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Descriptions and Correlates of Medication Adherence, Attitudes, and Self-Efficacy in Outpatients With Schizophrenia Spectrum Disorders (SSDs)

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A B S T R A C T

The problem of medication adherence in schizophrenia spectrum disorders (SSDs) has challenged researchers and clinicians for decades. Few investigations have examined non-psychiatric adherence in this group. We conducted a descriptive correlational investigation of adherence and related factors in 185 stable outpatients with SSDs. Fifty-seven percent of participants had antipsychotic medication levels within therapeutic range and 42% had levels below therapeutic range. Pill count percentage adherence to antipsychotic medications ranged from 0–100% with a mean of 70% and SD 34.9. Mean non-psychiatric medication adherence ranged from 0 to 100 with a mean of 61% and SD 31.8. The following characteristics were not significantly associated with adherence: age, diagnosis, gender, race, living arrangement, educational level, typical versus atypical antipsychotic medication. Level of symptoms was correlated negatively and significantly with self-reported medication adherence and medication adherence self-efficacy. Our next project will examine the effectiveness of a telephone-delivered intervention designed to support adherence in this group.

As many as 74% of persons with schizophrenia spectrum disorders (schizophrenia, schizophreniform disorder and schizoaffective disorder-SSDs) do not fully adhere (take 80% of doses) to prescribed antipsychotic medications (Yang et al., 2012). Poor adherence is well documented as the leading cause of relapse (Haddad, Brain, & Scott, 2014; Hegedus & Kozel, 2014). SSD relapses increase disability, shorten intervals of remission and reduce responsiveness to subsequent treatments, all of which increase the likelihood of costly rehospitalizations.

Rehospitalizations account for most of the approximately $80 billion annual cost of treating the nearly three million persons with SSDs in the United States (Yang et al., 2012). Reasons for non-adherence vary and include personal factors like illness attitudes, system factors like complexity of medication regimen, and illness factors like psychotic symptoms (Czobor et al., 2015). We conducted a descriptive correlational investigation of adherence and related factors in 185 stable outpatients with SSDs to describe psychiatric and non-psychiatric medication adherence and to examine correlations between medication adherence, medication attitudes and medication adherence self-efficacy.

The problem of medication adherence in SSDs has challenged researchers and clinicians for decades. Poor psychiatric medication adherence results in increased illness episodes associated with rehospitalizations, longer time to remission (Higashi, Medio, Littlewood, Diez, & Granstrom, 2013) and attempted suicide (Hegedus & Kozel, 2014), all of which contribute to the already exceedingly high financial and personal cost of these illnesses. While the efficacy of antipsychotic medication for SSD maintenance is clear from large placebo-controlled trials (Leucht, Arbter, Engel, Kissling, & Davis, 2009; Leucht et al., 2012), rates of nonadherence to antipsychotic medications in this group range from 11 to 80% with average rates exceeding 60% (Czobor et al., 2015; Hegedus & Kozel, 2014; Velligan et al., 2010).

A number of highly individual personal, system and illness factors further complicate the SSD adherence picture. Personal factors include medication attitudes and individual medication side effects. System factors include the provision of care by multiple practitioners and polypharmacy. Illness factors include psychotic symptoms, memory impairments, and substance use. A combined analysis of data from the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) and the European First Episode Schizophrenia Trial (EUFEST) reported the following factors significantly associated with nonadherence: negative medication attitudes, younger age, minority status, male gender, and low socioeconomic status. Examinations of medication adherence must include influencing factors to complete the picture of this complex issue (Czobor et al., 2015).

The most recently published systematic review of SSD adherence reviewed 39 studies of antipsychotic adherence in SSDs (Lacro, Dunn, Dolder, Leckband, & Jeste, 2002). Fifteen of the studies reviewed were cross sectional, 14 were prospective and 10 were retrospective. Twenty-three studies included only outpatients; 9 studies examined

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inpatients and 7 examined both inpatients and outpatients. Of the 14 prospective studies, follow ups ranged from several weeks to 2 years. Mean psychiatric nonadherence for all studies reporting a rate was 40.5%. These authors reported the following risk factors as consistently associated with psychiatric nonadherence in the studies reviewed: negative attitude toward medications, shorter illness duration, poor treatment alliance, less outpatient contact and "poor aftercare environment" (Lacro et al., 2002, p. 902). Risks whose associations with nonadherence were mixed included substance abuse, symptom severity, higher antipsychotic dose, use of typical vs. atypical agents, family involvement and living stability. Risks not consistently correlated with nonadherence included age, gender, ethnicity, marital status, educational level, severity of side effects, and oral vs. depot formulations (Lacro et al., 2002).

The low levels of adherence to medications prescribed for chronic physical conditions (asthma- Zafari, Lynd, FitzGerald, & Sadatsafavi, 2014; diabetes - Varming, Hansen, Andresdottir, Husted, & Willaing, 2015; and hypertension – Lo, Chau, Thompson, & Choi, 2015) are well documented, and while it is reasonable to conclude that adherence to medications such as these would also present challenges in SSDs, we found only three published reports examining adherence to non-psychiatric medications in SSDs. Pratt, Mueser, Driscoll, Wolfe, and Bartels (2006) examined correlations between psychiatric and non-psychiatric medication adherence, medication attitudes and medication adherence self-efficacy in a community-dwelling sample of 43 adults (age 50 and over) with SSDs. Adherence was measured by pill count; psychiatric medication adherence averaged 57% and non-psychiatric medication adherence averaged 64% in this cross-sectional study. These investigators reported higher Medication Adherence Rating Scale (MARS-. Thompson, Kulkari, & Sergejew, 2000) scores in men and those with medication supervision. Piette, Heisler, Ganoczy, McCarthy, and Valenstein (2007) examined a national sample of 1686 veterans with schizophrenia who were also prescribed antihypertensives or antidiabetic agents; adherence was measured via pharmacy refill records over 1 year. These authors defined adherence as filling at least 80% of prescriptions – by this definition, 35% of veterans were adherent to antipsychotic medications, 29% of veterans were adherent to antidiabetic medications, and 26% of veterans were adherent to antihypertensives. More recently, Beebe et al. (2008) examined pill count adherence to psychiatric and non-psychiatric medications over 3 months in 30 outpatients with SSDs. Of that sample, 46.7% of participants were prescribed at least one non-psychiatric medication and the mean number of non-psychiatric medications was 3. Of the 14 persons prescribed non-psychiatric medications, average pill count adherence was 27.5% for non-psychiatric medications and 70% for psychiatric medications (Beebe et al., 2008).

In summary, while multiple investigations have examined medication adherence in SSDs, differing definitions and measures of adherence, differing characteristics between samples examined and variability in length of follow up make it difficult to draw meaningful comparisons between studies. More information is needed on the relationships between objective adherence and subjective medication attitudes and self-efficacy in clinic-based samples of persons with SSDs. Finally, there is a dearth of information on adherence to non-psychiatric medications (and associated factors) in this group.

METHOD

We conducted a cross sectional descriptive study of psychiatric and non-psychiatric medication adherence, medication attitudes and medication adherence self-efficacy in stable (not hospitalized in the past 6 months) outpatients with SSDs.

Recruitment

Subjects were recruited from outpatients with SSDs receiving care at a community mental health center (CMHC) located in the southeastern United States. The CMHC is a regional, not-for-profit integrated system providing outpatient services to 650 + adult (18 years and over) SSD outpatients. In addition to university institutional review board (IRB) approval, signed letters of agreement and institutional consents were obtained before participants were recruited or data collected. HIPAA law and the Notice of Privacy Practices, signed by all patients at the CMHC, allow disclosure of Protected Health Information (PHI) for research, authorizing the initial case reviews and communications required to identify potential participants. After verifying this written authorization, we conducted record reviews to verify that participants met the following inclusion criteria: (a) a chart diagnosis of schizophrenia or schizoaffective disorder, any subtype, according to the criteria established in the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000), (b) not hospitalized for psychiatric illness within the past 6 months, (c) English speaking, and (d) the ability to give consent. We documented participants' basic understanding of the study purposes and procedures using the Evaluation to Sign Consent (Beebe & Smith, 2010; Beebe et al., 2008; Carpenter et al., 2000; DeRenzo, Conley, & Love, 1998). Exclusion criteria were a chart diagnosis of coexisting mental retardation, neurological disorders or head injury, which could limit ability to complete study measures.

After verification of diagnoses via chart review, we met with potential participants in a private office at the CMHC to verify the remaining criteria. Following these verifications, we documented participants' basic understanding of the study purposes and procedures using the Evaluation to Sign Consent, (ESC-DeRenzo et al., 1998). After a thorough explanation of the study, recruiters asked potential participants to answer 4 questions about the study. If all questions were answered correctly, written informed consent was obtained. If any question was answered incorrectly, study personnel repeated the information and asked the questions a second time. If any question was answered incorrectly the second time, study personnel waited at least 24 hours before approaching the person again. After at least 24 hours, the study was again explained and questions asked of the potential participant. If all questions were answered correctly, written informed consent was obtained. If any question was answered incorrectly during this second session, informed consent was not sought from that individual.

We approached a convenience sample of 295 potential participants (approximately 6 persons/week) over 13 months, to obtain descriptive data on 185 persons with SSDs. Five persons were deemed ineligible due to failure to complete the ESC and 95 declined. See Fig. 1. Similar to our other investigations with this population (Beebe & Smith, 2010; Beebe et al., 2008), thirty three percent of eligible persons declined. Among those giving a reason, the most common reasons for declining were lack of interest (n = 23, 24%) and being too busy (n = 22, 23%).

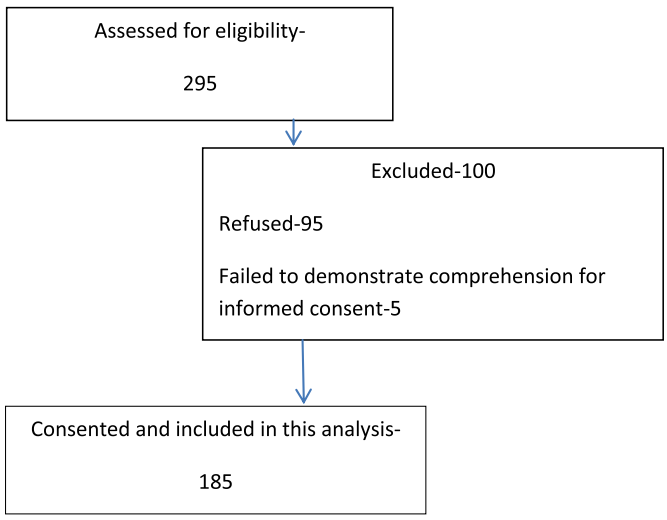

Fig. 1. Study enrollment and completion rates.