consequently more evident. Women's symptoms, by contrast, tend to erupt suddenly (4). Women's generally uninterrupted ability to socialize appropriately and to function cognitively despite symptoms may make diagnosis difficult. For this reason, clinicians must be especially alert to the presentation of schizophrenia spectrum disease in young women.

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Quality Hospital Admissions

Participants' opinions have been elicited on questions of quality in hospitalization. They identify effective communication, cultural sensitivity, and freedom from coercion as crucial. Treatment that works plus the safety and cleanliness of the ward environment are other requirements but, above everything else, patients care about the relationships they establish with care providers (5). The expectations of men and women are somewhat different, as are the experiences of the two sexes on psychiatric wards. Women are particularly sensitive to the ward environment, at times, for that reason, preferring all-women wards (6, 7). This is particularly true for younger women.

Appropriate Psychoeducation

Gaps persist in many psychoeducation programs between what patients and families are educated about and what they say they want to know. Reportedly, among the most important unmet needs for knowledge are advice on how to handle specific problems, help with preserving or regaining social functioning, help with structure and routine, information about community resources, and guidelines on how to access prompt assistance when it is required (8). Peer support groups that utilize same-sex peers as group facilitators are appreciated by patients, especially early in the course of illness (9). Male patients entering psychoeducational programs for schizophrenia know more about their illness than female patients, but female patients learn more in the course of the program (10). This may be because men (in general) are "systemizers" and learn well from neutral sources such as books whereas women are "empathizers" who learn best—in general—from human teachers (11).

Appropriate Psychopharmacologic Treatment

Women need antipsychotic treatment that is sensitive to female pharmacokinetics and pharmacodynamics (12). Dose requirements may need to be adjusted over the menstrual cycle (13) and during pregnancy and the postpartum period (14). Mood symptoms, which are prevalent in women but less so in men, need to be carefully addressed (15). Attention has to be paid to specific side effects that are either more prevalent in women than in men (16) or that women tolerate less well than men do. Side effects that impinge on hygiene and appearance (17) are a case in point.

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Attention to Sexuality

Sexual Drive: Women have sex-specific informational and counseling needs concerning sexuality, intimacy, STDs, especially HIV, and contraception (18). Throughout their reproductive years, many women with schizophrenia continue to be involved in intimate, sexual relationships, and are sometimes sexually victimized. Women with serious mental illnesses are at special risk because of neurocognitive and social competence deficits, exacerbated at times by the effects of substance abuse. Such deficits may impair the ability to identify cues that signal danger (19), making preventive interventions necessary. Whisman and Baucom (20) present a useful model of working on intimate relationships with individuals suffering from various forms of psychopathology.

Protection against Sexually Transmitted Infection: Because of relatively high rates of unprotected sex, young women and men with psychosis are at greater risk of sexually transmitted infections than their general population peers (21, 22). Barrier methods for women are unwieldy and relatively less effective than those for men, but lack of confidence can undermine a woman's ability to insist that her partner use a condom. Substance use on the part of either partner further increases condom inconsistency. Education in the use of female barrier methods, substance abuse counseling, and psychotherapy to increase assertiveness is useful in this context.

Contraceptive Counseling: Relatively few women with schizophrenia undergo regular gynecological examinations or discuss family planning with their partner or with their physician (23, 24). Sexual intercourse is often unplanned (25) and many women with schizophrenia do not know how to avail themselves of emergency contraception (26). Because knowledge of contraceptive methods is relatively lim-

ited among women with schizophrenia, access to a skilled, knowledgeable contraceptive counselor is important (27).

Employment Counseling

The rate of unemployment at first presentation for psychosis has been estimated to be nine times the local rate in a recent study (28). Jobs are less difficult for women with schizophrenia to find than for men because entry-level jobs are more likely to be “female” jobs. Nevertheless, specialist vocational training and supported employment opportunities are needed (29, 30).

Family Counseling

Though many families cope successfully with psychotic illness, many others suffer from the burden of care, anxiety about the future, feelings of being trapped, guilt at not being able to do enough, and a general sense of loss (31). When asked, families have indicated their wish for information and advice, affirmation, respect, a non-judgmental approach, a consistent one-on-one relationship with a healthcare provider, attentive communication and an individualized approach (32). Families of daughters have an extra concern that needs to be addressed: the potential birth of grandchildren whose mothers will not be able to look after them (33).

Substance Abuse Counseling

Patients with schizophrenia are prone to substance abuse for many reasons, coping with negative affect being chief among them. They use alcohol and drugs for nervousness, depression, worry, apathy, and troublesome suspicion. They use them to combat insomnia and to slow racing thoughts. They use them to increase self-confidence and generally to improve mood, with some differences in this regard between men and women (34). Gender interacts with illness, treatment, and addiction (35) and needs to be kept in mind when designing intervention programs.

Reproductive Needs

Pregnancy: Pregnancy in women with schizophrenia means an increased need for emotional and instrumental support. Forward planning is required with respect to decisions about the child, relationship with the father, accommodation for mother and child, financial support, and help with child rearing. Parenting classes are useful but must be geared to the needs of the patient. Medication adjustment is often necessary, many antipsychotics being associated with substantial weight gain and the subsequent risk of gestational diabetes (14). The most up-to-date recommendation with respect to antipsychotics during pregnancy is for low doses, avoidance of polypharmacy, and close clinical monitoring (36).

Referral to prenatal care is mandatory. Should a woman refuse medically necessary treatment, she can sometimes be treated involuntarily, but this will vary according to jurisdiction. Legal and ethical consultation may be necessary. Child protection agencies may need to be alerted should the patient require assistance once the baby is born (14).

Postpartum: There is a 25% risk that women with schizophrenia will develop postpartum psychosis within 4 weeks after delivery (37). Good liaison between obstetricians and psychiatrists is needed. Should postpartum psychosis occur, it needs to be detected early and treated promptly, usually in a hospital setting. Mother and baby must be protected from suicide (5% risk) and from infanticide (4% risk) (38). Women’s concerns during the postpartum period (new demands and expectations, shifting loyalties and priorities, difficulties in planning ahead, financial hardships, family tensions, concerns about breast feeding) need to be addressed (39).

Mother and baby inpatient units (MBUs), where mother-child contact can be maintained during acute episodes of illness and where clinical staff can assess and assist mothers with parenting skills, have been popular in the United Kingdom and in Australia, but a recent survey of MBUs found that the provision of services was highly variable. There is no hard evidence for the effectiveness of such specialized units (40).

Mothering: Approximately 50% of women with schizophrenia are parents (41) so that parenting classes, direct parenting coaching, support groups, and time-limited co-parenting support are all needed. These services can be delivered in a variety of settings (42, 43) including in the home (44). Comprehensive approaches such as family case management, 24-hour crisis services, active liaison and advocacy are all essential (45-47). Effective services need to bridge the adult/child mental health divide, with close interagency cooperation (48, 49). Cook and Steigman (50) advocate a focus on prevention of custody loss through advanced directives, respite care, and supports specifically designed to preserve the mother-child relationship.

Impulse Control

Violence: The one-year prevalence of serious assaultive behavior in adults with psychotic disorders was found to be 13% in a study by Swanson et al. (51). Three variables—past violent victimization, violence in the surrounding environment, and substance abuse—were associated with the risk of violent behavior; the more of these variables, the greater the risk. An important risk in this population is treatment non-compliance. There is a slightly greater prevalence of violence among young males than young females, but the difference is not marked. This emphasizes the importance of the provision of psychiatric care to both men and women in jails and prisons (52).

Suicide: In a recently reported seventeen-year longitudinal study of 21,169 suicides in Denmark with sex-age-time-matched population controls, schizophrenia was shown to mainly affect those aged 35 years or younger (53). Approximately half of all patients with schizophrenia attempt suicide at some point in their lives and from 4 to 13%, depending on the study, die of suicide. The mortality risk is approximately 1.6 times higher in men than in women, but in the general population, the male/female risk is threefold (54). This means that, in the presence of psychosis, women may act impulsively and aggressively to end their lives and use lethal means to do so (55).

Self-Harm: The co-occurrence of schizophrenia and Borderline Personality Disorder associated with impulsive self-harm behavior is not rare in women (56). Forty-nine percent of schizophrenia spectrum patients, mainly women, reported harming themselves (57). It is important to know that a personality diagnosis does not rule out the co-morbid diagnosis of psychosis.

Eating Disorders: The prevalence of schizophrenia in samples of patients with eating disorders is generally below 10%, greater in men than in women (58). In women with eating disorders, psychotic symptoms can usually be better explained by the accompanying starvation or the use of appetite suppressive drugs (59, 60). These are important distinctions with implications for gender-specific assessment and treatment.

Cultural Issues for Young Women

New immigrants experience difficulties in accessing and using mental health services due to language difficulty, stigma, and unfamiliarity with Western medicine as well as culture-specific beliefs and practices (61). For young women, there are strictures around moral codes, appropriate dress, food, relations with the opposite sex, marriage, and childbirth. Navigating between two worlds may be especially difficult for young women with schizophrenia. First-generation immigrant women diagnosed with psychosis are more vulnerable than other women to have a child taken into care. Social services in the host country may perceive appropriate parental behaviors very differently from the parents' perception of traditional parental behavior, and language and communication difficulties only increase the gap between social services and the parent. There is a need for culturally knowledgeable and culturally sensitive healthcare, including social service care (62).

With respect to ethnopsychopharmacology (63), there are cross-ethnic and cross-national variations in the dosing practices and side-effect profiles of psychotropics. As an example, Asians and Hispanics appear to require lower antipsychotic doses than White or African-American patients

to achieve the same result (64), outcomes being influenced by a complex interaction of genes, environment, and culture (65). Wherever possible, matching race, ethnicity, and culture of the mental health clinician with that of the service user will help to alleviate clashes of perspective and lead to improved understanding.

In summary, interventions for younger women with schizophrenia focus mainly on secondary prevention whereas interventions for older women, whose illnesses have had time to become more entrenched, will focus more on strategies for recovery of lost function.

The Needs of Older Women

The division between younger and older women is, of course, arbitrary. For instance, unlike most men, women with schizophrenia can develop schizophrenia in later life (the so-called second peak [66]), which means that accurate diagnosis and early treatment can be an important need even in older age. With age, psychotic symptoms tend to improve in men (67) but they often worsen in women (68). For middle-aged men and women with schizophrenia, physical health, memory, and social functioning become priority needs (69). Meesters et al. (70) interviewed patients with schizophrenia whose mean age was 60 and who reported seven to eight needs each. Both men and women believed that their psychological and social needs (psychological distress, daily activities, social contacts) were the ones most often left unattended (71).

Antipsychotic Prescription at the Time of Menopause

Menopause brings with it physiological changes that affect optimal drug prescription. Because of falling estrogen levels, some women over age 50 lose their responsiveness to antipsychotic medication (72). The variability that exists among individuals in terms of drug response increases at menopause and is greater for the oral route than for the intramuscular/intravenous routes (73). This may be why, for some women with schizophrenia after menopause, oral medications appear to lose effectiveness while depot injections of the same antipsychotic continue to be effective (74).

Menopausal Symptoms

Menopause also brings characteristic symptoms: sleep disturbances, hot flashes, cognitive impairment and sexual difficulties, all of which need attention. Twenty-five to fifty percent of menopausal women experience sleep problems at the time of menopause (75, 76). Cognitive Behavioral Therapy targeted at insomnia, hormone replacement therapy, continuous positive airway pressure for sleep apnea and clonazepam for REM sleep disorder may all be needed. Hot flushes

and night sweats are due to disturbance of the temperature-regulating mechanism in the hypothalamus, which means avoiding alcohol, caffeine and spicy foods. Exercise, paced respiration, acupuncture and dietary phytoestrogen are useful and, sometimes, prescribed medication and hormone replacement is required (77). Estrogen given at the critical period, shortly after the menopause, can protect cognitive function (78, 79). Female sexual functioning is impaired at menopause due to vaginal dryness and dyspareunia, and this is accompanied by a decline in sexual arousal and interest (80). Addressing these issues is critical to well-being (81).

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Physical Health Needs

Problems of aging such as cognitive decline and chronic medical conditions may be exacerbated by schizophrenia and can heighten the risk of premature mortality (82). Compared to the overall population, individuals with schizophrenia show accelerated physical aging (with increased and premature medical comorbidity and mortality) (83). Older women with schizophrenia are at risk for neglect of health needs because cognitive deficits, general apathy and mistrust of “the system” prevent them from seeking help and maintaining contact with care providers (84).

Patients with schizophrenia have twofold to threefold higher mortality rates than the general population; this corresponds to a 10- to 25-year reduction in life expectancy. There are four main reasons for the excess mortality and reduced life expectancy. First, is a suboptimal lifestyle (unhealthy diet, excessive smoking and alcohol use, and lack of exercise). Second, antipsychotic drugs have adverse effects on health. Third, physical illnesses are diagnosed late and insufficiently treated. Lastly, there is the risk of suicide and accidents. Poverty, social isolation, mistrust of health providers and living in unsafe accommodations all contribute (85-87).

Oncology: The relationship between cancer and schizophrenia is not straightforward. Published studies examining the incidence of cancer in schizophrenia patients report increased, reduced or similar incidence compared with the general population. What is often highlighted is the relative lack in this population of cancer screening, participation in chemotherapy trials, and surgical cancer treatment. The increased risk of metabolic and cardiovascular disease in

schizophrenia may heighten risk for certain cancers (88, 89).

Needs Associated with Cognitive Decline

The rate of cognitive aging in individuals with schizophrenia does not differ from the rate in the general population but the starting point tends to be lower and a subgroup with low educational level shows a definite decline in cognitive ability (83), which must be distinguished from other forms of cognitive decline and dementia. In a study by Harvey et al. (90), 30% of schizophrenia patients deteriorated from a baseline of minimal or mild cognitive and functional impairment to dysfunction severe enough to warrant a secondary diagnosis of dementia. The vulnerability to dementia is increased by smoking, diabetes, and lack of physical activity (91). Social isolation is also a factor (92), which makes it seem likely that individuals with schizophrenia bear increased susceptibility. Men and women appear to be at approximately equal risk, although women live longer so there are likely to be more elderly women with Alzheimer’s than elderly men (93-95).

Encouragement of physical and mental activity as well as social engagement is needed to slow cognitive decline (96, 97).

Needs Associated with Quality of Life

On the whole, for treated patients with schizophrenia, psychosocial function and subjective quality of life improves with age. Psychotic symptoms are diminished, there are fewer psychiatric relapses requiring hospitalization and better self-management. Many older adults with schizophrenia accommodate illness into their lives, learn to cope successfully, and enjoy enhanced self-esteem and increased social support. Most individuals with schizophrenia see significant improvement in their quality of life (83).

Achieving a satisfactory quality of life as one ages has been called successful aging and this overlaps with the concept of recovery in schizophrenia. Whereas successful aging, as defined by Rowe and Kahn (98), is attained by about 19% of the general population, it has been reported in only 2% of those with schizophrenia (99). Patients with schizophrenia who are seen as having successfully aged reach a state where negative symptoms are few and subjective quality of life is perceived as high (100-102). Preliminary results indicate that women achieve this state more readily than men (103).

Bereavement

Living through the gradual deterioration of the health of one’s aging parents, especially when one has been dependent on them, as is the case for many individuals with schizophrenia, is extremely stressful. With the death of parents, come emotional and security losses that have a profoundly destabilizing effect (104). There are issues of guilt

and regret, shifts in family relationships and fundamental changes in lifestyle (105). Bereavement counseling is needed as well as practical advice on how to begin the attempt to restructure one's life.

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Housing Needs

Although good housing is important throughout life, perhaps especially for women with children, it becomes critical as people age and after parents die and the parental home is no longer available for short- or longer-term stays. The challenge of finding and maintaining appropriate accommodation becomes critical at this stage of life (106).

A significant number of older people with enduring mental illness live in nursing homes that may or may not be able to meet their many needs, which include nutrition (with many being overweight and suffering from diabetes), accessible transportation, opportunities for companionship and socialization and facilitation of leisure time activities. Integration of housing and mental health services is a good option for many (107).

Needs for Social Support

Social support in all its aspects is critical as one ages (108); as one loses important attachment figures and social influence, one requires the guarantee of easy access to needed goods and resources. Even though social support in the schizophrenia population increases with age (83), the pain from a lifetime of social exclusion remains (109). Programs that target social opportunities such as befriending, peer support, or specific interventions that address social anxiety and social functioning for all stages of psychosis have, in Australia for example, been judged essential (110).

Older adults have reported a stronger desire for involvement in decision-making than their younger peers (111). However, both age groups are similar in their desire for information to aid in decision-making. The majority in both age groups prefers a collaborative role for psychiatric medication decisions, an autonomous role for decisions related to psychosocial interventions, but a more passive role with their family doctor for general health problems.

Self-Management Needs

In older age, most individuals realize that their personal behavior influences their health. They know, or should know, that they are responsible for monitoring their diet and

their activity level. They have learned or should have learned to control unhealthy habits such as smoking and drinking alcohol. They know how to organize their medication intake, recognize and report to their physician adverse effects or failure to achieve intended gains. They follow through with appointments, screening referrals, and medical instructions. They have learned to economize and save for a rainy day. Engagement in healthy behavior is essential to improvement and maintenance of physical and mental health. In order to be able to self-manage, patients need information, tools, encouragement, and support (112, 113). Although there are as yet no clear guidelines, some of the specifics of effective self-management differ in men and women (114).

Spiritual Needs

As one gets older, the meaningfulness of life becomes important and one begins to address existential questions (115). The results of a recent review indicate that religion can either aggravate or ameliorate schizophrenia symptoms (116). Spirituality has, on the whole, been associated with resilience to stressors, giving hope and meaning to suffering. For approximately 45% of patients with psychosis, spirituality and religiousness help with coping (117). Positive religious coping is frequent among the population with severe mental illness and is associated with better outcome, especially in specific cultural/ethnic groups and perhaps more so in women than in men (118).

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Cultural Issues for Older Women

It becomes increasingly difficult as one ages to adapt to new customs and ways of life, which augments the difficulties encountered by older immigrants, especially those burdened with mental health problems. Resolving issues of social exclusion with or without additional layers of racism and stigma becomes critically important. Bhui and Sashidharan (119) have debated the question of separate services for ethnic minorities. They concluded that addressing institutionalized practices and tackling institutional racism would be preferable. An example is to accommodate into care plans patients' cherished cultural, spiritual and religious beliefs. Therapies have evolved that pay special attention to gender and culture (120). They examine the ways gender intersects with other sources of inequity to create differences

in power, status, and privilege, altering the quality of relationships and, in turn, undermining mental health and impeding recovery.

In the general schizophrenia literature, patients have identified four key processes that underlie recovery: finding hope, re-establishing identity, finding meaning in life, and taking responsibility (121). The needs of aging women with schizophrenia correspond with attempts at eliciting help to reach these goals.

Conclusions

As expected, the literature review revealed considerable overlap between the needs of younger and older women with schizophrenia, but as a general rule, younger women appear to require preventive strategies to stop the escalation of illness while older women require recovery strategies to regain lost aptitudes and abilities. It is clinically useful to conceptualize individual needs as those of “young women with schizophrenia” or “older women with schizophrenia” rather than attempting to deliver psychiatric services guided only by diagnosis.

References

- Bawn S, Benbow SM, Jolley D, Kingston P, Taylor L. Transitions: graduating between general and old age psychiatry services in England and Wales. *Mental Health Review Journal* 2007;12(1):21-26.
- McGorry PD, Purcell R, Goldstone S, Amminger GP. Age of onset and timing of treatment for mental and substance use disorders: implications for preventive intervention strategies and models of care. *Curr Opin Psychiatry* 2011;24(4):301-306.
- Thorup A, Petersen L, Jeppesen P, Ohlenschlaeger J, Christensen T, Krarup G, et al. Gender differences in young adults with first-episode schizophrenia spectrum disorders at baseline in the Danish OPUS study. *J Nerv Ment Dis* 2007;195(5):396-405.
- Häfner H, Riecher-Rössler A, Maurer K, Fätkenheuer B, Löffler W. First onset and early symptomatology of schizophrenia. A chapter of epidemiological and neurobiological research into age and sex differences. *Eur Arch Psychiatry Clin Neurosci* 1992;242(2-3):109-118.
- Gilbert H, Rose D, Slade M. The importance of relationships in mental health care: a qualitative study of service users' experiences of psychiatric hospital admission in the UK. *BMC Health Serv Res* 2008;8:92.
- Cutting P, Henderson C. Women's experiences of hospital admission. *J Psychiatr Ment Health Nurs* 2002;9(6):706-712.
- Määttä S. Exploring male and female patients' experiences of psychiatric hospital care: a critical analysis of the literature. *Issues Ment Health Nurs* 2009;30(3):174-180.
- de Haan L, Kramer L, van Raay B, Weir M, Gardner J, Akselson S, et al. Priorities and satisfaction on the help needed and provided in a first episode of psychosis. A survey in five European Family Associations. *Eur Psychiatry* 2002;17(8):425-433.
- Rummel-Kluge C, Pitschel-Walz G, Bäuml J, Kissling W. Psychoeducation in schizophrenia—results of a survey of all psychiatric institutions in Germany, Austria, and Switzerland. *Schizophr Bull* 2006;32(4):765-775.
- Reichhart T, Pitschel-Walz G, Kissling W, Bäumi J, Schuster T, Rummel-Kluge C. Gender differences in patient and caregiver psychoeducation for schizophrenia. *Eur Psychiatry* 2010;25(1):39-46.
- Von Horn A, Bäckman L, Davidsson T, Hansen S. Empathizing, systemizing and finger length ratio in a Swedish sample. *Scand J Psychol* 2010;51(1):31-37.
- Seeman MV. Gender differences in the prescribing of antipsychotic drugs. *Am J Psychiatry* 2004;161(8):1324-1333.
- Seeman MV. Menstrual exacerbation of schizophrenia symptoms. *Acta Psychiatr Scand* 2012;125(5):363-371.
- Seeman MV. Clinical interventions for women with schizophrenia: pregnancy. *Acta Psychiatr Scand* 2013;127(1):12-22.
- Conley RR, Ascher-Svanum H, Zhu B, Faries DE, Kinon BJ. The burden of depressive symptoms in the long-term treatment of patients with schizophrenia. *Schizophr Res* 2007;90(1-3):186-197.
- Seeman MV. Secondary effects of antipsychotics: women at greater risk than men. *Schizophr Bull* 2009;35(5):937-948.
- Seeman MV. Antipsychotics and physical attractiveness. *Clin Schizophr Relat Psychoses* 2011;5(3):142-146.
- Romans S. Sexuality in women with schizophrenia. *Current Women's Health Review* 2010;6(1):3-11.
- Gearon JS, Bellack AS. Women with schizophrenia and co-occurring substance use disorders: an increased risk for violent victimization and HIV. *Community Ment Health J* 1999;35(5):401-419.
- Whisman MA, Baucom DH. Intimate relationships and psychopathology. *Clin Child Fam Psychol Rev* 2012;15(1):4-13.
- Brown A, Lubman DI, Paxton S. Sexual risk behaviour in young people with first episode psychosis. *Early Interv Psychiatry* 2010;4(3):234-242.
- Brown A, Lubman DI, Paxton SJ. Reducing sexually-transmitted infection risk in young people with first-episode psychosis. *Int J Ment Health Nurs* 2011;20(1):12-20.
- Pehlivanoglu K, Tanriover O, Tomruk N, Karamustafalioglu N, Oztekin E, Alpay N. Family planning needs and contraceptive use in female psychiatric outpatients. *Turkish Journal of Family Medicine and Primary* 2007;1(3):32-35.
- Gomes Guedes T, Ferreira Moura ER, De Almeida PC. Particularities of family planning in women with mental disorders. *Revista Latino-Americana de Enfermagem* 2009;17:639-644.
- Seeman MV, Ross R. Prescribing contraceptives for women with schizophrenia. *J Psychiatr Pract* 2011;17(4):258-269.
- Cremer M, Masch R. Emergency contraception: past, present and future. *Mi-nerva Ginecol* 2010;62(4):361-371.
- Harper CC, Brown BA, Foster-Rosales A, Raine TR. Hormonal contraceptive method choice among young, low-income women: how important is the provider? *Patient Educ Couns* 2010;81(3):349-354.
- Turner N, Browne S, Clarke M, Gervin M, Larkin C, Waddington JL, et al. Employment status amongst those with psychosis at first presentation. *Soc Psychiatry Psychiatr Epidemiol* 2009;44(10):863-869.
- Major BS, Hinton MF, Flint A, Chalmers-Brown A, McLoughlin K, Johnson S. Evidence of the effectiveness of a specialist vocational intervention following first episode psychosis: a naturalistic prospective cohort study. *Social Psychiatry Psychiatr Epidemiol* 2010;45(1):1-8.
- Rinaldi M, Miller L, Perkins R. Implementing the individual placement and support (IPS) approach for people with mental health conditions in England. *Intern Rev Psychiatry* 2010;22(2):163-172.
- Rose LE, Mallinson RK, Gerson LD. Mastery, burden, and areas of concern among family caregivers of mentally ill persons. *Arch Psychiatr Nurs* 2006;20(1):41-51.
- Doornbos MM. Family caregivers and the mental health care system: reality and dreams. *Arch Psychiatr Nurs* 2002;16(1):39-46.
- Seeman MV. The changing role of mother of the mentally ill: from schizophrenogenic mother to multigenerational caregiver. *Psychiatry* 2009;72(3):284-294.
- Spencer C, Castle D, Michie PT. Motivations that maintain substance use among individuals with psychotic disorders. *Schizophr Bull* 2002;28(2):233-247.

35. Gonzalez-Pinto A, Alberich S, Ruiz de Azua S, Martinez-Cengotitabengoa M, Fernandez M, Gutierrez M, et al. Psychosis and smoking cessation: difficulties in quitting associated with sex and substance abuse. *Psychiatry Res* 2012;195(1-2):45-50.
36. Barnes TR, Schizophrenia Consensus Group of British Association for Psychopharmacology. Evidence-based guidelines for the pharmacological treatment of schizophrenia: recommendations from the British Association for Psychopharmacology. *J Psychopharmacol* 2011;25(5):567-620.
37. Bosanac P, Buist A, Burrows G. Motherhood and schizophrenic illnesses: a review of the literature. *Aust N Z J Psychiatry* 2003;37(1):24-30.
38. Comtois KA, Schiff MA, Grossman DC. Psychiatric risk factors associated with postpartum suicide attempt in Washington State, 1992–2001. *Am J Obstet Gynecol* 2008;199(2):120.e1-5.
39. Engqvist I, Åhlin A, Ferszt G, Nilsson K. Comprehensive treatment of women with postpartum psychosis across health care systems from Swedish psychiatrists' perspectives. *The Qualitative Report* 2011;16(1):66-83.
40. Joy CB, Saylan M. Mother and baby units for schizophrenia. *Cochrane Database Syst Rev* 2007 Jan 24;(1):CD006333.
41. van der Ende PC, van Busschbach JT, Wiersma D, Korevaar EL. [Parents with severe mental illness. Epidemiological data.] *Dutch. Tijdschr Psychiatr* 2011;53(11):851-856.
42. Gearing RE, Alonzo D, Marinelli C. Maternal schizophrenia: psychosocial treatment for mothers and their children. *Clin Schizophr Relat Psychoses* 2012;6(1):27-33.
43. Howard LM, Underdown H. [The needs of mentally ill parents—a review of the literature.] *German. Psychiatr Prax* 2011;38(1):8-15.
44. Heekeren HP. [Effectiveness of in-home family-focused interventions.] *German. Prax Kinderpsychol Kinderpsychiatr* 2008;57(2):130-146.
45. Hinden BR, Biebel K, Nicholson J, Mehnert L. The Invisible Children's Project: key ingredients of an intervention for parents with mental illness. *J Behav Health Serv Res* 2005;32(4):393-408.
46. Hinden BR, Biebel K, Nicholson J, Henry A, Katz-Leavy J. A survey of programs for parents with mental illness and their families: identifying common elements to build the evidence base. *J Behav Health Serv Res* 2006;33(1):21-38.
47. Nicholson J, Hinden BR, Biebel K, Henry AD, Katz-Leavy J. A qualitative study of programs for parents with serious mental illness and their children: building practice-based evidence. *J Behav Health Serv Res* 2007;34(4):395-413.
48. Darlington Y, Feeney JA, Rixon K. Interagency collaboration between child protection and mental health services: practices, attitudes and barriers. *Child Abuse Negl* 2005;29(10):1085-1098.
49. Cowling V, Garrett M. Child and family inclusive practice: a pilot program in a community adult mental health service. *Australas Psychiatry* 2009;17(4):279-282.
50. Cook J, Steigman P. Experiences of parents with mental illnesses and their services needs. *Journal of NAMI California* 2000;11(2):21-23.
51. Swanson JW, Swartz MS, Essock SM, Osher FC, Wagner HR, Goodman LA, et al. The social-environmental context of violent behavior in persons treated for severe mental illness. *Am J Public Health* 2002;92(9):1523-1531.
52. Long CG, Dolley O, Barron R, et al. Women transferred from prison to medium-secure psychiatric care: the therapeutic challenge. *J Forensic Psychiatry Psychol* 2012;23:261-273.
53. Quin P. The impact of psychiatric illness on suicide: differences by diagnosis of disorders and by sex and age of subjects. *J Psychiatr Res* 2011;45:1445-1452.
54. Hawton K, Sutton L, Haw C, Sinclair J, Deeks JJ. Schizophrenia and suicide: systematic review of risk factors. *Br J Psychiatry* 2005;187:9-20.
55. Seeman MV. Suicide among women with schizophrenia spectrum disorders. *J Psychiatr Pract* 2009;15(3):235-242.
56. Bahorik AL, Eack SM. Examining the course and outcome of individuals diagnosed with schizophrenia and comorbid borderline personality disorder. *Schizophr Res* 2010;124(1-3):29-35.
57. Mork E, Mehlum L, Barrett EA, Agartz I, Harkavy-Friedman JM, Lorentzen S, et al. Self-harm in patients with schizophrenia spectrum disorders. *Arch Suicide Res* 2012;16(2):111-123.
58. Foulon C. [Schizophrenia and eating disorders.] *French. Encephale* 2003;29(5):463-466.
59. Bou Khalil R, Hachem D, Richa S. Eating disorders and schizophrenia in male patients: a review. *Eat Weight Disord* 2011;16(3):e150-156.
60. Miotto P, Pollini B, Restaneo A, Favaretto G, Sisti D, Rocchi MB, et al. Symptoms of psychosis in anorexia and bulimia nervosa. *Psychiatry Res* 2010;175(3):237-243.
61. O'Mahony JM, Donnelly TT. The influence of culture on immigrant women's mental health care experiences from the perspectives of health care providers. *Issues Ment Health Nurs* 2007;28(5):453-471.
62. Howard LM, Kumar R, Thornicroft G. Psychosocial characteristics and needs of mothers with psychotic disorders. *Br J Psychiatry* 2001;178:427-432.
63. Chen CH, Chen CY, Lin KM. Ethnopsychopharmacology. *Int Rev Psychiatry* 2008;20(5):452-459.
64. Ruiz P, Varner RV, Small DR, Johnson BA. Ethnic differences in the neuroleptic treatment of schizophrenia. *Psychiatr Q* 1999;70(2):163-172.
65. Ninnemann KM. Variability in the efficacy of psychopharmaceuticals: contributions from pharmacogenomics, ethnopsychopharmacology, and psychological and psychiatric anthropologies. *Cult Med Psychiatry* 2012;36(1):10-25.
66. Castle DJ, Murray RM. The epidemiology of late-onset schizophrenia. *Schizophr Bull* 1993;19(4):691-700.
67. Shepherd S, Depp CA, Harris G, Halpain M, Palinkas LA, Jeste DV. Perspectives on schizophrenia over the lifespan: a qualitative study. *Schizophr Bull* 2012;38(2):295-303.
68. Gupta R, Assalman I, Bottlender R. Menopause and schizophrenia. *Menopause Int* 2012;18(1):10-14.
69. Auslander LA, Jeste DV. Perceptions of problems and needs for service among middle-aged and elderly outpatients with schizophrenia and related psychotic disorders. *Community Ment Health J* 2002;38(5):391-402.
70. Meesters PD, Comijs HC, Dröes R-M, de Haan L, Smit JH, Eikelenboom P, et al. The care needs of elderly patients with schizophrenia spectrum disorders. *Am J Geriatr Psychiatry* 2013;21(2):129-137.
71. Wiersma D. Needs of people with severe mental illness. *Acta Psychiatrica Scand Suppl* 2006;(429):115-119.
72. Grover S, Talwar P, Baghel R, Kaur H, Gupta M, Gourie-Devi M, et al. Genetic variability in estrogen disposition: Potential clinical implications for neuropsychiatric disorders. *Am J Med Genet B Neuropsychiatr Genet* 2010;153B(8):1391-1410.
73. Quintas LEM, Gram KRS, da Silveira GPE, et al. Pharmacokinetic modifications and drug-drug interactions in clinical monitoring of the elderly: a short review. *Pharm Anal Acta* 2011;2:141.
74. Dorne JL, Walton K, Renwick AG. Human variability in CYP3A4 metabolism and CYP3A4-related uncertainty factors for risk assessment. *Food Chem Toxicol* 2003;41(2):201-224.
75. Eichling PS, Sahni J. Menopause related sleep disorders *J Clin Sleep Med* 2005;1(3):291-300.
76. Roepke SK, Ancoli-Israel S. Sleep disorders in the elderly. *Indian J Med Res* 2010;131:302-310.
77. Sturdee DW. The menopausal hot flush—anything new? *Maturitas* 2008;60(1):42-49.
78. Genazzani AR, Pluchino N, Luisi S, Luisi M. Estrogen, cognition and female ageing. *Hum Reprod Update* 2007;13(2):175-187.
79. Henderson VW. Gonadal hormones and cognitive aging: a midlife perspective. *Womens Health (Lond Engl)* 2011;7(1):81-93.
80. Dennerstein L, Alexander JL, Kotz K. The menopause and sexual functioning: a review of the population based studies. *Annu Rev Sex Res* 2003;14:64-82.
81. Kelly DL, Conley RR. Sexuality and schizophrenia: a review. *Schizophr Bull*

- 2004;30(4):767-779.
82. Dickerson FB. Women, aging, and schizophrenia. *J Women Aging* 2007;19(1-2):49-61.
 83. Jeste DV, Wolkowitz OM, Palmer BW. Divergent trajectories of physical, cognitive, and psychosocial aging in schizophrenia. *Schizophr Bull* 2011;37(3):451-455.
 84. Jalenques I, Rachez C, Tourtauchaux R, Cellier Y, Legrand G. [Old patients suffering from long-standing schizophrenia: clinical aspects.] *French. Geriatr Psychol Neuropsychiatr Vieil* 2011;9(3):345-353.
 85. Bashir M, Holroyd S. Caring for the elderly female psychiatric patient. *Psychiatr Clin North Am* 2010;33(2):475-485.
 86. Hedberg L, Skärsäter I. The importance of health for persons with psychiatric disabilities. *J Psychiatr Ment Health Nurs* 2009;16(5):455-461.
 87. Laursen TM, Munk-Olsen T, Vestergaard M. Life expectancy and cardiovascular mortality in persons with schizophrenia. *Curr Opin Psychiatry* 2012;25(2):83-88.
 88. Bushe CJ, Bradley AJ, Wildgust HJ, Hodgson RE. Schizophrenia and breast cancer incidence: a systematic review of clinical studies. *Schizophr Res* 2009;114(1-3):6-16.
 89. Hodgson R, Wildgust HJ, Bushe CJ. Cancer and schizophrenia: is there a paradox? *J Psychopharmacol* 2010;24(4 Suppl):51-60.
 90. Harvey PD, Parrella M, White L, Mohs RC, Davidson M, Davis KL. Convergence of cognitive and adaptive decline in late life schizophrenia. *Schizophr Res* 1999;35(1):77-84.
 91. Mayeux R, Stern Y. Epidemiology of Alzheimer disease. *Cold Spring Harb Perspect Med* 2012;2(8):1-18.
 92. Wilson RS, Krueger KR, Arnold SE, Schneider JA, Kelly JF, Barnes LL, et al. Loneliness and risk of Alzheimer disease. *Arch Gen Psychiatry* 2007;64(2):234-240.
 93. Barnes LL, Wilson RS, Schneider JA, Bienias JL, Evans DA, Bennett DA. Gender, cognitive decline, and risk of AD in older persons. *Neurology* 2003;60(11):1777-1781.
 94. Barnes LL, Wilson RS, Bienias JL, Schneider JA, Evans DA, Bennett DA. Sex differences in the clinical manifestations of Alzheimer disease pathology. *Arch Gen Psychiatry* 2005;62(6):685-691.
 95. Ruitenberg A, Ott A, van Swieten JC, Hofman A, Breteler MM. Incidence of dementia: does gender make a difference? *Neurobiol Aging* 2001;22(4):575-580.
 96. James BD, Wilson RS, Barnes LL, Bennett DA. Late-life social activity and cognitive decline in old age. *J Int Neuropsychol Soc* 2011;17(6):998-1005.
 97. Wilson RS, Barnes LL, Aggarwal NT, Boyle PA, Hebert LE, Mendes de Leon CF, et al. Cognitive activity and the cognitive morbidity of Alzheimer disease. *Neurology* 2010;75(11):990-996.
 98. Rowe JW, Kahn RL. Successful aging. *Gerontologist* 1997;37(4):433-440.
 99. Ibrahim F, Cohen CI, Ramirez PM. Successful aging in older adults with schizophrenia: prevalence and associated factors. *Am J Geriatr Psychiatry* 2010;18(10):879-886.
 100. Yanos PT, Moos RH. Determinants of functioning and well-being among individuals with schizophrenia: an integrated model. *Clin Psychol Rev* 2007;27(1):58-77.
 101. Niimura H, Nemoto T, Yamazawa R, Kobayashi H, Ryu Y, Sakuma K, et al. Successful aging in individuals with schizophrenia dwelling in the community: a study on attitudes toward aging and preparing behavior for old age. *Psychiatry Clin Neurosci* 2011;65(5):459-467.
 102. Depp CA, Jeste DV. Definitions and predictors of successful aging: a comprehensive review of larger quantitative studies. *Am J Geriatr Psychiatry* 2006;14(1):6-20.
 103. Carpiniello B, Pinna F, Tusconi M, Zaccacheddu E, Fatteri F. Gender differences in remission and recovery of schizophrenic and schizoaffective patients: preliminary results of a prospective cohort study. *Schizophr Res Treatment* 2012;576369. doi:10.1155/2012/576369.
 104. McDaniel JG, Clark PG. The new adult orphan: issues and considerations for health care professionals. *J Gerontol Nurs* 2009;35(12):44-49.
 105. Kerr RB. Meanings adult daughters attach to a parent's death. *West J Nurs Res* 1994;16(4):347-360.
 106. Chopra P, Herrman HE. The long-term outcomes and unmet needs of a cohort of former long-stay patients in Melbourne, Australia. *Community Ment Health J* 2011;47(5):531-541.
 107. McHugo GJ, Bebout RR, Harris M, Cleghorn S, Herring G, Xie H, et al. A randomized controlled trial of integrated versus parallel housing services for homeless adults with severe mental illness. *Schizophr Bull* 2004;30(4):969-982.
 108. Berkman LF, Glass T, Brissette I, Seeman TE. From social integration to health: Durkheim in the new millennium. *Soc Sci Med* 2000;51(6):843-857.
 109. Perry Y, Henry JD, Sethi N, Grisham JR. The pain persists: how social exclusion affects individuals with schizophrenia. *Br J Clin Psychol* 2011;50(4):339-349.
 110. Stain HJ, Galletly CA, Clark S, Wilson J, Killen EA, Anthes L, et al. Understanding the social costs of psychosis: the experience of adults affected by psychosis identified within the second Australian National Survey of Psychosis. *Aust N Z J Psychiatry* 2012;46(9):879-889.
 111. O'Neal EL, Adams JR, McHugo GJ, Van Citters AD, Drake RE, Bartels SJ. Preferences of older and younger adults with serious mental illness for involvement in decision-making in medical and psychiatric settings. *Am J Geriatr Psychiatry* 2008;16(10):826-833.
 112. Gilbert MM, Chamberlain JA, White CR, Mayers PW, Pawsey B, Liew D, et al. Controlled clinical trial of a self-management program for people with mental illness in an adult mental health service—the Optimal Health Program (OHP). *Aust Health Rev* 2012;36(1):1-7.
 113. Mueser KT, Bartels SJ, Santos M, et al. Integrated illness management and recovery: a program for integrating physical and psychiatric illness self-management in older persons with severe mental illness. *Am J Psychiatr Rehab* 2012;15:131-156.
 114. Kryspin-Exner I, Lamplmayr E, Felhofer A. Geropsychology: the gender gap in human aging—a mini-review. *Gerontology* 2011;57(6):539-548.
 115. Wagner LC, Torres-González F, Geidel AR, King MB. Existential questions in schizophrenia: perception of patients and caregivers. *Rev Saude Publica* 2011;45(2):401-408.
 116. Gearing RE, Alonzo D, Smolak A, McHugh K, Harmon S, Baldwin S. Association of religion with delusions and hallucinations in the context of schizophrenia: implications for engagement and adherence. *Schizophr Res* 2010;126(1-3):150-163.
 117. Vahia IV, Depp CA, Palmer BW, Fellows I, Golshan S, Thompson W, et al. Correlates of spirituality in older women. *Aging Ment Health* 2011;15(1):97-102.
 118. Mohr S, Borrás L, Betrisey C, Pierre-Yves B, Gillieron C, Huguélet P. Delusions with religious content in patients with psychosis: how they interact with spiritual coping. *Psychiatry* 2010;73(2):158-172.
 119. Bhui K, Sashidharan SP. Should there be separate psychiatric services for ethnic minority groups? *Br J Psychiatry* 2003;182:10-12.
 120. Hartling LM, Miller JB, Jordan JV. An introduction to relational-cultural theory. Project Report, No. 10. Stone Center Working Papers Series; 2003.
 121. Bhugra D, Harding C, Lippett R. Pathways into care and satisfaction with primary care for black patients in South London. *J Mental Health* 2004;13:171-183.
 122. Andresen R, Oades L, Caputi P. The experience of recovery from schizophrenia: towards an empirically validated stage model. *Aust N Z J Psychiatry* 2003;37(5):586-594.