



MENTAL HEALTH AND OLDER ADULTS

CHAPTER 4: SCHIZOPHRENIA IN OLDER ADULTS LITERATURE REVIEW

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This review includes a brief discussion of psychotic symptoms in older adults (psychotic symptoms in individuals with dementia are discussed in more detail in the review on dementia), a review of the literature on classification and diagnosis, course and progression of the illness, cognitive impairment and functioning, and treatment (both pharmacological and psychosocial). Since Kraepelin first described dementia praecox, hebephrenia, and paranoia (1919, cited in Harvey, 2005), there have been controversies about nearly every aspect of schizophrenia-like disorders in elderly people. There are controversies about the classification of schizophrenia and other psychotic conditions that first appear after the age of 40 or 45, about the course and progression of the illness in individuals with onset prior to 40, and about the treatment of these disorders after age 60. The confusion arises in part because study findings may differ greatly depending on the population from which the sample was selected (e.g., community-dwelling or institutionalized older adults), whether subjects with comorbid disorders (e.g., dementia and substance abuse) were included in the sample, the age range of subjects included in the study, and the age at which psychotic symptoms first appeared (e.g., before 40, 40-60, after 60, or all three groups). Additionally, diagnostic nomenclature and definitions have changed considerably over time in different diagnostic manuals. For example, in 1980, the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III, American Psychiatric Association [APA], 1980) prohibited a diagnosis of schizophrenia in an individual whose symptoms arose after the age of 45, and until 1992, the World Health Organization's, *International Classification of Diseases* (ICD) included the diagnosis "Late Paraphrenia" that was applied to many individuals who developed schizophrenia-like symptoms late in life (World Health Organization [WHO], 1992). For purposes of the review and in accordance with recommendations of the International Late-Onset Schizophrenia Group, early onset schizophrenia (EOS) will refer to conditions that appear prior to age 40, late onset schizophrenia (LOS) to conditions that appear from 40 to 60, and very late onset schizophrenia (or schizophrenia-like psychosis) to conditions that appear after 60 (Howard, Rabins, Seeman, Jeste, & the International Late Onset Schizophrenia Group, 2000). Many of the studies looking at these three groups have used ages 45 and 65 as the

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dividing lines between EOS and LOS, and LOS and VLOS; these differences are noted below as needed.

Methods

An electronic search was conducted using MEDLINE, PsycINFO, Social Work Abstracts, Cochrane, DARE, PubMed, Google Scholar, and Ageline. The following search terms were grouped and used in the electronic search: (elderly, older adult, aged, geri*, gero*, senior, late onset, very late onset) AND (schizophrenia, psychosis, psychotic disorder, paraphrenia, paranoia) NOT (dement*, alzheimer, deliri*, bipolar, manic, mania, depress*, mood disorder) NOT (child*, adolesc*, youth). In addition, bibliographies of reviews and of two recent books on schizophrenia in late life (Cohen, 2003; Harvey, 2005) also were searched to identify additional relevant papers. The search focused on a variety of different studies published in the last 10 years and included systematic reviews, meta-analyses, other reviews of the literature, experimental and quasi-experimental designs. In some areas, we included descriptive studies and case reports. Initial review of papers identified in the electronic searches focused on the title of the papers and eliminated a very large number of studies of psychotic symptoms in the context of a variety of different medical conditions. The initial plan was to focus only on studies with samples of adults sixty or over. However, since most of the studies examining psychosocial interventions typically included both middle-aged and older adults, studies in this area are included if the response of older adults was reported separately or if there was no difference in response among the different age groups.

Epidemiology of Psychotic Symptoms in Older Adults

Psychotic symptoms in the elderly are more often associated with medical conditions, dementia, and other organic changes than with other psychiatric disorders. The prevalence of psychotic disorders, specifically schizophrenia and schizophreniform disorder, is low among adults over 65. Investigators in the Epidemiologic Catchment Area study (ECA), which examined rates of mental disorders in samples of community-dwelling adults 18 and over at five sites throughout the U.S., placed the prevalence for these disorders in adults 65 and over at 0.2% for 1 year and at 0.3% for lifetime (Keith, Regier, & Rae, 1991). The Surgeon General's report on mental health placed the 1-year prevalence rate at 0.6% in this age group (U.S. Department of Health and Human Services, 1999). This is about half the rate for all adults 18 and over, and a fraction of the rate of cognitive impairment, including organic psychoses, which ranges from 16.8% to 23% (Keith et al., 1991; Myers, Weissman, & Tischler, 1984). However, when samples are taken from other sites, the rate of psychotic symptoms can rise significantly. In

general, the prevalence of psychotic disorders among elderly ranges from 0.2% to 4.75% in community samples, and from 8% to 10% in geropsychiatry units and nursing homes (Zayas & Grossberg, 1998). These figures do not reflect the prevalence of psychotic symptoms in individuals with mood disorders or dementia. While the prevalence of psychotic disorders is relatively low among community-dwelling older adults, the presence of psychotic symptoms is much higher. Ostling and Skoog (2002) found that 10.1% of their sample of community-dwelling non-demented adults over 85 experienced psychotic symptoms, most of which were associated with depression, disability in daily life, and visual deficits. The rate of psychotic symptoms among individuals with dementias can be over 60% (Zayas & Grossberg, 1998). In addition to association with psychotic disorders, mood disorders and dementias, psychotic symptoms can be produced by a number of different medical conditions and their treatment, e.g., delirium; sensory impairments; drugs and medications; medical and surgical procedures; and neurological, infectious, metabolic, and endocrine disorders (Desai & Grossberg, 2003). Even in a specialty geropsychiatry clinic, the majority of older adults presenting with psychotic symptoms are diagnosed with dementia, major depression, delirium, and organic psychoses related to medical conditions and treatment (Holroyd and Laurie, 1999).

Diagnosing Schizophrenia in Older Adults

When an older adult experiences psychotic symptoms it is important to perform a differential diagnosis to identify the reason for these symptoms, and in particular, to rule out/identify medical and pharmacological precipitants of these symptoms. Desai and Grossberg (2003) presented a decision tree for diagnosing psychotic symptoms in older adults. A number of the steps in their decision tree involve medical determinations, which of course means that a physician must be involved in determining the etiology of the psychotic symptoms. However, this is not markedly different from making decisions about psychotic symptoms in a younger person, in that medical and drug-related causes always must be ruled out before one makes a diagnosis of a psychiatric disorder. The difference is that with older adults, there is a higher likelihood that the symptoms are caused by delirium, dementia, and the presence or treatment of other medical conditions. Much of the information needed to make a determination about the etiology of psychotic symptoms can be gathered by a social worker and shared with the physician, such as information about the presence and change in functioning, losses, and other stressors, quality of life, living situation, symptoms, personal and family history, the use of drugs and medications, and even some information about the individual's medical history. The first step in the decision tree is to take a thorough history to determine whether the individual has experienced psychotic or other psychiatric symptoms, has had a current or prior psychiatric

diagnosis or treatment, or has a family history of psychiatric problems (e.g., psychotic or mood disorders, suicide, dementia). This history should be taken from both the individual and one other person who is quite familiar with him or her. The initial purpose of this assessment is to determine the nature of the symptoms, when they started, and their relationship with any stressors, along with the degree of impairment and distress that the symptoms are causing. Cognitive impairment is associated with schizophrenia; however, the progression of cognitive decline in an aging individual with schizophrenia parallels the decline seen in normal aging (an issue that will be addressed in more detail later). Significant cognitive decline should raise the index of suspicion about the presence of dementia, which may be comorbid with another psychiatric disorder. Similarly, recent changes in orientation, awareness of the environment, or ability to attend should alert one to the possibility of delirium. Finally, the social worker should gather information on the use of prescribed medications; alcohol and other non-medical drugs, over-the-counter drugs, and herbal preparations. This information is provided to the physician who will review the client's medical condition, including considering the possibility of structural brain lesion or stroke (Desai & Grossberg, 2003). After secondary causes have been ruled out or identified, psychotic symptoms related to a previous psychiatric diagnosis should be considered. In cases where there is no prior history of psychiatric disorders, the individual may be experiencing a late-life psychotic disorder or late-life mood disorder with psychotic features.

Older Adults with Early Onset Schizophrenia

There are two conflicting views of EOS. The first is that schizophrenia has a course that is chronic and, if not deteriorating, is stable and usually nonremitting (Kraepelin, 1919, cited in Harvey, 2005). The second is the idea that positive symptoms (such as hallucinations and delusions) “burn out” over time and are replaced by increasing negative symptoms (such as reduced affective experience and expression and reduced verbal output), (Harvey, 2005). This section reviews both the issue of recovery from schizophrenia across time and changes in the pattern of symptoms and functional impairment over time. Changes across time have been studied in both long- and short-term longitudinal studies and in cross-sectional studies comparing older with younger clients with schizophrenia and comparing older adults with schizophrenia with older adults with no mental illness or with other mental illness, including dementia. These studies have sampled individuals living in the community and individuals living in institutions, such as long-term care facilities and hospitals. Taken together, the research findings indicate a wide variety of outcomes among individuals with EOS, including a substantial proportion of individuals who recover over time, and a wide variety of

symptom patterns among individuals with EOS, much of which depends on whether the participants were from community or institutional settings.

Long-term Recovery

Harding (2003) reviewed 10 long-term (>20 years) longitudinal studies looking at recovery from schizophrenia over time. The studies conducted in Europe and Japan consisted primarily of individuals living in urban areas, whereas the U.S. studies sampled individuals living in rural areas. A number of these studies included individuals who were older adults at the time of follow-up investigations, and most studies examined both clinical improvement and social or functional improvement. Finally, the subjects in most of the studies had the onset of symptoms during the 1930s, 40s, and 50s—prior to the development of antipsychotic medications. Thus it is likely that few of the subjects would have received medication treatment for the initial episode of their illness, and none would have received treatment with atypical antipsychotic medications. The criteria and methods used to identify individuals with schizophrenia varied widely among the studies, with some studies using broader and others narrower definitions of schizophrenia. From the methods reported, the majority of the subjects in the studies would likely meet DSM-IV criteria for schizophrenia. Global ratings of recovery were made for participants in the studies. “Recovered = having no further symptoms, no use of psychotropic drugs, living independently in the community, working, and relating well to others, with no behaviors that are considered to be odd or unusual; significantly improved = all of the above but one domain of functioning,” (Harding, 2003, p. 22). The rate of recovery or significant improvement ranged from 46% to 84% for clinical recovery and from 21% to 77% for social recovery; thus, there is considerable variability in the rate of recovery, particularly for social/functional recovery. Findings from these 10 longitudinal studies challenge the notion that schizophrenia has a chronic, deteriorating course with little hope of recovery. Clearly, these findings contradict the Kraepelinian notion of a chronic, unremitting course—some people do recover over time. However, data from cross-sectional and more recent short-term follow-up studies indicate that a number of older adults with schizophrenia do have substantial levels of impairment.

Symptoms in Late Life

In contrast to the global assessment of the presence and severity of various symptoms characteristic of the long-term longitudinal studies reviewed by Harding, more recent cross-sectional and short-term follow-up studies have conducted formal assessments of symptom severity and functioning using standardized instruments. The classical view of schizophrenia is that the severity of psychotic symptoms in later life is much reduced (referred to as symptom burn-out) and that these symptoms are replaced by greater negative symptoms. Several factors should be considered when examining

the literature in this area. First, does the sample include only older adults or both middle-aged and older adults? Second, was the sample drawn from institutionalized individuals, community-dwelling individuals, or both? Third, does the sample include individuals with co-morbid conditions, such as substance abuse problems, medical conditions, or dementia? Finally, is the study biased by attrition due to the high mortality rate, including from suicide, of individuals with schizophrenia. That is, are people with certain symptom patterns more likely to die early than those with other kinds of symptoms.

Several cross-sectional studies have examined positive symptoms (e.g., delusions, hallucinations, paranoia) and negative symptoms (e.g., anhedonia, blunted affect, and avolition) in older adults. Davidson and colleagues (1995) examined the severity of positive and negative symptoms in adults ranging in age from 25 to 95, all of whom were chronically hospitalized at the time of the study. Subjects were divided into 10-year age groups (e.g., 25-34, 35-44, ...85 and over). Although they found a linear decrease in severity of positive symptoms from ages 25 to 95, individuals over 65 continued to experience significant psychotic symptoms. The researchers also found an age-related increase in severity of negative symptoms and cognitive impairment, and a positive correlation between negative symptoms and cognitive impairment (Davidson et al., 1995). Harvey and associates (1998) investigated older adults (≥ 65) with schizophrenia who either were chronically hospitalized, were living in nursing homes, or were acutely admitted to a gero-psychiatry unit of the hospital. Individuals who were acutely admitted had been living in the community, either with relatives or in community residences (both with and without professional staff onsite). They found that each group could be differentiated from the other two. Nursing home residents were older, had the least severe positive symptoms, and had the most severe adaptive deficits. Chronically hospitalized and acutely admitted individuals were similar in severity of positive symptoms. Compared to chronically hospitalized and nursing home residents, individuals acutely admitted from the community had better cognitive functioning, better adaptive functioning, and less severe negative symptoms. Cognitive impairment was a stronger predictor of adaptive functioning than either positive or negative symptoms, and this was true across all sites and all levels of severity of illness (Harvey et al., 1998). Both the Davidson and Harvey results demonstrate that the positive symptoms of schizophrenia continue throughout life, at least among individuals with chronic symptoms or who require hospitalization due to exacerbation of symptoms.

Although the above cross-sectional studies provide important data, many individuals with schizophrenia do not have numerous hospitalizations in later life (Harvey, 2005). Jeste and colleagues (2003) have conducted a number of studies of community-dwelling adults (40-85 y.o.) with schizophrenia, including a study comparing these individuals with healthy individuals of the same age (Jeste et al., 2003).

Adults with schizophrenia were more impaired than the healthy controls on a number of measures, such as life skills, quality of well-being, and cognitive functioning. Adults with schizophrenia experienced an age-related decrease in severity of psychotic symptoms but no age-related decline on quality of well-being or everyday functioning (Jeste et al., 2003). The same researchers compared two community-dwelling groups with schizophrenia: middle-aged and older adults (Eyler-Zorrilla et al., 1995). They found that older adults experienced less severe symptoms overall and were on lower doses of antipsychotic medications than were middle-aged individuals. Depending on which measure was used, the older group experienced less prominent (or equivalent) positive symptoms and more prominent (or equivalent) negative symptoms, and they were more cognitively impaired. This increased global cognitive impairment, however, reflected a normal degree of decline since the degree of change was equivalent to that of a healthy comparison group. Short-term longitudinal data of individuals from their 40s to their 90s, living in a variety of settings (community, nursing home, and hospital), indicate no evidence of improvement in symptoms over periods of 1 to 6 years (e.g., Harvey et al., 2003; Heaton et al., 2001). Taken together these data suggest that some older adults with schizophrenia have significant levels of positive symptoms that are stable over time (Harvey, 2005).

In contrast to the number of studies that have examined positive symptoms among older adults, few have examined thought disorder in detail. Bowie and colleagues (2005) divided thought disorder into two components: positive thought disorder (sometimes called disconnection or disorganization syndrome), which involves abnormalities in the production of language such as derailment and tangentiality, and negative thought disorder, which denotes a reduction in the amount of overall amount or information in speech including poverty of speech and poverty of content of speech. They observed 220 middle-aged and older adults (age range 49-97, mean 74.9) with schizophrenia an average of 2.3 years (range 1-6 years). They evaluated cognitive impairment (Mini-Mental State Examination, MMSE, Folstein, Folstein, & McHugh, 1975), disconnection, and verbal productivity (negative thought disorder). Among the study participants, verbal underproductivity worsened over time, particularly among adults 75 and older, but disconnection remained stable. Further, worsening verbal underproductivity was associated with worsening of cognitive impairment as measured by the MMSE (Bowie et al., 2005). One of the implications of the study findings was that some of the observed age-related decrease in positive symptoms may have occurred because some individuals were not reporting these symptoms because they just were not talking very much, about symptoms or anything else.

Cognitive Impairment

From the time of Kraepelin's work, impaired cognitive functioning has been seen as a hallmark of schizophrenia, and numerous researchers have investigated longitudinal

changes in cognitive functioning and its association with other symptoms. One of the key questions is whether the rate of cognitive impairment accelerates, reverses, or stays the same over time. The research findings in this area are controversial. Studies showing cognitive decline have mostly been conducted in individuals over 65 with a chronic course of institutionalization and currently living in hospitals or nursing homes. Studies showing less evidence of cognitive decline (i.e., no more than would be associated with benign aging) have typically included younger, community-dwelling individuals with no evidence of chronic institutional stays and a better lifetime course of the illness (Harvey, 2005; Kurtz, 2005). Deficits in social and adaptive functioning are most strongly associated with cognitive deficits, only weakly associated with negative symptoms, and not associated with positive symptoms; furthermore, functional deficits tend to be preceded by deficits in cognition (Friedman, Harvey, McGurk, White, & Parrella, 2002; Harvey, 2005). There are a number of limitations to this research. One of the most significant limitations is the dearth of longitudinal studies with specific measures of cognitive functioning or performance measures of adaptive functioning—particularly among community-dwelling older adults. Studies with measures testing specific areas of cognitive functioning are needed to identify the specific pattern of cognitive impairments seen among older adults, since the specific pattern of changes has implications for caregiving and even residential status (e.g., nursing home versus community). Performance measures of functioning are important because the validity of caregiver reports differs greatly between, for example, family caregivers and nursing home staff. Poor insight may reduce the validity of self-report of functioning. Furthermore, the likelihood of deterioration of functioning in a specific area is influenced by whether the individual has the opportunity to perform the activity. For example, individuals living in institutional settings are not allowed to cook their own meals, drive, or in many cases, manage their own funds.

One final note should be made about late-life changes in EOS. One should expect large cohort effects among this population. For example, each subsequent 10-year age cohort is more likely to have received antipsychotic medications early in the course of the illness (perhaps during the first episode), more likely to have been treated with atypical antipsychotic medications, less likely to have spent large portions of their lives in institutions, more likely to have received well-designed psychiatric rehabilitation services, and more likely to have used street drugs like marijuana, cocaine, and other illicit drugs. It is unclear what the effect of all this will be on symptoms, cognition, or functioning.

Late Onset Schizophrenia (LOS) and Very Late Onset Schizophrenia(-like Psychosis) (VLOS)

One of the most controversial issues in late-life schizophrenia is the existence of late onset schizophrenia (LOS). As noted earlier, one of the problems is that psychotic symptoms emerge in a variety of contexts in later life—they may be associated with mood disorders, dementia, medical disorders, or drug-related conditions, as well as schizophrenia.¹ Research in this area is limited by the fact that, in the absence of treatment records, it is difficult to reliably determine the age of onset of symptoms of schizophrenia. Common unawareness of the illness as well as memory impairments make retrospective judgments about the timing of symptom onset suspect. This literature also is plagued by classification and terminology issues. The DSM-III prohibited a diagnosis of schizophrenia if the onset of symptoms was after age 45 and DSM-III-R provided a specifier to be used for onset after 44 (APA, 1980, 1987). The term paraphrenia was introduced by Kraepelin (1894, cited in Howard, 2001) and was re-introduced as late paraphrenia by Roth and Morrissey to describe individuals with an onset of schizophrenia after 55 or 60 (1952; Roth & Kay, 1998). The apparent syndromic coherence of paraphrenia (experiencing hallucinations and delusions in the absence of functional deterioration or disturbance of affective response), including predominance among women, and abnormal pre-morbid personality and social functioning led it to be included in the ninth edition of the International Classification of Diseases (ICD-9, WHO 1980) (Howard et al., 2000). However, neither ICD-10 nor DSM-IV or DSM-IV-TR provides a separate code for late onset schizophrenia (WHO, 1992; APA, 1994, 2000). Although neither ICD nor DSM distinguishes between EOS and LOS or VLOS, the debate about whether these are the same or different conditions is by no means settled (Almeida, Howard, Levy, & Anthony, 1995; Jeste, Blazer, & First, 2005; Mazeh, Zemisblani, Aizenber, & Borak, 2005).

There are several ways in which EOS differs from onset in later life. Later onset is characterized by greater prevalence of visual, tactile, and olfactory hallucinations; persecutory, partition (belief that people, animals, materials or radiation can pass through a structure that would normally constitute a barrier), reference, control, and grandiose ability delusions; and third-person, running commentary and accusatory or abusive auditory hallucinations. Later onset also is associated with a lower prevalence of formal thought disorder and affective flattening or blunting. Both formal thought disorder and negative symptoms are very rare in onset after 60 (Almeida et al. 1995; Howard, 2001; Howard et al., 2000; Palmer, McClure, & Jeste, 2001). Individuals with LOS and particularly VLOS appear to have a reduced prevalence of schizophrenia among family members, compared with individuals with EOS (Howard, 2001). Other

¹ As noted earlier, for purposes of this review, LOS refers to onset after 40, VLOS to onset after 60, unless otherwise noted.

risk factors for later onset schizophrenia include female gender, cognitive impairment, and possibly sensory impairment (Wynn, Owen, & Castle, 1999). While the lifetime incidence of schizophrenia is the same for men and women, onset during their 20s to mid-30s is predominant among men, whereas women have a second onset peak in their late 40s to mid-50s. The correspondence of this second peak with onset of menopause has led a number of authors to speculate about a potential role of estrogen as a protective factor against development of schizophrenia (Palmer et al., 2001). Although cognitive impairment is a risk factor for development of schizophrenia in late life, schizophrenia should not be viewed as a variant of dementia. Palmer and colleagues (2003) compared 1- and 2-year changes in cognitive functioning among adults with LOS (>45), EOS, Alzheimer's disease with psychotic symptoms (AD), and normal subjects. They found that EOS, LOS, and normal subjects were comparable and had relatively stable cognitive functioning but that AD subjects had greater declines than either of the other groups, suggesting that there was no evidence of progressive deterioration among community-dwelling individuals with LOS (Palmer et al., 2003). One final comment on LOS and VLOS is the observation that people with onset later in life may respond to lower doses of antipsychotic medication than individuals with onset earlier in life (Wynn et al., 1999).

Treatment

Pharmacologic Treatment

Five reviews of antipsychotic medication treatment of schizophrenia in older adults have been published in the last 5 years. Neither of the two Cochrane reviews found sufficient evidence upon which to base treatment recommendations (Arunpongpaisal, Ahmed, Aqeel, & Paholpak, 2003; Marriott, Neil, & Waddington, 2006) (Level B). Van Citters and colleagues (Van Citters, Pratt, Bartels, & Jeste, 2005) examined both pharmacologic and nonpharmacologic (discussed later) treatments for older adults with schizophrenia. They reviewed five double-blind, randomized controlled trials (RCTs) plus a number of open-label RCTs, quasi-experimental studies, and large prospective single-agent trials. Taken together, these studies show that both typical and atypical antipsychotic drugs are effective in relieving symptoms of schizophrenia in older adults (Level B). Some studies found that atypical antipsychotic drugs were slightly more effective than typical drugs at reducing positive, negative, and affective symptoms, and that they had reduced parkinsonism, extrapyramidal symptoms (EPS), and other side effects. Other studies did not find differences between atypical and typical antipsychotic drugs; and the reviewers noted methodological limitations in the studies that did find a difference between atypical and typical antipsychotic drugs. They also noted that all but 3 of the 14 studies they reviewed were funded by pharmaceutical

companies and recommended that this support should be considered in evaluating the studies because of the potential for conflicts of interest (Van Citters et al., 2005).

There have been two reviews of atypical antipsychotic drugs in the elderly, including studies of individuals with dementia, as well as those with schizophrenia. Gareri and colleagues (2006) examined adverse effects of nine atypical antipsychotic medications, including a number that are not available in the U.S. They used the WHO definition of an adverse drug reaction as, “a harmful, non-intentional reaction caused by a drug at the commonly used doses for prophylaxis, diagnosis, and therapy” (p. 938). While they noted a reduction in EPS, compared with typical antipsychotic medications, they also noted increased plasma glucose levels in individuals with or without a history of diabetes, elevated triglycerides, and increased risk of death with some of the atypical antipsychotic drugs. The authors reported that antipsychotic drugs have value in treatment of psychotic symptoms in older adults, that doses needed to be individualized and slowly increased, that individual pharmacological characteristics need to be considered to avoid dangerous accumulation of medications and potentially harmful adverse affects, and that drug interactions must always be considered, particularly in individuals with co-morbid conditions (Gareri et al., 2006) (Level E). Jeste and associates (2005) also reviewed the literature on use of atypical antipsychotic drugs in older adults with dementia or schizophrenia. They reported that while trials involving older adults with schizophrenia have found that atypical antipsychotics are associated with improvements in psychopathology, it is not clear that there are differences in efficacy among the different medications (Jeste, Dolder, Nayak, & Salzman, 2005) (Level E). White and colleagues (2006) (Level C) did a naturalistic, retrospective comparison of typical and atypical antipsychotic drugs on chronically hospitalized older adults with schizophrenia. They found that both cognitive functioning and self-care skills declined over time and that there was no difference between the two categories of drugs in their ability to reverse this decline. Furthermore, atypical antipsychotic drugs produced no effect on the progressive worsening of negative symptoms among this group of hospitalized individuals (White et al., 2006). The Agency for Healthcare Research and Quality (AHRQ) released a report looking at the comparative safety of typical and atypical antipsychotic medications based on data gathered in British Columbia (Schneeweiss, Setoguchi, Brookhart, Dormuth, & Wang, 2007). Specifically the researchers compared the risk of death among older adults who filled prescriptions for these two classes of drugs. Since the study was based on prescriptions filled rather than diagnosis, individuals in the study had a range of disorders including dementia, delirium, mood disorders, psychotic disorders, and other psychiatric disorders. Additionally, medical co-morbidity was widespread. The authors found that 14.1% of older adults who took typical antipsychotic medications died, compared with 9.6% of those who took atypical antipsychotic medications (unadjusted mortality ratio: 1.47). The greatest mortality increase was associated with use of higher

(>median) dosages and was during the first 40 days after beginning use. This suggests that among this mixed group of older adults, use of atypical antipsychotic medication was not associated with a higher mortality rate, compared with use of typical or conventional antipsychotic medication (Schneeweis et al., 2007).

Overall, this literature suggests the following.

- 1) Antipsychotic medication is effective in reducing psychotic symptoms in older adults with schizophrenia (Level A).
- 2) It is not clear whether any drug or category of drugs is any more effective than any other.
- 3) Adverse effects differ between the typical and atypical medications with typical medication having increased EPS (particularly tardive dyskinesia in older adults) and atypical medication having increased risk of elevated glucose and tri-glycerides; however, risk of death is not higher among users of atypical compared to typical antipsychotic medications.
- 4) Doses may need to be lower among older adults, particularly among individuals with later onset of the disorder, and should be increased gradually.
- 5) There is a need to individualize medication management of older adults due to differences in how drugs are metabolized and to the potential of concurrent medical conditions to cause or exacerbate harmful effects and the potential of drug interactions with medications used to treat these concurrent conditions.

Psychosocial Treatments

There are far fewer studies examining the effectiveness of non-pharmacologic treatments of schizophrenia in older adults compared to pharmacological treatments. Van Citters and colleagues (2005) found five studies: two RCTs (Level A), two quasi-experimental studies (Level B), and one noncontrolled prospective cohort study (Level C). These studies investigated three different manualized, psychosocial interventions developed for older adults with psychotic symptoms and disorders: a combined skills training and cognitive behavioral intervention (Cognitive Behavioral Social Skills Training, CBSST), a social skills training program (Functional Adaptation Skills Training, FAST), and a combined skills training and health management intervention for community-dwelling older adults with serious mental illnesses (ST+HM). These interventions were well tolerated by the participants; had low dropout rates; and were associated with positive outcomes, such as reductions in positive symptoms and depression, and improved social and community functioning, cognitive insight (insight about delusional beliefs), and independent living skills (Van Citters et al., 2005). In addition to those reported in the preceding review, three additional studies were located, including a follow-up of the CBSST studies; an intervention, based on FAST, developed for older Latinos with chronic psychosis; and a comparison of three approaches to work rehabilitation for middle-aged and older people with

schizophrenia. Granholm and colleagues (2007) reported that the greater skill acquisition, self-reported performance of living skills in the community, but not the greater cognitive insight were maintained at a 12-month follow-up session of CBSST (Granholm et al., 2007). The FAST program was used as the basis for a group intervention targeting areas, such as public transportation, that had been identified as being problematic for middle-aged and older Latinos (Programa de Entrenamiento para Desarrollo de Aptitudes para Latinos, PEDAL). PEDAL was compared to a time-equivalent support group (SG) protocol in an RCT conducted at three psychiatric clinics specializing in care of Latinos. Individuals treated with PEDAL performed better at post-treatment and at 6- and 12-month follow-up examinations on measures of everyday living skills, but there was no change in psychopathology (Patterson et al., 2005). Twamley and colleagues (2005) compared data from three groups of middle-aged and older veterans with schizophrenia: participants in a VA Wellness and Vocational Enrichment Clinic (WAVE), participants in Department of Rehabilitation/Education Services (DOR), and participants in Individual Placement and Support (IPS). WAVE integrated vocational and psychiatric services and offered a variety of wellness programs in addition to psychiatric and vocational services. DOR was run on a traditional vocational rehabilitation model with determination of eligibility (which could take up to 60 days), followed by 3-5 weeks of employment preparation preceding job development. IPS was a train-place model that does not include prevocational classes prior to the job search but does provide time-unlimited follow-along support onsite. The authors found the following rates of paid or volunteer work among the groups: IPS, 81%; WAVE, 44%; and DOR, 29%. IPS performed significantly better than WAVE and DOR, but no difference was found between the latter two approaches (Twamley et al., 2005). Finally, Liberman (2003) reviewed a number of behavioral and cognitive behavioral interventions that had included elderly individuals with severe mental illnesses, including, though not always limited to, schizophrenia. He identified the following principles:

- 1) Biological and psychological interventions should be integrated, personally relevant goals and quality of life should be seen as more important than syndromal definitions of the disorder, and multimodal treatments should be provided to attain multidimensional improvements in the individual.
- 2) Older adults with schizophrenia can learn to control their symptoms and manage medications and learn and generalize social and independent living skills for community adaptation.
- 3) Environmental supports need to be “wrapped around” to ensure that the needs of older adults with schizophrenia are being met, because it is not unreasonable to expect that these persons will need to learn or relearn the full range of skills required to live autonomously in the community.

- 4) Older adults with treatment refractory psychotic symptoms appear to benefit from cognitive therapy.
- 5) Social learning and token economy procedures are effective for individuals with schizophrenia of all age groups.
- 6) Behavior therapy appears to protect against stress-related relapse when effective in promoting coping skills and may reduce the amount of medication necessary for symptom stabilization and relapse prevention (Liberman, 2003).

Summary: Take Home Points for Teaching

- ◆ Prevalence. The prevalence of schizophrenia among individuals over age 65 is lower than the prevalence among younger individuals. The prevalence of psychotic symptoms is much higher among older adults. However, psychotic symptoms are more often associated with medical conditions and treatment, delirium, dementia, and depression, than with psychotic disorders.
- ◆ Diagnosis. Diagnosing psychotic disorders in older adults requires a careful differential diagnosis in collaboration with a physician due to the need to rule out psychotic symptoms secondary to general medical conditions, medication and other drug use, delirium, and dementia.
- ◆ Early Onset Schizophrenia (EOS). There is considerable variability in the literature regarding the long-term outcome of early onset (<40) schizophrenia, much of this variability depends on the methodology (long-term vs. short-term follow-up, longitudinal vs. cross-sectional, global ratings of improvement or functioning vs. ratings of specific symptoms or patterns of functioning) and the population that is sampled (community-dwelling vs. institutionalized).
 - Recovery. There is evidence that a substantial proportion of individuals with EOS recover or are significantly improved over time. This is true both for clinical and social recovery.
 - Symptoms.
 - There is evidence that a number of individuals with schizophrenia continue to experience significant positive symptoms in later life and that severity of these symptoms either decreases or stays the same.

- There is evidence that negative symptoms may increase in severity particularly among individuals living in hospitals or nursing homes; it is not clear that this is true of individuals living in the community.
- Individuals with schizophrenia experience more cognitive impairment than individuals without schizophrenia but less than individuals with dementia. The rate of decline in cognitive functioning among individuals living in the community is similar to that found among individuals without schizophrenia, but the rate of cognitive decline among individuals living in institutions is more rapid. Cognitive impairment is a stronger predictor of adaptive functioning than either positive or negative symptoms.
- ◆ Late Onset Schizophrenia (LOS) and Very Late Onset Schizophrenia (or Schizophrenia-like Psychosis, VLOS). It is important to remember that, in the absence of accurate treatment records, it is difficult determining the exact age of onset of symptoms of schizophrenia. There has been considerable variability over the past several decades in the nomenclature and definitions used to describe the condition experienced by individuals who have an onset of schizophrenia symptoms after age 40 (LOS) or 60 (VLOS).
 - Symptoms. Individuals with onset in later life experience more visual, tactile, and olfactory hallucinations; persecutory, partition, reference, control, and grandiose ability delusions; and third-person, running commentary and accusatory or abusive auditory hallucinations than do those with EOS. They also experience a lower level of formal thought disorder and affective flattening or blunting. Formal thought disorder and negative symptoms are rare in VLOS.
 - Familial and Risk Factors. Individuals with LOS and VLOS appear to have a reduced prevalence of schizophrenia among family members, compared with individuals with EOS. Risk factors for later onset include female gender, cognitive impairment, and possibly sensory impairment.
 - Treatment. It has been reported that people with onset in later life may respond to lower doses of antipsychotic medication than individuals with earlier onset.
- ◆ Overview of Treatment Research.
 - Pharmacological Treatments.

- Antipsychotic medication is effective in reducing psychotic symptoms in older adults with schizophrenia.
- No any one drug or category of drugs (atypical or typical/conventional) appears to be any more effective than another.
- Adverse effects differ between atypical and typical medications. Atypical medications have increased risk of elevated glucose and triglycerides; typical medications have increased risk of EPS (particularly tardive dyskinesia). Though a number of reports have noted elevated risk of death in individuals taking some atypical antipsychotic medications, there is evidence that the death rate is higher among individuals taking typical antipsychotic medications, particularly among those taking higher doses and in the first 40 days of treatment.
- Doses may need to be lower, particularly among individuals with later onset of symptoms, and should be raised slowly. As in other psychotropic medications, the rule appears to be “start low and go slow.”
- Medication management should be individualized with awareness of differences in metabolism, concurrent medical conditions, and the potential for drug interactions with other medications and with non-medical drug use, particularly alcohol.
- Psychosocial Treatments.
 - There are relatively few RCTs of interventions addressing schizophrenia in older adults. Existing studies typically include both middle-aged and older adults.
 - Many of the recommendations about psychosocial treatments for older adults with schizophrenia are extrapolations from interventions designed for and evaluated in younger individuals. Most of the interventions studied in older adults are adapted from interventions initially developed for younger adults.
 - The available limited evidence supports the use of interventions based on cognitive behavioral therapy, social skills training, health management, behavior therapy, and individual placement and support approaches.
- ◆ Finally, the high probability of a pronounced cohort effect needs to be considered when describing, understanding, and providing services to older adults with psychotic disorders. Each successive cohort of older

adults 1) will be more likely to have been treated with antipsychotic medication early in the course of their illness, regardless of date of onset; 2) will have spent relatively more time in the community and less time in institutions; 3) will be more likely to have been exposed to effective evidence-based psychosocial and psychiatric rehabilitation interventions, including community-based interventions of various kinds; and 4) will be more likely to have been exposed to (or still be using) a wide variety of non-medical drugs in addition to alcohol.

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