Assessing Mood Disorders and Suicidality in African Americans

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According to the United States (US) Census data, African Americans constitute approximately 13 % of the US population, including people who are the direct descendants of those forcibly transported to the USA and forced into slavery including Caribbean and African immigrants (U.S. Census Bureau 2010). Sometimes referred to in aggregate as the Black population, persons of African descent in the USA, are projected to double the size of the US African descended population by 2050 (Joe 2006). As a result, it is imperative for clinicians, researchers, and policy makers to develop relevant and accurate means for ensuring the health of this population.

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Currently, evidence-based practices have gained popularity as a mechanism for reducing the burden of disease in the USA. While this is true for health and well-being in general within the USA, there is a dearth of research and evidence on assessments and treatment for ailments in the area of mental health. In fact, it has been well established that most of the "evidence" used to define evidence-based practices fails to adequately consider and address issues of racial, cultural, and socioeconomic diversity existent within the US population. So, though the creation of evidence-based interventions to improve mental health is an extremely important public health objective, too little of what we know about best practices in mental health (including assessment and treatment) applies to African Americans/Blacks specifically (Breland-Noble et al. 2011; Joe 2006; U.S. Department of Health and Human Services 2001). As indicated by the editors, accurate assessment of mental health concerns can facilitate improved pathways to treatment. In the case of mental health concerns, particularly for one of the leading causes of disability and time lost from work worldwide (depression), research demonstrates the utility of awareness and assessment as important facilitators of treatment for African Americans (Breland-Noble and Weller 2012).

Depression and suicide are of public health relevance given their established associations with reduced quality of life, reduced work and school productivity, implications for substance use and abuse, and loss of life via suicide. Though

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depression *prevalence* is not an established health disparity between African American and white youth, research points to significant differences in depression prevalence and effective treatment access among African America and white adults (Alegria et al. 2008) as well as highly significant differences in depression treatment use and access between African American and white youth (Breland-Noble and AAKOMA Project Advisory Boards 2012; Breland-Noble et al. 2006, 2010). Pediatric and adolescent depression have emerged as public health concerns because of their associations with impaired functioning, poor decision-making, poorer quality of life, substance use, and diminished self-efficacy (Brook et al. 2010; Horwood et al. 2010; Okwumabua et al. 2003). With the enormity of the problem of depression in general which is exacerbated by health disparities in treatment for this disorder among African Americans, accurate assessment for this population is critical (Sashidharan et al. 2012).

Suicide is yet another unfortunate outcome often associated with depressive illnesses (Goldston et al. 2008). The rate of suicide within the African American community is the highest among adolescents and young adults with adolescent and young adult males exhibiting the highest rates of completed or attempted suicide. Crosby and Molock (2006) reported that for African Americans aged 15–19, suicide was the third leading cause of death, among those aged 20–29 years suicide is the fourth leading cause of death, and those aged 30–39, sucide is the eight leading cause of death.

During the early 1990s, suicide rates among African American males aged 15—24 years steadily rose and peaked in 1993 at 20.2, then began a steady decline to 11.6 (42.6% decrease) in 2002 (Crosby and Molock 2006). In 2003, suicide was the 16th leading cause of death overall for African Americans and on an average day in the USA, one African American died by suicide every 4.5 h (Centers for Disease Control and Prevention (CDC) and National Center for Injury Prevention and Control 2005; Crosby and Molock 2006). Overall, there were 28,177 suicides recorded among African Americans from 1990 to 2003, and from 1999 to 2010 there were 16,466 suicides recorded among African Americans (CDC and National Center for Injury Prevention and Control 2005).

The estimated lifetime prevalence of suicidal ideation and attempts among blacks in the USA was 11.7% and 4.1% respectively, and among those with suicidal ideation (thoughts of death), 34.6% made a suicide plan (Joe et al. 2006). Statistically significant differences ($P \leq 0.05$) were found between men and women, with attempts being more prevalent in women (4.9% of the sample reporting), than men (3.1% of the sample reporting). An ethnicity-by-sex analysis revealed the prevalence of suicide attempts was highest for Caribbean black men (7.5%), followed by African American women (5.0%). Caribbean black women had the lowest prevalence of attempts (2.7%), while attempts were only slightly more prevalent for African American men (2.74%) (Joe et al. 2006). Joe and colleagues also found that the 12-month prevalence rate for suicidal ideation (12.8%) and nonfatal suicide attempts (5.0%) in African American women is high relative to men and women of other ethnic groups.

Overall, it is well established that African Americans are susceptible to mental illnesses like depression and events like suicide (even though suicide is a rare occurrence within this overall population). Given established prevalence rates (which are statistically comparable among youth yet statistically different among adults), under treatment of the disease (and event), and the associated impairment and loss of life, diagnosis is key as a first step toward intervention. Though a multitude of tools are available for use in assessing depression and suicidality in youth and adults, very few have empirical data associated with them to support their use with African Americans and people of African descent. Further, we identify the limited number of tools evaluated and/or used with African American populations to assess depression and suicidality and describe their prior use with African Americans. We begin with adult measures followed by child and adolescent measures.

Adult Depression Measures

The Beck Depression Inventory (BDI) The BDI is a 21-item multiple-choice inventory designed to allow patient report of the types and severity of experienced depressive symptoms for the week prior to the date of the assessment (BDI-original) and the prior 2 weeks from the date of assessment (BDI-II) (Beck et al. 1996; Brown et al. 2000). The BDI focuses on the cognitive aspects of depression symptomology (i.e., what a person's thoughts and perceptions are regarding their depression). The BDI-II is a 21-item revision of the BDI, which focuses on the symptoms of depression as they are described in the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV). This revision was based on substantial revisions to the clinical conceptualization of depression included in the DSM-IV (Beck et al. 1996; Brown et al. 2000). Though the BDI and BDI-II are technically not the measures of suicidality, they both do contain a single item assessing suicidal ideation. While the depression items of the BDI and BDI–II focus on depression, they address different aspects of depression; the BDI addresses cognitive aspects while BDI-II addresses symptomatology. Specific details regarding research on the standardization and psychometric properties of the BDI are provided below. As the reader will see, the BDI (both versions) is a widely used and accepted inventory for the assessment of depression. Based on its widespread use and validation and psychometric property assessment in African American and Afro-Caribbeans, it seems a strong measure for use with African Americans and Blacks of the African diaspora.

Standardization Samples The BDI and BDI-II have been collectively examined using extensive studies to assess their utility, accuracy, and psychometric properties with people across the lifespan (Aaron et al. 1988). This depth of research on the normative properties is rare among clinical assessment measures but does allow one to create a picture of how well the BDI may function with African American and African diasporic populations. Sashidharan (2012) examined the BDI in a sample of university undergraduates that included 139 African Americans matched to an equal number of white students who were randomly selected from a larger sample of over 800 white students. The research team reported no statistically significant differences between African American and White students' mean scores on the BDI-II. Further, they reported no statistically significant correlations between BDI-II scores and race. Additional studies of the psychometric properties of the BDI include significantly underresourced and socioeconomically disadvantaged African Americans as well as the middle class, college educated Afro-Caribbean populations but consistently report strong psychometric properties (as elucidated in the next section; Campbell et al. 2012; Grothe et al. 2005; Joe et al. 2008; Kneipp et al. 2009)

Psychometric Properties Both versions of the BDI appear to be beneficial for helping clinicians assess symptoms of depression as well as their severity in African American populations. As an example, we note the work of Grothe whose analyses (in a sample of medical outpatient African Americans) indicated that individuals with a diagnosis of current major depression had significantly greater BDI-II total scores ($M = 23.12$, $SD = 8.66$) than those without a depression diagnosis ($M = 8.23$, $SD = 7.50$); $t\ (218) = 12.83$, $p < 0.01$ (Grothe et al. 2005).

Criterion validity has been demonstrated in the BDI-II via multiple studies differentiating depressed from nondepressed individuals. Specifically, Arnau and colleagues (2001) demonstrated the ability of the BDI-II to differentiate between depressed and nondepressed primary care patients. Additionally, using the PRIME-MD, Grothe and colleagues (Grothe et al. 2005) established the criterion validity of the BFI-II in their outpatient, low-income African American sample. Suicide items on the BDI has also been examined for criterion validity with findings establishing its strong properties. In fact, the BDI suicide item was moderately correlated (rs = 0.56–0.58) with the Beck Scale for Suicide Ideation for a psychiatric sample (Beck and Steer 1991).

Discriminant validity of the BDI was demonstrated through weaker correlations (0.71, $p<0.001$) with measures of anxiety than with other measures of depression (0.89, $p<0.001$; (Steer et al. 1997). Joe and colleagues found strong evidence for the convergent validity of the BDI-II (Joe et al. 2008) and the Hamilton Depression Rating Scale (the HAM-D) in a sample of under-resourced African Americans (Joe et al. 2008). The predictive validity of the BDI-I (in relation to both suicide and depression) has been demonstrated in multiple studies using both community sample of adolescents and adults. In each case, the BDI suicidal ideation item was found to predict future suicide attempts (OR = 6.9) and future depressive episodes (OR = 2.1; (Lewinsohn et al. 1994). Additionally, using data from the Brown et al.'s (2000) study, it was found that individuals who scored a 2 or higher on the BDI suicide item were 6.9 times (95% CI: 3.7–12.6) more likely to commit suicide than those who scored less than 2 (Brown et al. 2000).

Using samples of African Americans, the internal consistency of the BDI–II and its factors is indicated to be quite high with a BDI–II total score, $\alpha = 0.90$; cognitive factor, $\alpha = .81$; and somatic factor, $\alpha = 0.87$ (Grothe et al. 2005). Separate studies showed the BDI as possessing a Cronbach's alpha of $\alpha = 0.89$ and an internal consistency reliability of $\alpha = 0.94$, a test-retest reliability of 0.75 and a split-half reliability coefficient of 0.90 (Joe et al. 2008). Consistent with Grothe, Sashidharan (2012) found evidence to support the dimensionality, internal reliability, and convergent validity of the BDI–II in a sample of African American participants.

The Center for Epidemiology Studies Depression (CES-D) Scale The CES-D Scale is a 20-item self-report measure developed by the National Institute of Mental Health for the assessment of depressive symptom prevalence in the general population (Radloff 1977). Though it is not a diagnostic tool for mental health clinicians, it is quite useful for helping clinicians understand the type and frequency of *affective* depressive symptoms that a patient might experience. Questions are answered on a 4-point Likert scale where responses range from "rarely or none" to "most or all" of the time. CES-D scores range from 0 to 60, with a score of 16 indicating the presence of clinically significant depressive symptoms (Radloff 1977).

While limited research exists (which is detailed below) examining the CES-D exclusively with African Americans, the available data does point to the utility of the measure in helping researchers and clinicians accurately assess the presence of depressive symptomatology in this population. Though the CES-D is not recognized as a diagnostic screening tool for clinical use, it can be useful in helping clinicians gain insight into the clinical presentation of symptoms experienced by depressed African Americans.

Standardization Sample and Psychometric Properties Fortunately, the CES-D standardization sample included approximately 25% ($n = 259$) African Americans, though this sample was significantly poorer than the white sample with a mean annual household income approximately 40% lower than that of their white counterparts (Comstock and Helsing 1977).

Since the initial validation of the CES-D, the psychometric properties of the measure have been examined with African American samples of differing socioeconomic strata. Rozario and colleagues found moderate to strong internal consistency in a sample of low-income African Americans (0.83) while Williams and colleagues (Williams et al. 2007) found an even lower yet acceptable level of internal consistency in a sample of well-educated middle class African American women (0.75) (Rozario and Menon (2010). Most of the current data on the utility and psychometric properties of the CES-D appears to come from samples of under-resourced (i.e., low-income) African Americans (Nguyen et al. 2004).

Radloff (1977) identified an internal consistency reliability of approximately 0.85 in the general population and about 0.90 in a patient sample using the CES-D. She also found test-retest reliabilities of: 0.51 after 2 weeks, 0.67 after 4 weeks, 0.59 after 6 weeks, 0.59 after 8 weeks, 0.48 after 3 months, 0.64 after 6 months, and 0.49 after 12 months in a sample of participants.

The CES-D scale correlates strongly with other self-reported depression measures as well

as variables related closely to the clinical diagnosis of depression. In a racially diverse sample (primarily African American and Latino) of over 200 Traumatic Brain Injury patients, the CES-D was found to have moderate to strong concurrent validity when compared with the Beck Depression Inventory ($r=0.67$) (Bush et al. 2004). Researchers have found that even within African American subjects, CES-D scores are much higher for depressed vs. nondepressed patients (Nguyen et al. 2004).

Primary Care Evaluation of Mental Disorders (PRIME-MD) The PRIME-MD was the first instrument designed for use in primary care settings to screen for specific mental disorders using criteria from the DSM-III-R and DSM-IV (Spitzer et al. and The Patient Health Questionnaire Primary Care Study Group 1999; Spitzer et al. 1994). The PRIME-MD consists of the 26-item patient self-administered questionnaire (PRIME-MD-PQ) and a clinician administration evaluation guide PRIME-MD-CEG), to guide clinicians in more detailed data collection via five modules designed to more fully elucidate the data generated by the PRIME-MD-PQ (Tamburrino et al. 2009). The PHQ-9 is the depression specific subscale of the PRIME-MD and has been examined extensively for its utility in screening for depression symptomatology and severity. Overall, the PRIME-MD is potentially useful for persons working with racially diverse patient populations as research points to the primary care setting as the main point of entry for African American adults with mental health concerns (Snowden and Pingatore 2002; Spitzer et al. 1999). Though, we briefly describe the PRIME-MD to provide context, our focus is on the PHQ-9 as it is most relevant for depression screening.

Standardization Sample and Psychometric Properties The PRIME-MD was validated in racially diverse sample of 1000 patients via 31 physicians across four primary care clinics in the USA (Spitzer et al. 1994). The study found the measure to be an accurate screener for depression and four other major mental illnesses typically seen in primary care settings. The measure is quickly administered (i.e., it generally takes less than 10 min to complete) and based on the original study, diagnoses were accurately confirmed by an independent panel of mental health professionals with an overall accuracy rate of 88%. The PHQ Depression screen was part of the original PRIME-MD and remains so today. Currently entitled the PHQ-9, this depression screen consists of nine questions scored on a Likert scale.

PRIME-MD has not been specifically normed for African Americans, particularly African American women; however, the measure does appear to be accurate with diverse populations (Miranda et al. 2005)—13% of the participants in the PHQ-9 Primary Care study were African American (Ramos et al. 2004; Spitzer et al. 1999). With 92% accuracy for reporting major depression (Miranda et al. 2005; Ramos et al. 2004; Spitzer et al. 1994), PRIME-MD reports good agreement with independent psychiatric diagnoses guided by a structured interview.

Patient Health Questionnaire-9 (PHQ-9) The PHQ-9 is a self-administered version of the PRIME-MD comprised of the PRIME-MD-PQ and PRIME-MD-CEG, the patient questionnaire and the clinician evaluation guide (Kroenke and Spitzer 2002). Overall, the full PHQ allows patients to respond to questions reflecting eight DSM-IV specific diagnoses including panic disorder, anxiety disorders, eating disorders, and major depressive disorder (Kroenke et al. 2001; Spitzer et al. 1999). The depressive disorder subscale of the overall PHQ is entitled the PHQ-9 and is a measure that supports the diagnosis of depression along with depression symptom severity. Scoring for individual items is on a Likert scale of "0" (not at all) to "3" (nearly every day), yielding an overall score range of 0–27. For diagnoses of major depression, a respondent must endorse five or more of the nine depressive symptoms for at least "more than half the days" in the prior 2 weeks with a required symptom of depressed mood (Kroenke et al. 2001). Given that this measure has been used with large sample of under-resourced African American women (see below for details), it may be useful for clinicians

and researchers working with African American populations. Future studies would however need to replicate findings in more socioeconomically diverse samples.

Psychometric Properties Data from both the PHQ Primary Care Study (Spitzer et al. 1999) and the PHQ Obstetrics-Gynecology Study (Kroenke et al. 2001; Spitzer et al. 2000) provide the following strong evidence of measure validity. First, using a sample of 580 primary care patients who completed the PHQ-9 and who were subsequently reinterviewed by mental health professionals, researchers were able to demonstrate the criterion validity of the measure. Next the strong association between PHQ-9 scores and functional status, disability days, and symptom related difficulty was seen in two validation studies of the PHQ-9 conducted in multiple primary care and Obstetrics-Gynecology clinics across the USA. These validation studies, including the Obstetrics-Gynecology study with a subsample of approximately 450 African American women helped to establish the construct validity of the PHQ-9 and yielded Cronbach's α of 0.89 and 0.86 respectively (Spitzer et al. 1999; Spitzer et al. 2000).

Summary

Overall there are a limited number of depression assessment measures available that have been specifically developed and/or utilized extensively with African American adults. Of the available measures, we have described those (which in our view) have the most applicability and are the most easily accessible to clinicians, researchers, and policy makers interested in working with African Americans.

Suicide Assessment

We now turn our attention to the assessment of suicidality in African American adults by examining a number of measures, as well as subscales of depression measures.

The Scale of Suicide Ideation (SSI) The SSI is a 21-item, interviewer-administered rating scale that measures the current intensity of individual's specific attitudes, behaviors, and plans to commit suicide on the day of the assessment (Beck et al. 1979). Each question is answered on a 3-point scale, from 0 to 2. A total score for the SSI is based on the first 19 items, for a score range of 0–38. The SSI includes five screening items assessing an individual's level of desire toward a suicide attempt and the wish to live or die. If a patient reports a passive or active suicide wish, an interview may complete 14 additional questions with the patient to examine specific suicidal risk factors, including the duration and frequency of ideation, an individual's feelings of self-control regarding making an attempt, the number of deterrents available to the patient, the incidence and frequency of prior attempts, and the activity engaged in toward a contemplated attempt (Brown and Goldston 2000).

Additionally, the normative sample for the SSI included psychiatric inpatients and outpatients with a relatively sizeable proportion of African Americans overall (Beck et al. 1985, 1997). The measure has strong psychometric properties including in samples of African Americans with Cronbach's alphas for racially diverse samples ranging from 0.84 (Beck et al. 1997) to 0.89 (in a predominantly African American sample) (Harris and Molock 2000). The measure is reported to demonstrate concurrent validity with the suicide item from the Hamilton Rating Scale for Depression, reports of previous suicide attempts and depression severity (Beck et al. 1979, 1985, 1997). Given these study outcomes, the SSI appears to be a solid tool for clinician use with African American patients.

The Suicide Probability Scale The Suicide Probability Scale is a 36-item measure of current suicidal ideation, negative self-concept, hopelessness, and negativity/hostility (Cull and Gill 1988). Individual items are scored on a Likert scale of 1 ("none or little of the time") to 4 ("most or all of the time") points. The measure generates three summary scores; a suicide probability score, a total weighted score, a T-score and four

subscale scores including hopelessness, suicidal ideation, negative self-evaluation, and hostility.

The SPS was standardized on a multiracial sample of inpatient and outpatient adults and adolescents including a sample that was almost 15% African American (Brown 2002; Cull and Gill 1988). The properties of this measure are strong with Cronbach's alpha reported at 0.93 and test-retest reliability of 0.92 over a 3-week period (Cull and Gill 1988). Additionally, the measure demonstrates good concurrent validity with the suicide threat scale of the MMPI—Minnesota Multiphasic Personality Inventory (Cull and Gill 1988; Goldston et al. 2008).

While the SPS has adequate psychometric properties, it has not been evaluated for its consistency with the standard definitions of suicidality as defined in a seminal article by O'Carroll and colleagues (Ocarroll et al. 1996). Overall, the SPS may require additional testing in samples of African Americans as well as for its concurrent validity with standard measures of suicidality before it is used with African Americans. Specifically, since research indicates trends toward African American and white differences in the perception, expression, and severity of hopelessness and hostility (Maier et al. 2009), this measure could benefit from additional examination of these specific constructs in African American samples (particularly boys and men).

Suicide Subscales of Depression Measures

Beck Depression Inventory The Beck Depression Inventory (both versions) include a set of subscales focused on the assessment of suicidality. The primary difference between the subscales of the two versions is the time frame, with the BDI focusing on the prior week and the BDI-II focusing on the prior 2 weeks from the day of the assessment. On either inventory, individuals are asked to decide which of the following best describes the way they have been feeling: (1) "I do not have any thoughts of killing myself," (2) "I have thoughts of killing myself, but I would not carry them out," (3) "I would like to kill myself," and (4) "I would kill myself if I had the chance." Any individual who rates this final item 4 with a 2 or higher indicates his/her intent to die (Brown 2002). Given prior examinations of the BDI overall in African American/Black populations, it seems reasonable for clinicians to use this measure and feel comfortable that it provides accurate assessments of suicidality. However, we caution clinicians to consider additional means of qualitative inquiry to supplement the use of the measure and provide a fuller picture of the nature and extent of suicidality among African Americans/Blacks.

Child Measures

The Children's Depression Inventory (CDI) The CDI is a self-report measure for use with children and adolescents aged 7–17 (Kovacs 1985). Dr. Kovacs created the measure to address concerns over the use of the Beck Depression Inventory (BDI) with younger populations. The measure includes 27 sets of items comprised of three sentences that describe a young person's thoughts or feelings over the 2 weeks prior to taking the inventory. Respondents are asked to choose which single sentence describes them best (Goldston 2000; Kovacs 1985). The CDI yields a total score ranging from 0 to 54, as well as five subscores: Mood, interpersonal problems, ineffectiveness, anhedonia, and negative self-esteem. Scores of 19 or higher indicate clinical significant depression. Although the CDI does not provide a direct assessment of suicidality, it does include a single item assessing suicidal ideation.

The Children's Depression Inventory II is a full revision of the original Children's Depression Inventory completed in 2010. The new features of the measure include, "new items that focus on the core aspects of childhood depression, revised scales, and new norms that are representative of the US population." (Kovacs 2010; Multi-Health Systems Inc. 2011, p. 1). The measure was designed as a comprehensive measure to assess depressive symptoms in youth aged 7–17 and is available in three forms. The three forms include a child self-report version (CDI-2 Self-report), a parent version (CDI-2 Parent), and a teacher version (CDI-2 Teacher). This version yields a

total score, 2 scale scores (focused on emotional and functional problems) and 4 subscale scores (focused on negative mood/physical symptoms; negative self-esteem, interpersonal problems; and ineffectiveness) from a series of questions to which respondents answer " 0 (absence of symptoms), 1 (mild or probable symptom), or 2 (definite symptom)". The parent version includes just 17 items of "observable" depressive behavior and symptoms to which parents/legal guardians respond using a 4-point scale (0 (not at all), 1 (some of the time), 2 (often), or 3 (most of the time)). The CDI-2 Parent form yields a total score and the 2 scale scores.

Standardization Sample and Psychometric Properties Only two of the approximately 5–6 studies focused on establishing the psychometric properties of the CDI include significant numbers of African American youth. In the first study, Carey and colleagues included a sample that was approximately 38% African American (Carey et al. 1987) while in another, the sample of African American youth was approximately 38% of psychiatric inpatient youth (Hodges 1990).

McLaughlin, Hilt, and Nolen-Hoeksema (2007) tested the CDI's reliability with a sample of middle-school aged children comprised of 11.8% non-Latino African Americans, while another study consisted of children aged 7–12, of which 23.1% were children of color (Finch et al. 1987). A separate study divided groups in emotionally disturbed and nonemotionally disturbed children. About 25 to 40% of the children in the emotionally disturbed group were children of color, while approximately 33.3% of the nonemotionally disturbed group were children of color (Saylor et al. 1984). A separate study included a clinical sample and a nonreferred sample that were 38 and 39% African American, respectively (Carey et al. 1987). The last study reviewed in this section sampled inpatients between the ages of 6 and 18, of which 28.7% were African American (Nelson et al. 1987).

Administering the CDI among adolescents representing different racial/ethnic groups to examine the differences in both internalizing and externalizing symptoms, McLaughlin et al. (2007) found there to be good internal consistency reliability in the CDI ($\alpha = 0.82$), as well as among each racial/ethnic group represented: white ($\alpha = 0.82$), black ($\alpha = 0.79$), Hispanic ($\alpha = 0.82$), and other ($\alpha = 0.85$). Nelson et al. (1987) found a similar Cronbach's alpha ($\alpha = 0.86$) and also calculated that the CDI's inter-item reliability coefficient ranged from 0.021 to 0.435. Test-retest reliability was calculated at 0.87 ($p < 0.001$) after 1 week, and at 0.59 ($p < 0.006$) after 6 weeks (Saylor et al. 1984), while a different study found the CDI's test-retest reliability to be 0.82 ($p < 0.001$) for a 2-week interval and between 0.66 and 0.67 ($p < 0.001$) for longer intervals (Finch et al. 1987). Okwumabua et al. (2003) found that the distributional characteristics of the CDI reported in their sample were similar to those in previous studies with low-income African American youth.

Carey and colleagues (1987) examined the construct and discriminant validity of using the principal component and discriminant analyses, in a large sample of inpatient psychiatric/residential subjects and nonreferred subjects. They determined that the factor structure of the CDI remained generally stable across the populations examined. Moreover, they concluded that clinical and nonreferred subjects could be reliably distinguished using CDI factor scores.

Concurrent validity was examined by predicting whether or not the CDI could reliably identify children meeting DSM diagnostic criteria for depression on the Child Assessment Schedule (CAS) via sensitivity and specificity calculations. Children meeting criteria for depression per the CAS were compared to those labeled as depressed according to the CDI. The CDI had a specificity of 84% (i.e., the incidence of true negative results attained from the CDI when depression is absent). Unfortunately the sensitivity of the CDI was a mere 54% representing the proportion of cases in which the CDI made a positive diagnosis when depression was present (Hodges 1990).

These findings provide evidence for the convergent and discriminant validity of the CDI in that depressed children score significantly higher on the CDI than nondepressed children. In contrast, neither the conduct-disordered nor the anxiety-disordered children scored significantly higher on the CDI than children without these

specific diagnoses, which lends support to the discriminant validity of the CDI (Hodges 1990).

Recommendations The CDI is a widely used child depression measure with some demonstrated adequate psychometric properties for African American youth and most cross-cultural research on the initial form of the measure with international white or unspecified populations (Allgaier et al. 2012). Overall it seems better suited as a screening measure and may not be suitable as a diagnostic tool. Of the research available, very little points to the utility of the revised form of the measure, published in 2010, with African American youth across the socioeconomic spectrum. Future research should therefore examine the use of this measure on socioeconomically and racially diverse samples of youth.

The Children's Depression Rating Scale (CDRS)

The Children's Depression Scale (CDRS) is a 16-item, clinician-administered measure (later revised to a 17-item measure—CDRS-R; Poznanski and Mokros 1996) for the assessment of depression in children between the ages of 6 and 12 years old. Items are measured on a 3-, 4-, 5-, and 6-point scale, and inquire about social withdrawal, capacity for fun, sleep habits, eating habits, irritability, schoolwork, expressive communication, general somatic features, hypoactivity, and depressed mood (Poznanski et al. 1979). The revised version has a score of ≥ 40 as indicating depression, whereas a score of ≥ 28 represents minimal or no depressive symptoms (Poznanski et al. 1979).

Standardization Sample and Psychometric Properties The CDRS was devised and tested on 30 inpatient children in a medical hospital (Poznanski et al. 1979). A follow up to this study was conducted to examine the preliminary psychometric properties of the CRDS-revised version in a sample of 53 outpatient youth 43% of whom were African American (Poznanski et al. 1984). The utility of the revised measure was also examined in a group of 233 school aged children of unspecified race (Poznanski et al. 1985). Finally, in a separate study examining the psychometric properties of the CDRS-R, adolescents with symptoms of depression were assessed. Of all the participants, only 10.3% were African American (Mayes et al. 2010).

Research is equivocal regarding the utility of the CDRS with African American youth specifically. Adolescents with symptoms of depression were assessed with the CDRS-R and the Children's Global Impressions Severity (CGI-S) at screening, baseline, and after 12 weeks of fluoxetine treatment. Internal consistency for the CDRS-R was good at all three stages (screening: $\alpha = 0.79$; baseline: $\alpha = 0.74$; exit: $\alpha = 0.92$). Construct Validity was found in the total score being highly correlated with global depression severity ($r = 0.87$, 0.80, and 0.93, respectively; $p < 0.01$) (Mayes et al. 2010). However, Stein and colleagues found that the clinician administered CDRS functions differently across racial groups in that clinicians rated African American (and Latino) youth as demonstrating more severe symptoms on the observational items of the CDRS-R compared to their white peers. This type of findings may warrant future study to determine if any attributional bias exists in clinician ratings of African American youth depressive symptoms.

Recommendations As symptoms of depression often overlap with other psychiatric disorders, such as other mood, anxiety, and personality disorders, it would be wise to investigate ways in which the collection of psychometric data can be done while holding constant the potential presence of symptoms from other psychiatric disorders. Additionally, since the CDRS-R was only tested with small samples of African American youth, further research must be done to ensure that the CDRS-R is sufficiently effective in measuring depression specifically in African Americans.

The Reynolds Adolescent Depression Scale (RADS) The RADS is a 30-item self-report measure for adolescents between the ages of 13 and 18. The RADS measures depression on five different levels (somatic, anhedonia, cognitive, negative view of self, and loneliness) and

does so on a four-point (1–4) Likert scale, where 1 = almost never, 2 = hardly ever, 3 = sometimes, and 4 = most of the time. The cutoff score has been established at 77, where any score above 77 indicates a symptom endorsement associated with clinical depression. Though, there is one suicide item on the RADS ("I feel like hurting myself"), the RADS is not meant for assessing suicidal ideation or behaviors, but rather to assess the symptoms associated with depression (Reynolds 1986). Though, a second version of the RADS, the RADS-2 (Reynolds 2002), has been developed, it is largely similar to the original RADS, so we will focus mostly on the original version.

Standardization Sample and Psychometric Properties The RADS was standardized on adolescents from 7th to 12th grade (Reynolds 1986). Molock, Puri, Matlin, and Barksdale (2006) conducted a study using the RADS with 212 African American high school students, whose ages ranged from 13 to 19, from a suburb of Washington DC. In another study, subjects were adolescent inpatients from 12 to 17 years old, of which 12% were African American (Krefetz et al. 2002). A final examination of the RADS included adolescent psychiatric inpatients (14–17 years old), of which 12.2% were African American (Osman et al. 2010).

The test developer has consistently found high internal consistency reliability ($\alpha s > 0.90$) and high test-retest reliability ($rs > 0.60$) (Reynolds 1986). Molock et al. (2006) also found a Cronbach's alpha of 0.90. The inter-item reliability coefficient ranged from 0.909 to 0.939, while the split-half reliability coefficient was 0.91 (Reynolds 1986). Conventional Cronbach's alphas for the RADS-2 were calculated for the Dysphoric Mood, Anhedonia-Negative Affect, Negative Self-Evaluation, Somatic Complaints subscales, and the total RADS-2 as 0.85, 0.80, 0.87, 0.80, and 0.94, respectively (Osman et al. 2010).

Concurrent validity was shown between the RADS and the Hamilton Depression Rating Scale with a correlation coefficient of $r = 0.83$ (Reynolds 1986). Convergent validity was demonstrated by strong correlation coefficients with other self-report measures of depression, such as the BDI and the CDI (Reynolds 1986).The strong positive correlation ($r = 0.84$, $p < 0.001$) between the BDI-II and the RADS is another indicator of strong convergent validity (Krefetz et al. 2002). Construct validity was provided by several studies, in which the RADS was compared to other self-report measures for depression, such as the BDI, the CES-D, the Self Rating Depression Scale (SRDS), and the CDI. Correlations between the RADS and each of these other measures were 0.73, 0.75, 0.72, and 0.73, respectively (all of which had $p < 0.001$).

Recommendations Other than Molock et al. (2006), the other studies reviewed here for the RADS have minimal African American participation since the samples used were predominantly white so the findings illustrated in this review should be taken with caution.

Suicide Measures for Children and Adolescents

The Suicidal Ideation Questionnaire—Junior (SIQ-JR) The Suicidal Ideation Questionnaire (SIQ) is a screening measure for the degree of "seriousness" of suicidal ideation. Two self-report versions of the SIQ have been developed: a 30-item version (called the SIQ) originally designed for adolescents in the 10th, 11th, and 12th grades, and a 15-item version (named the SIQ-JR) originally designed for adolescents in grades 7, 8, and 9. Respondents to both versions of the SIQ answer each of the items on a 7-point scale, ranging from 0 ("I never had this thought") to 6 ("almost every day."). Scores range from 0 to 90, with a published clinical cutoff score of 31 (Goldston 2000; Reynolds 1987).

The questions in both versions of the SIQ are founded on theoretical notions of a hierarchy of severity of suicidal behavior and cognitions. This hierarchy states that suicidal behavior and thoughts form a continuum ranging from just thoughts of death, to thoughts of wanting to be dead, to general and then specific thoughts of suicide, to making specific plans for suicidal

behavior, all the way to actually attempting to kill oneself. As most suicide-related items, the wording of suicide ideation questions implicitly refer to "nonzero intent to die" (O'Carroll et al. 1996; Reynolds 1987). There is no item on past or current suicide attempts, so the SIQ cannot be used to identify suicide attempters.

The SIQ-JR has been used in several studies with African American representation in the samples, and has shown great reliability and validity. Though, Reynolds (1987) has insisted that it not be used as a predictive measure for suicide, the SIQ has proven to be useful for identifying suicidal ideators and suicide attempters. Relevant research is summarized below.

Standardization Sample and Psychometric Properties One study had an adolescent inpatient sample consisting of 87% white youth (King et al. 1995), while another study had 13% of their adolescent (ages 13–18) inpatient sample as African American (Spirito et al. 1987). Pinto, Whisman, and McCoy (1997) conducted a representative sample of socioeconomic status but had no normative data of the cultural groups from which they sampled. Reynolds and Mazza (1999) examined the SIQ in adolescent participants from middle schools, of which 91.2% were African American or Hispanic.

The internal consistency reliability of the SIQ-JR within the standardization sample was $\alpha = 0.91$ with similar reliability coefficients found for both males and females, $\alpha = 0.90$. On the second assessment of the SIQ-JR, the internal consistency reliability was $\alpha = 0.94$ for the total sample with again similarly high reliability coefficients found for males ($\alpha = 0.92$) and females ($\alpha = 0.93$) (Reynolds and Mazza 1999). Reynolds (1987) calculated a high internal consistency reliability, $\alpha = 0.97$. Pinto et al. (1997) also found a high Cronbach's alpha for the SIQ-JR ($\alpha = 0.97$). Results of the test-retest reliability analyses of the SIQ-JR for the total sample and by gender show a coefficient of 0.89 for the entire sample, a coefficient of 0.87 for females, and a coefficient of 0.93 for males—all of which are very high (Reynolds and Mazza 1999). Reynolds (1987) also found high test-retest reliability in his standardization sample of adolescents, at 0.72 over 4 weeks.

Pinto et al. (1997) found that adolescents who had attempted or ideated about suicide did not differ with respect to scores on the SIQ, yet both groups had higher scores that nonsuicidal adolescent inpatients. Relatedly, Spirito et al. (1987) observed that, within their adolescent pediatric inpatient sample, suicide attempters who were assessed as having chronic psychiatric problems had higher SIQ scores than those with acute psychiatric problems. Both findings are indicative of the SIQ's concurrent validity. Regarding the measure's predictive validity, though the SIQ is not meant for the prediction of suicide, King et al. (1995) found that SIQ-JR scores from their adolescent inpatient sample were predictive of later suicide attempts.

The validity of the SIQ-JR was determined through a contrasted group approach. This was done through the examination of the SIQ-JR scores of adolescents who had attempted suicide compared to those who had not, given that a history of attempted suicide has been found to be a significant risk factor for later suicidal behaviors. Adolescents who had attempted suicide reported significantly higher levels of suicidal ideation on the SIQ-JR ($M = 28.76$, $SD = 22.34$) than those who had not attempted suicide ($M = 7.91$, $SD = 8.37$) (Reynolds and Mazza 1999).

A recency effect was also anticipated, in the sense that the recency of suicide attempt would be correlated to higher SIQ-JR scores. Adolescents who admitted a suicide attempt in the previous 12 months reported a significantly higher SIQ-JR score ($M = 43.00$, $SD = 22.94$) than did adolescents who attempted suicide more than a year previously ($M = 18.80$, $SD = 16.40$) (Reynolds and Mazza 1999). An analysis of variance was done to further investigate the relationship between SIQ-JR scores and suicide attempt history between the groups of adolescents who reported no history of suicide attempts, an attempt more than a year previously, and an attempt within the past 12 months, which resulted in significant differences between all three groups.

The Diagnostic Interview Schedule for Children (DISC) The DISC is a structured psychiatric diagnostic interview for youth and their parents, covering a myriad of mental disorders seen in children and adolescents ages 6 through 18. While this measure is not depression-specific, it was created to mirror similar adult assessment tools. The latest revision of the DISC by the National Institute of Mental Health (NIMH DISC-IV) is based on the diagnostic criteria from the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV). However, an earlier version of the DISC, the NIMH DISC−2.3, based on the DSM-III-R, is also still in use due to the fact that the most salient differences between the two is that the DISC-IV modified certain unreliable questions and added new sections for schizophrenia and substance abuse—none of which affected questions surrounding mood disorders (Shaffer et al. 2000). Thus, both DISC versions will be reviewed throughout this section.

The DISC is also available in a computer-assisted version, the C-DISC. Lay interviewers can administer this measure after 1–2 days (for the computerized version; 4–5 days for the written version) of training since most measure questions are administered verbatim and worded so that respondents answer via a simple "yes," "no," "somewhat," or "sometimes" (Goldston 2000; Shaffer et al. 2000).

Depressive symptom queries of the NIMH DISC-IV are similar, and reference the 2 weeks, 4 weeks, and a year preceding the interview (Goldston 2000; Shaffer et al. 2000). Like its predecessor, the NIMH DISC-IV focuses on depressive symptoms, but includes questions regarding lifetime suicide attempts, as well as those in the 4 weeks and in the last year immediately prior to the interview. The question about age of first suicide attempt (in the NIMH DISC 2.3) is not included in the NIMH DISC-IV, replaced instead with a question about whether reported suicide attempts required medical attention.

Neither version of the DISC assesses non-suicidal self-injurious behaviors, like cutting. Goldston (2000) argues that the query regarding suicidal ideation in the Youth and Parent versions of the DISC are likely to generate conservative estimates of suicidal ideation due to the use of the word "seriously" as a context for the ideation question (Goldston 2000; Shaffer et al. 2000). Since this word "seriously" is not well explicitly defined, Goldston (2000) argues that the word conveys ambiguity for interviewees, making it difficult for them to respond accurately.

Standardization Sample and Psychometric Properties The community sample used to establish norms for the DISC are described in (Shaffer et al. 2000) as composed of 60% African Americans/Hispanics, while the (Gould et al. 1998) community sample was 13.8% African American. To examine the test-retest reliability of the DISC, one study collected a community sample of parents and children recruited from child and adolescent psychiatric outpatient clinics. All subjects were clinically diagnosed over the past year with DSM criteria for certain common disorders, including depressive disorders. The NIMH DISC-IV was administered twice by lay interviewers. A separate study conducted a similar reliability test using the DISC−2.1. The DISC-IV is regarded as more reliable than previous versions of the DISC with respect to depressive disorders (Shaffer et al. 2000).

Recommendations Though the DISC is one of the more widely recognized assessments used to assess depression in children and adolescents in research studies in particular, relatively few studies have examined its validity and reliability for African Americans. Therefore, further tests on the psychometric of the DISC are encouraged before allowing its extensive use within this cultural groups.

Assessment of Youth Suicide (Subscales)

The Kiddie-Schedule for Affective Disorders and Schizophrenia (K-SADS) Though there are several versions of the K-SADS, our focus here is on the version that has been used most exten-

sively in research over the years—the K-SADS, School Age-Epidemiologic Version (K-SADS-E). The K-SADS-E is a semi-structured interview performed by clinicians on children and adolescent between the ages of 6 and 18, and their parents. Among other psychiatric disorders, the K-SADS-E includes a major depression section in which items regarding suicide and suicidal ideation can be found and have been used in depression and suicide research (Goldston 2000; Orvaschel and Puig-Antich 1987).

What differentiates the K-SADS-E from the other versions of the K-SADS is the specificity in questions about suicidal behaviors. The K-SADS-E has items revolving around recurrent thoughts of wanting to die, suicidal ideation ("Have you thought about hurting or killing yourself?"), the presence of a plan for suicide, suicide attempts ("Did you ever try to kill yourself or done anything that could have killed you?"), and even nonsuicidal physically self-damaging suicidal behaviors (Goldston 2000; Orvaschel and Puig-Antich 1987). The question dealing with suicide attempts is straightforward and implies the standard nonzero intent to die (O'Carroll et al. 1996).

Standardization Sample and Psychometric Properties Two studies used the same group of adolescents aged 13–18 in high schools. Of these adolescents, the overwhelming majority was Caucasian (91.1%), with no indication of the races of the other 8.9% (Lewinsohn et al. 1993; Lewinsohn et al. 1994). Rohde, Mace, and Seeley (1997), on working with adolescents, only had about 1.7% of their participants as African American. A separate study found the vast majority of their participants to be adolescent males (92%) and Caucasian (92%) (Renaud et al. 1999). The last study we examined for standardization properties for the K-SADS-E gave no demographic information on the race of their participants (Frazier et al. 2007).

Lewinsohn et al. (1993) used the K-SADS-E to see how adolescents differed if they had or had not attempted suicide in the past. Overall, they found that adolescents with a history of suicide attempts had: more use of medications, worse health, worse coping skills, lower self-esteem, greater current and lifetime suicidal ideation, more pessimism, more negative attributions, and a greater chance of being diagnosed with depression. In a separate study, it was found that current and lifetime suicide attempts assessed with the K-SADS-E were correlated with a higher chance of being diagnosed with major depression, dysthymia, and anxiety disorders (Rohde et al. 1997). Additionally, in a retrospective psychological autopsy study in which the K-SADS-E was used, suicide completers were discovered to have had a more extensive history of nonlethal suicide attempts than matched community controls (Renaud et al. 1999).

With regards to the predictive validity of the K-SADS-E, Lewinsohn et al. (1994) noted that prior history of suicide attempts is one of the strongest predictors of subsequent suicide attempts, astonishingly increasing the risk 18-fold. Lastly, Frazier et al. (2007) established a high inter-rater reliability for the K-SADS-E for mood disorders across age groups (ages 4–10: $k = 1.00$; ages 11–17: $k = 0.95$).

Recommendations As both Lewinsohn et al. (1993, 1994) studies relied heavily on statistical comparisons, type I error was rather high, and so the findings from these studies should be taken as tentative and replicated to ensure validation. Also, since the normative data provided for these studies appear to lack African American participation, we must be careful to generalize these findings to this cultural group. Ideally, these studies would be redone with a heavier emphasis on African American participation.

CES-D

The Lewinsohn, Rohde, and Seeley (1996) CES-D screening items were discovered to have some predictive validity for later suicidal behavior. Roughly, 16.7% of adolescents who were assessed as having high ideation at an initial screening made a suicide attempt within the subsequent year. Also, about 6.7% of adolescent reporting moderate ideation at an initial screen-

ing made suicide attempt within the next year. Of those with mild ideation at an initial screening, 2.8% made suicide attempts within the following year, and of those who reported no suicidal ideation, only 0.3% made suicide attempts in the next year.

Some of the studies reviewed in this section had samples that were overrepresented by males, calling into question the utility of the CES-D across genders. Additionally, although both supplementary suicide screening sets (Garrison et al. 1991; Lewinsohn 1996) have been used extensively, there is a legitimate dearth of research on their psychometric properties. This lack of knowledge on their reliability and validity is a cause for concern, given the extent to which both are actively used, so research on the CES-D should shift its focus to this area.

CDI On the CDI, suicidal ideation is measured with one item and has the following response choices: 0="I do not think about killing myself;" 1="I think about killing myself but would not do it;" or 2="I want to kill myself." A score of 1 or 2 on this item indicates the presence of suicidal thoughts. This item refers to thoughts about suicidal actions with "nonzero intent to die," which is the widely accepted definition for suicidal behavior (O'Carroll et al. 1996). Since the CDI does not include any items that directly assess suicide attempts, it is not deemed useful for evaluating suicide attempters (Goldston 2000).

CDRS Although, the CDRS is primarily meant for the assessment of depression, it also has two items revolving around suicide, suicide ideation, and morbid ideation. The Suicide and Suicide Ideation item is on a 6-point scale, where 0=no information, 1=none, 2=has thoughts about suicide—usually when angry, 3=recurrent thoughts of suicide, 4=thinks about suicide and names methods or if depressed, strongly denies thinking about suicide, and 5=suicide attempt within the last month or actively suicidal. The Morbid Ideation item is on a 5-point scale, where 0=no information, 1=none expressed, 2=some morbid thoughts—all related to a recent reality event, 3=admits to morbid thoughts on questioning but does not dwell on them, or parents report morbid thoughts of child, and 4=death themes spontaneously discussed or elaborate and extensive morbid ideation (Poznanski et al. 1979; Poznanski and Mokros 1996).

DISC

The subsection of the NIMH DISC 2.3 relevant for assessing suicide and depression focuses on respondent's thoughts of death, suicidal ideation, a specified suicide plan, and the association of suicidal thoughts with dysphoric symptoms. These inquiries reference the 2 weeks and 6 months preceding the interview (Goldston 2000; Shaffer et al. 2000). The DISC 2.3 also requests information from respondents regarding methods of suicide attempts, lifetime suicide attempts, number of suicide attempts, age at first suicide attempt, suicide attempts within the last 6 months, and suicide attempts within the context of dysphoria (Goldston 2000; Shaffer et al. 2000).

Conclusions

Not surprisingly, there is a paucity of research on the assessment of suicidality and depression in African American adults and youth. While we have elucidated the measures of which we are aware with any substantial psychometric evaluation with African Americans, we are limited in our discussions on this topic given that we could identify no measures with a specific focus on African Americans. New measures are currently being examined to assess suicide in multicultural populations (e.g., the Cultural Assessment of Risk for Suicide measure—CARS (Chu et al. 2013) but more research is needed to generate a significant group of measures readily identifiable as highly relevant to the needs of African Americans.

Review of Depression and Suicide Assessments for African American Adults and Youth		
	Adults	
Assessment name	Disorder assessed	Recommendation(s) and/or relevant research findings
Beck Depression Inventory II	Major depressive disorder	Used with adults and youth; tested with African Americans; possibly efficacious
The Center for Epidemiology Studies Depression (CES-D) Scale	Major depressive disorder	Used with adults and youth; tested with African Americans; possibly efficacious
Patient Health Questionnaire—9 (PHQ-9)	Major depressive disorder	Primarily for adults; tested with African Americans; possibly efficacious
The Scale of Suicide Ideation (SSI)	Suicidality	Primarily for adults; tested with African Americans; possibly efficacious
Suicide Probability Scale	Suicidality	Primarily for adults; tested with African Americans; possibly efficacious
Subscales of measures		
Beck Depression Inventory Suicide Subscale	Suicidality	Primarily for adults; tested with African Americans; possibly efficacious
	Youth	
Children's Depression Rating Scale Revised	Depression	For youth; tested with African Americans
		Possibly efficacious, use with caution for cultural relevance
Reynold's Adolescent Depression Scale	Depression	
Children's Depression Inventory	Depression	For youth; very limited use with African Americans
		Use for screening, not diagnosis and follow up with culturally relevant depression diagnostic measure
Suicide Ideation Questionnaire-Jr	Suicidality	Probably efficacious with African American youth
DISC	Suicidality	Due to expense and training needed, this is not a practical measure for most clinicians to consider
Subscales of measures		
CES-D	Suicidality	Possibly efficacious
DISC	Suicidality	Possibly efficacious
CDRS	Suicidality	Possibly efficacious
Kiddie-Schedule for affective disorders and Schizophrenia	Suicidality	Cumbersome and possibly less useful for clinicians

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