Assessing Psychosis in African American Clients

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Overview

Schizophrenia is a heterogeneous disorder that has been documented in nearly every culture in the world (Jablensky et al. 1992). However, there are reasons to believe that the symptom patterns associated with the syndrome of schizophrenia do not manifest identically across cultures or people of different ethnicities (Myers 2011). Of particular interest, there is a large body of evidence suggesting that the prevalence of schizophrenia is greater in African Americans than Caucasians (Bresnahan et al. 2007; Lipton and Simon 1985; Liss et al. 1973; Neighbors et al. 1999; Strakowski et al. 1996a), with some evidence suggesting that African Americans may be up to three times more likely to be diagnosed with schizophrenia than Caucasians (Bresnahan et al. 2007). Initially, researchers believed that factors other than ethnicity, such as lower socioeconomic status or clinicians not strictly adhering to structured clinical diagnostic interviews, may account for the increased prevalence among African Americans. However, after taking socioeconomic status into consideration and attempting to strictly adhere to diagnostic manuals, studies have still found greater prevalence of schizophrenia diagnoses among African American populations, although this difference is notably attenuated (Bresnahan et al. 2007). The reasons for this increase are currently unknown. However, the absence of simple explanations has caused researchers to focus on multifaceted accounts that take a myriad of contextual risk factors into consideration, such as: immigration, cumulative social disadvantage, adverse life events, and ethnic density. Diagnostic biases and lack of cultural consideration have also been posed as viable explanations for the increased rate of schizophrenia diagnoses among African Americans, with several studies suggesting that clinicians may misunderstand the cultural salience of psychotic symptoms in African Americans with psychosis (Adebimpe 1981; Adebimpe et al. 1982). If true, the misdiagnosis of schizophrenia in the African American population would prove to be a substantial problem, as effective treatments for schizophrenia are rarely similar to other psychiatric illnesses and the stigma of being misdiagnosed with schizophrenia may negatively affect these individuals and their families. These issues have sparked a debate within the scientific literature regarding the validity of diagnostic and assessment procedures in African Americans. In the current chapter, we review this literature on diagnosing psychotic disorders in African American clients, highlighting

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the leading theories regarding the increased prevalence of psychotic disorder diagnoses in African Americans. Given the importance of symptom severity assessment in diagnosis, we also provide a summary of major clinical rating scales and review the literature on the assessment of positive, negative, and disorganized symptoms in African Americans. We also present new data on two of the most common clinical rating scales used to assess these symptoms since little published data exists regarding psychometric properties of major rating scales in African American and Caucasian clients separately, and conclude with recommendations regarding the assessment of psychosis in African American clients.

Diagnosing Psychotic Disorders in African American Clients

Diagnostic Errors and Rater Bias A substantial number of studies have demonstrated that schizophrenia is more often diagnosed among African American than Caucasian clients, while mood disorders are more frequently diagnosed in Caucasians than African Americans (Lawson 1986; Neighbors et al. 1989; Simon et al. 1973; Strakowski et al. 1993, 1996b; Worthington 1992). Such findings have led some to question the accuracy of clinical judgment, and propose that the elevated rates of schizophrenia in African Americans reflect diagnostic errors and rater biases that result from failure to consider cultural factors during diagnostic and assessment procedures (Neighbors et al. 2003). Consistent with this notion, studies have found that clinicians use different criteria to diagnose schizophrenia in Caucasian Americans and African Americans (Trierweiler et al. 2006). For instance, African Americans are more likely, than Caucasian Americans, to receive a diagnosis of schizophrenia when evaluated in a hospital setting; however, when clinicians reevaluate those same patients using semi-structured diagnostic rating instruments that are linked to diagnostic and statistical manual (DSM) criteria, diagnostic race differences are markedly reduced (Neighbors et al. 1999, 2003). This may imply that clinical diagnoses made without the use of structured diagnostic procedures are less accurate than those that do use structured diagnostic tools like the Structured Clinical Interview for DSM-IV (SCID; First et al. 2002). Alternatively, clinicians may not be sensitive to racial and ethnic differences in symptom expression in African Americans. For example, Neighbors et al. (2003) found evidence that clinicians use different processes to link symptom observations to diagnostic categories in individuals of different ethnicities. In particular, loose associations, inappropriate affect, auditory hallucinations, and vague speech predicted receipt of schizophrenia diagnosis in African Americans to a greater extent than Caucasians. Although the frequency of these symptoms did not differ between ethnic groups, the weight that clinicians ascribed to them did differ, and subsequently influenced whether a mood or psychotic disorder diagnosis was assigned. Furthermore, the culture of the diagnosing clinician has been found to influence the extent to which different symptom clusters are emphasized when making the schizophrenia diagnosis. African American clinicians are more likely to emphasize positive symptoms than non-African American clinicians, and only non-African American clinicians tend to emphasize negative symptoms (e.g., poverty of speech, blunted facial affect) in the schizophrenia diagnosis (Trierweiler et al. 2006). This suggests that when evaluating African Americans, non-African American clinicians may be more influenced by barriers to communication than their African American colleagues. In addition to causing blurred boundaries between different aspects of schizophrenia psychopathology, it is possible that lack of cultural consideration also results in higher rates of misclassification of schizophrenia in African Americans and for the disorder as a whole.

A number of studies have also reported that African Americans diagnosed with schizophrenia report experiencing more severe psychotic symptoms (Adebimpe et al. 1982; Mukherjee et al. 1983) and a greater number of "first-rank" psychotic symptoms than Caucasian patients (Strakowski et al. 1996a, b; Arnold et al. 2004). In part, this difference in symptom presentation

may be due to the fact that African Americans tend to make greater use of emergency centers where clinicians are likely to see symptoms at their highest severity, thereby making them more prone to assigning a diagnosis of schizophrenia when such symptoms are reported (Trierweiler et al. 2006). In addition, although Schneiderian first-rank symptoms have historically been considered by many clinicians to be the hallmark symptomatology of schizophrenia, and many clinicians believe that these symptoms are the most valuable markers of pathology when making a schizophrenia diagnosis (Schneider 1959), research suggests that the presence of first-rank symptoms may not be as predictive of schizophrenia as had been believed in years past (Carpenter et al. 1973; Andreasen & Flaum 1991). Such evidence has lead to changes in the diagnostic criteria for schizophrenia in the DSM-5, and first-rank symptoms will no longer be weighted more heavily in allowing subjects to meet DSM criteria in the absence of other required symptoms of schizophrenia (Keller et al. 2011). It is therefore possible that greater reliance on first-rank symptoms, when diagnosing African Americans, leads to higher prevalence rates. It will be important to determine whether these DSM-5 changes alter the increased prevalence of schizophrenia diagnoses in African Americans relative to Caucasians.

Overall, the aforementioned findings may suggest that the higher prevalence of psychotic disorder diagnoses in African Americans results at least to some extent due to a lack of cultural consideration during diagnostic interviewing. However, there is currently no definitive evidence that the elevated incidence of schizophrenia in African Americans is solely due to widespread biases or errors in clinical diagnoses. Indeed, recent meta-analyses indicating increased incidence of schizophrenia diagnosis across a range of ethnic groups, particularly migrant groups, suggest that sociocultural and other factors may also be at play.

Immigration Many studies have suggested that the increased prevalence of schizophrenia among minorities is due to the myriad of environmental and sociocultural factors that accompany immigration (Odegaard 1932; Bourque et al. 2011; Gara et al. 2012; Cantor-Graae and Selten 2005; Cantor-Graae and Pedersen 2007). It is well-documented that first-generation migrants are at an increased risk for developing schizophrenia, and this discrepancy is still observable in second-generation migrants (Bourque et al. 2011). However, these differences in prevalence are not witnessed as robustly or reliably among all immigrants or minority populations. For example, Latin Americans do not differ from Caucasians in diagnostic prevalence of schizophrenia (Gara et al. 2012; Minsky et al. 2003), suggesting that sociocultural factors beyond immigration may also be at play. Of particular relevance to African American populations, individuals who migrated from a country where dark skin color is present in the majority to a country where white skin color is the majority show a greater prevalence of schizophrenia diagnoses than other migrant groups (Cantor-Graae and Selten 2005; Gara et al. 2012). Some have attributed this discrepancy to the fact that dark-skinned individuals are more readily discriminated as compared to other migrant groups due to their clearly observable difference from the native people (Murray and Hutchinson 1999; Sharply et al. 2001; Cantor-Graae and Selten 2005). Along with this thinking, Selten and Cantor-Graae suggest that the constant and prolonged experience of having an outsider status in a new country may cause dark-skinned individuals to possess a chronic stressor that could be a contributing factor to the higher rates of schizophrenia amongst dark-skinned migrant populations (2005; 2007).

Urban Density, Socioeconomic Status, and Social Disadvantage Several additional sociocultural factors may influence the increased prevalence of schizophrenia in African Americans. Ethnic density has been found to be associated with higher rates of schizophrenia in multiple cultures. For example, in a study conducted in the United Kingdom, it was found that when individuals with black skin made up less than 25% of the population of their neighborhood there was approximately three times greater risk for

developing schizophrenia. However, this risk became nonsignificant if the neighborhood consisted of 25% or more individuals with black skin (Schofield et al. 2010). This suggests that risk for psychotic disorders is associated with one's level of acculturation, as well as how isolated they are from the culture that they identify with. Urbanicity and socioeconomic status have also been linked to higher rates of schizophrenia diagnoses, especially lower socioeconomic status during childhood (Corcoran et al. 2009; Jenkins et al. 2008; March et al. 2008). Increased risk for traumatic and adverse life events has been one potential link between psychosis and social disadvantage, potentially compounding likelihood of developing psychosis if individuals are at genetic risk (Arsneault et al. 2010). Collectively, these findings indicate that a range of sociocultural factors may contribute to the increased prevalence of schizophrenia in African American clients.

Assessment of Positive, Negative, and Disorganized Symptoms in Individuals with Psychotic Disorders

Although there is considerable debate regarding the reasons underlying the increased prevalence of schizophrenia diagnoses in African Americans, relatively little research has examined differences in the psychometric properties of major scales used to assess the symptoms associated with schizophrenia. It would be important to know how these scales function in African Americans since these measures are commonly used to test the efficacy of new medications in clinical trials and to monitor changes in symptom severity in clinical practice. In the remainder of this chapter, we provide a summary of the clinical rating instruments that are most commonly used to assess symptoms of schizophrenia and other psychotic disorders in research and clinical settings. Given the paucity of available data on African Americans specifically, we also present previously unpublished archival data on the psychometric properties of several of the most common schizophrenia symptom rating instruments in samples of Caucasian and African American individuals diagnosed with a psychotic disorder.

As previously noted, schizophrenia is a markedly heterogeneous disorder with regard to its symptom presentation. Modern factor analytic studies typically support the existence of three major domains of psychopathology in schizophrenia: positive, negative, and disorganized symptoms (Keefe et al. 1992; Kelley et al. 1999; Mueser et al. 1994; Peralta and Cuesta 1995; Sayers et al. 1996). Within these broad symptom cluster distinctions, there is also evidence for separate individual symptom dimensions. For example, positive symptoms are typically divided into hallucinations and delusions, and disorganization into formal thought disorder and bizarre behavior (Andreasen et al. 1995). Negative symptoms are also multidimensional with consistent evidence for two dimensions reflecting motivation and pleasure (e.g., anhedonia, avolition, asociality) and emotional expressivity (e.g., alogia, restricted affect) (Blanchard and Cohen 2006; Kirkpatrick et al. 2011; Strauss et al. 2012, 2013).

A variety of measures have been developed to assess positive, negative, and disorganized symptoms in individuals with psychotic disorders. Table 16.1 presents the clinical assessment tools most commonly used to measure positive, negative, and disorganized symptoms in the field. A description of each measure is included within the table. These symptom severity measures are typically completed by clinicians who perform a standard clinical interview designed to assess the relevant symptom domains, and then rate each item on the scale on the basis of their observations, patient self-report, and sometimes collateral report. The scoring procedures for these measures vary; however, most of these scales are scored by totaling all items on the scale or by totaling the individual items that form its subscales. Unlike many psychological tests, these psychiatric clinical rating scales typically do not have established norms for estimating standard scores or severity percentiles. Although norms do not exist, these scales are typically thought to be valid for use in individuals of different ages, stages of illness, and cultural groups.

Table 16.1 Summary of major symptom instruments used to rate positive, negative, and disorganized symptoms in psychotic disorders

Name	Author(s)/Date	Symptom domains assessed	Description
Positive and Negative Syndrome Scale (PANSS)	Kay et al. 1987	General psychiatric; positive, negative	The PANSS is a 30-item scale used to assess schizophrenia across three domains: positive symptoms, negative symptoms, and general severity of mental illness. Individual items are rated on a 7-point Likert type scale. Global ratings are used to represent the overall severity of the symptoms within each of the three domains
Brief Psychiatric Rating Scale (BPRS)	Overall and Gorham 1962	General psychiatric; positive, negative; disorganized	The original BPRS scale consisted of 16 items (Overall and Gorham 1962), which are rated on a 7-point Likert scale. More recent versions consist of 18 (Overall and Gorham 1988) or 20 items (Lukoff et al. 1986). Individual items assess positive, negative, disorganized, and general psychiatric symptoms
Scale for the Assessment of Positive Symptoms (SAPS)	Andreasen 1984	Positive; disorganized	The SAPS is a 35-item scale measuring positive and disorganized symptoms in four primary domains: hallucinations, delusions, bizarre behavior, and positive formal thought disorder. Symptoms are typically rated over the past week on a 6-point scale. Global ratings are used to represent overall severity within each of these five domains, taking into account both the nature and severity of all symptoms observed
Psychotic Symptom Rating Scales (PSYRATS)	Haddock et al. 1999	Positive	The PSYRATS is a 17-item scale measuring the presence and severity of auditory psychosis. The scale is divided into two subscales: hallucinations and delusions. Individual items on each subscale are rated on a 5-point ordinal scale. Global ratings are used to the severity of symptoms within a given subscale. The PSYRATS has the advantage of being able to assess multiple dimensions of auditory psychosis
Scale for the Assessment of Negative Symptoms (SANS)	Andreasen 1983	Negative	The original SANS consisted of 30 items designed to assess negative symptom domains such as blunted affect, alogia, avolition, anhedonia, asociality, and attention. More recent versions have reduced the number of items to 25 or 22, excluding items related to attention, poverty of content of speech, etc. Symptoms are rated on a 6-point scale, and typically evaluated over a 1-week or 1-month period. A global rating is also made for each core domain that takes into account the nature and severity of items within that scale
Negative Symptom Assessment (NSA)	Axelrod et al. 1993	Negative	The original NSA is a 16-item scale used to assess the negative symptoms of schizophrenia. Individual items on the NSA are rated using a 7-point Likert-type scale. Recently the number of items of the NSA has been reduced from 16 to 4 (Alphs et al. 2011). A global rating is calculated to assess the individual's degree of negative symptom severity compared to a healthy individual

Table 16.1 (continued)

Name	Author(s)/Date	Symptom domains assessed	Description
Brief negative symptom scale (BNSS)	Kirkpatrick et al. 2011	Negative	The BNSS is a 13-item scale designed to assess the severity of anhedonia, asociality, avolition, alogia, restricted affect, and lack of normal distress. Item severity is rated on a 7-point scale over the past week timeframe. The BNSS has advantages over existing measures in that it evaluates multiple components of pleasure (e.g., frequency, retrospective, prospective), as well as dissociations between internal experience and outward behavior for avolition and asociality
Clinical Assessment Interview for Negative Symptoms (CAINS)	Kring et al. 2013	Negative	The CAINS is a 13-item scale designed to assess the domains of anhedonia, asociality, avolition, alogia, and restricted affect. It offers the advantage of assessing the frequency of past week pleasure, and the anticipated frequency of future pleasure
Schedule for the Deficit Syndrome (SDS)	Kirkpatrick et al. 1989	Negative	The Schedule for the Deficit Syndrome (SDS) is used to classify patients according to deficit/non-deficit status (i.e., whether they have primary and enduring negative symptoms or not). The SDS requires a semi-structured clinical interview designed to assess severity of negative symptoms in relation to six domains: restricted affect, diminished emotional range, poverty of speech, curbed interests, diminished sense of purpose, and diminished social drive. Severity ratings are made on a 5-point rating scale. For each symptom domain, symptoms are further classified as being primary/secondary (i.e., idiopathic, not due to secondary negative symptom factors) and stable/unstable (lasting > 1 year). To be classified as a deficit syndrome case, patients must: (1) meet DSM criteria for schizophrenia, (2) evidence moderate or higher (SDS severity of 2 or >) symptom severity on at least two of the six symptom domains, (3) have at least two of these symptoms considered primary, and (4) demonstrate a stable symptom presentation during periods of relative remission over the past year

Information regarding cultural considerations in the use of these measures with African American clients is lacking. Our data reported here on the SAPS and SANS suggest that these scales have good reliability and validity for use in African Americans with schizophrenia, and that they may not require adaptation. However, as a general rule-of-thumb, positive, negative, and disorganized symptoms of schizophrenia should be evaluated in relation to cultural context when performing a clinical or diagnostic interview

It has yet to be empirically determined whether the assumption that these scales have cross-cultural utility is correct. Very few published studies have evaluated ethnicity-related differences in major clinical measures across cultures, including African American clients. Of the few studies that have been conducted, results indicate that African Americans are rated as having more first-rank symptoms on the SAPS (Arnold et al. 2004), and more severe positive symptoms on select items of the PANSS (suspiciousness and hallucinatory behavior) (Barrio et al. 2003); however, there are typically no overall differences on broad positive, negative, or disorganized symptom domain scores on the PANSS, or total negative symptom scores on the SANS (Arnold

et al. 2004; Barrio et al. 2003) between African Americans and Caucasians. It is currently unclear whether the psychometric properties of these instruments differ between African Americans and Caucasians; however, it would be important to examine differences in reliability and validity given the aforementioned evidence related to increased prevalence of schizophrenia diagnoses in African Americans and potential issues surrounding rater bias.

Evaluation of Psychometric Properties of Major Clinical Rating Scales in African American and Caucasian Clients

Within our group at the Maryland Psychiatric Research Center (MPRC) at the University of Maryland School of Medicine, we are in a unique position to evaluate the psychometric properties of major assessments used to index positive, negative, and disorganized symptoms in African American clients diagnosed with psychotic disorders. Our outpatient and inpatient research units at the MPRC focus exclusively on the etiology and treatment of schizophrenia. We have collected index admission data on hundreds of individuals over the past 25 years, including data on major psychiatric rating scales. In the sections that follow, we present data on the reliability and validity of the two most popular instruments used in the assessment of psychosis, with reliability and validity analyses conducted separately for African American and Caucasian subjects meeting criteria for a DSM diagnosis of a psychotic disorder. Measures evaluated include the SAPS (Andreasen 1984) and the SANS (Andreasen 1983). The content of these measures is outlined in Table 16.1. All participants tested in our index assessments provided written informed consent for a protocol approved by the University of Maryland.

For each measure, analyses focused on: (1) *Reliability*: evaluated in relation to internal consistency and alpha-if-item-deleted analyses; (2) *Construct validity*: evaluated via principal components analysis (varimax rotation with Kaiser normalization) to evaluate the internal structure of the scales; (3) *Convergent validity*: evaluated via bivariate correlations with measures purported to index similar symptom domains on the Brief Psychiatric Rating Scale (BPRS: Overall and Gorham 1962); (4) *Discriminant validity*: evaluated via bivariate correlations with measures thought to index symptom constructs with minimal to moderate relationships with the measure of interest on the BPRS (Overall and Gorham 1962), and (5) *Basic descriptive statistics:* differences in symptom severity between Caucasian and African American subjects were compared using ANOVA.

1. Scale for the Assessment of Positive Symptoms (SAPS) 1A. Reliability: Cronbach's alpha, calculated to examine internal consistency, was excellent for African American and Caucasian patients (see Table 16.2), indicating that the SAPS items measure a single latent construct of positive symptoms in both ethnic groups. In addition, alpha if-item-deleted coefficients were high in both ethnic groups, suggesting no benefit from excluding any individual items from the total score (see Table 16.2). Thus, the SAPS demonstrated good reliability in African American and Caucasian subjects meeting diagnostic criteria for psychotic disorders.

1B. Construct Validity: Principal components analysis was used to examine the factor structure of the SAPS. Results indicated a 2-factor solution for Caucasians, and a 1-factor solution for African Americans (see Table 16.3). The 2-factor solution seen in Caucasians is consistent with prior factor analytic work on the SAPS (Andreasen et al. 1995). These factors reflect psychosis and disorganization symptom dimensions. Evidence for a single factor in African American subjects may reflect rater bias, whereby clinicians tend to rate both psychotic and disorganized symptom dimensions similarly in African Americans, but perceive differences in Caucasians. Alternatively, the single factor may reflect genuine differences in symptom expression, such that psychosis and disorganization tend to travel together in African Americans more frequently than Caucasians.

Table 16.2 Scale psychometrics: SAPS—reliability analyses

	Caucasian (n = 239)	African American (n = 180)
Mean SAPS global scores (SD)		
Hallucinations	2.13 (1.93)	2.18 (2.03)
Delusions	2.43 (1.71)	2.51 (1.66)
Bizarre behavior	1.03 (1.30)	0.89 (1.21)
Thought disorder	1.30 (1.46)	1.27 (1.30)
Cronbach's alpha	0.90	0.92
Alpha-if-item deleted range	0.89–0.90	0.91–0.92

Table 16.3 Scale psychometrics: SAPS—factor analyses

	Caucasian (n = 239)		African American (n = 180)
Global item	Factor 1	Factor 2	Factor 1
Hallucinations	*0.89*	0.08	*0.75*
Delusions	*0.87*	0.18	*0.81*
Bizarre behavior	0.18	*0.82*	*0.63*
Thought disorder	0.07	*0.85*	*0.70*
Eigen value	1.96	1.07	2.11
% Variance	49.0	26.7	52.8

Table 16.4 Scale psychometrics: SAPS—convergent and discriminant validity

	Caucasian	African American
BPRS positive symptoms	0.68***	0.59***
BPRS negative symptoms	0.09	−0.09
BPRS disorganized symptoms	0.28***	0.49***
BPRS total symptoms	0.56***	0.45***

* = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.

1C. Convergent Validity: In Caucasians and African Americans the SAPS total score was highly correlated with the BPRS psychosis score, suggesting that the SAPS has good convergent validity with another established measure of positive symptoms (see Table 16.4). Although the correlation between SAPS and BPRS positive scores was higher for Caucasians than African Americans, the test for significant differences between correlations indicated that this difference was nonsignificant. However, the test for significant differences in correlations was significant between Caucasians and African Americans with regard to the relationship between SAPS total and BPRS disorganization. This suggests that the SAPS may have better convergent validity in African Americans than Caucasians. This conclusion is strengthened by the fact that the BPRS disorganized dimension was more highly correlated with the SAPS global formal thought disorder item on the SAPS in African Americans (r = 0.43) than Caucasians (r = 0.30).

1D. Discriminant Validity: A comparison of correlations between the SAPS total score and the BPRS Positive, Disorganized, Negative, and Total symptom subscale scores supported the discriminant validity of the SAPS in Caucasians and African Americans (see Table 16.4).

1E. Comparison of Mean SAPS Scores: One-way ANOVAs calculated separately for the four SAPS global scores indicated that Caucasians and African Americans did not significantly differ in positive or disorganized symptom severity (all p's > 0.27) (see Table 16.2).

2. Scale for the Assessment of Negative Symptoms 2A. Reliability: On the SANS, Cronbach's alpha was good for African Americans, Caucasians, and all subjects (see Table 16.5); however, alpha was slightly lower for African

Table 16.5 Scale psychometrics: SANS—reliability analyses

	Caucasian (n = 155)	African American (n = 136)
Mean SAPS global scores (SD)		
Affective blunting	1.76 (1.16)	1.65 (1.24)
Alogia	1.05 (1.08)	1.05 (1.06)
Avolition	2.50 (1.29)	2.40 (1.36)
Anhedonia-Asociality	2.32 (0.94)	2.26 (1.13)
Cronbach's alpha	0.89	0.84
Alpha-if-item deleted range	0.88–0.90	0.83–0.85

Table 16.6 Scale psychometrics: SANS—factor analyses

	Caucasian (n = 155)	African American (n = 136)	
Global item	Factor 1	Factor 1	Factor 2
Affective Blunting	*0.77*	*0.78*	0.21
Alogia	*0.62*	*0.60*	0.14
Avolition	*0.64*	0.11	*0.63*
Anhedonia-Asociality	*0.63*	0.26	*0.72*
Eigen value	2.32	2.00	1.02
% Variance	58.0	49.9	25.5

Americans than Caucasians. In addition, alpha if-item-deleted coefficients were good in both ethnic groups, suggesting no evidence for poor reliability among any individual SANS items (see Table 16.5), although these were slightly lower in African Americans. Overall, these findings suggest good internal consistency among SANS items in Caucasians, and slightly lower but still good internal consistency in African Americans.

2B. Construct Validity: Principal components analysis with maximum-likelihood rotation was used to examine the factor structure of the SANS. Results indicated a 1-factor solution in all subjects and Caucasians, and a 2-factor solution in African Americans (see Table 16.6). The 2-factor solution found in African Americans is the one most commonly found on the SANS, as well as other negative symptom measures (Blanchard and Cohen 2006; Strauss et al. 2012, 2013), with factors representing motivation and pleasure (avolition, anhedonia, asociality) and diminished expression (affective blunting, alogia). It is possible that prior factor analytic results on the SANS and other measures have primarily been driven by African American subjects. The differential factor structure of the SANS in African American and Caucasian subjects may reflect a valid difference in symptom presentation, such that diminished expression and motivation/pleasure tend to travel together in Caucasians, but not in African Americans. In a recent study by Strauss et al. (2013), it was found that schizophrenia patients could be separated into distinct negative symptom subgroups based upon the relative severity of their diminished expression and motivation/pleasure scores. Separable groups of patients with relatively higher scores on motivation/pleasure but lower diminished expression were identified (and vice-versa), and these patient subgroups differed on severity of external validators such as premorbid adjustment, functional outcome, and social cognition. The demographic differences among patients statistically classified into one of those two negative symptom sub-profiles is consistent with the notion that African Americans and Caucasians differ in their relative balance of severity among these two factors, as ethnicity was to some extent differentially associated with the negative symptom profiles. Alternatively, the findings may reflect rater bias, and that clinicians (who are predominantly Caucasian in our clinic) have greater difficulty rating emotional expressivity in individuals from cultures that are different than their own. In fact, this

Table 16.7 Scale psychometrics: SANS—convergent and discriminant validity

	Caucasian	African American
BPRS positive symptoms	0.06	0.04
BPRS negative symptoms	0.73***	0.63***
BPRS disorganized symptoms	0.14	0.02
BPRS total symptoms	0.40***	0.31***

* = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.

is a well-known phenomenon called the "own-race-face-bias", whereby individuals are more accurate at perceiving emotion in individuals of their own culture than they are in other cultures (Malpass and Kravitz 1969). Perhaps this face identification bias extends here to clinical ratings, resulting in differential item associations between emotional expressivity items and motivation/pleasure items in African Americans with psychotic disorders.

2C. Convergent Validity: The SANS total score was highly correlated with the BPRS negative symptom score in Caucasians and African Americans, suggesting good convergent validity. The magnitude of the correlation coefficient between SANS total scores and BPRS negative scores was numerically higher in Caucasians than African Americans, but this difference was not statistically significant.

2D. Discriminant Validity: Comparison of the correlations among the SANS total score, and the BPRS Positive, Disorganized, and Total symptom subscales indicated good discriminant validity in Caucasians and African Americans (Table 16.4).

2E. Comparison of Mean SAPS Scores: Caucasians and African Americans did not significantly differ in severity on any of the four SANS global items (all p's > 0.42) (see Tables 16.2, 16.7).

Specific Recommendations for Using the SAPS and SANS with African American Clients Overall, the results of our psychometric analyses indicated that the SAPS and SANS demonstrated good reliability in terms of internal consistency in Caucasians and African Americans. Individual items included within the SAPS and SANS seem to validly measure a single latent construct, as the scales were intended, in both ethnic groups. Furthermore, the SAPS and SANS each demonstrated good convergent validity in relation to the BPRS in Caucasians and African Americans, suggesting that these scales show strong relationships with another scale purported to assess similar constructs. However, the SAPS demonstrated better convergent validity with disorganization in African Americans than Caucasians, although the correlations were sufficiently high in both cases to indicate that the SAPS disorganization items have good convergent validity in both groups.

Factor analytic results on the SAPS and the SANS were interesting, and indicated different factor structures in Caucasians and African Americans. It is possible that these differences in factor structure reflect rater bias in evaluating positive and negative symptoms. Further research is needed on this matter to determine whether rater bias might be at play on the SAPS and SANS; however, we suspect that it might given the widely documented effects of rater bias on diagnosis reviewed earlier in this chapter. Notably, such differences in factor structure emerged in the absence of absolute differences in symptom severity, suggesting that any rater bias that is present may influence how similar clinicians see different symptom dimensions, rather than the global level of psychopathology. Much like with diagnosis, the evaluation of symptom severity on popular psychiatric rating scales might also be affected by rater bias and how clinicians cluster symptoms together in people of different ethnicities when making ratings. In general, the results of our psychometric analyses indicate that two very widely used measures, the SAPS and SANS, demonstrate comparable psychometric properties in Caucasians and African Americans meeting criteria for psychotic disorders. Reliability and validity estimates, at least in terms of the analyses that were conducted here, indicate that these scales are adequate for use in African

Americans with schizophrenia; however, it is still possible that these measures are subject to some of the same rater biases that occur when making diagnoses, and this should be explored in future studies.

Conclusions

In conclusion, studies have consistently indicated an increased prevalence of schizophrenia diagnoses in African American clients. Diagnostic errors, biases in ratings, and lack of reliance on structured diagnostic procedures may contribute to this diagnostic finding, along with other sociocultural influences (e.g., urban density, socioeconomic status). Clinicians diagnosing African American individuals presenting with psychosis would be better advised to utilize structured diagnostic tools like the SCID (First et al. 2002), which has been found to reduce rater bias and increase the accuracy of diagnostic procedures. Furthermore, clinicians should consider the cultural relevance of positive, negative, and disorganized symptoms when evaluating African American clients in clinical and research settings. Failure to do so could result in inaccurate diagnoses that are based upon insufficient information, which tend to see distinct symptom dimensions as more similar than they are (i.e., positive, negative, and disorganized), thereby making over-diagnosis more likely and impeding the clinician's ability to make finely tuned treatment recommendations. To make diagnostic judgments more accurate, clinicians should consider the client's own interpretation of their symptoms in relation to cultural context, as some symptoms reflect culturally acceptable manifestations of distress.

Few studies have examined cultural differences in symptom ratings made using standard psychiatric rating scales used to measure the positive, negative, and disorganized symptoms of schizophrenia. The data presented in this chapter suggest that two of the most common scales, the SAPS and SANS, are reliable and valid for use in African Americans with psychotic disorders. The items and anchors on these scales do not appear to require modification for use in African Americans. Given their sound psychometric properties in African American individuals, clinicians could consider using these instruments to supplement other diagnostic instruments like the SCID, which tend to be less detailed in their coverage of individual positive and negative symptoms. However, these rating scales may not be immune to the rater bias problems that are thought to affect formal diagnostic procedures, and clinicians should take cultural context into consideration when using formal rating scales to assess symptom severity. Negative symptom assessments in particular should take into account cultural factors influencing normative emotional expressivity and quantity of speech, and how these may differ by culture in relation to changes in everyday context.

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