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Men's Externalizing Depression: Invariance of the Male Depression Risk Scale and Latent Symptom Profiles among African American and European American Men

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This dissertation, *Men's Externalizing Depression: Invariance of the Male Depression Risk Scale and Latent Symptom Profiles among African American and European American Men*, by Robert Alan Stewart, Ed.S., was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree, Doctor of Philosophy, in the College of Education & Human Development, Georgia State University.

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Men's Externalizing Depression: Invariance of the Male Depression Risk Scale and Latent Symptom Profiles among African American and European American Men

by

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Under the Direction of Jeff Ashby, Ph.D.

ABSTRACT

Empirical studies of the well-documented deleterious psychological effects of rigid conformity to traditional masculine norms suggest that many men experience, express and respond to negative affect through a phenotypic externalizing subtype of depression that combines internalizing depression with externalizing symptoms such as substance use, impulsivity, anger/irritation and risk-taking. These symptoms are not captured by the largely internalizing criteria (e.g. low mood, anhedonia, fatigue) indexed in current depression criteria. Researchers examining men's externalizing depression have used the Male Depression Risk Scale (MDRS-22; Rice, Fallon, Aucote, & Möller-Leimkühler, 2013), a brief, psychometrically sound self-report instrument, with largely homogeneous Canadian and Australian samples. The current

study extends research on men's externalizing depression to more diverse US populations by evaluating the measurement invariance of the MDRS-22 across Black/African American men (AA) and White/European American men (EA), and applying latent profile similarity analysis (Morin, Meyer, Creusier, & Biétry, 2016) to identify MDRS-22 subpopulations in each sample. Participants were US adult men (AA n = 324, EA n = 319) recruited using Amazon Mechanical Turk. Results supported scalar invariance for the MDRS-22 and indicated the existence of three latent MDRS-22 profiles. While most men were characterized as asymptomatic, two additional profiles, an elevated mixed internalizing/externalizing pattern and a high externalizing pattern were also noted in both groups. EA men were differentiated only by high drug use scores, with the remainder of their externalizing symptoms following a pattern that more resembled the mixed elevated subgroup. High-profile AA men exhibited a range of heightened externalizing symptoms. Results suggest that AA and EA men experience, express and respond to elevated levels of depression in heterogenous ways.

INDEX WORDS: Men, masculinity, depression, externalizing, African American, European American, latent profile analysis, measurement invariance

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Chapter 1. Men's Externalizing Depression: Background, Current Status, Future Directions

Depression represents the largest source of functional impairment in the world (World Health Organization, 2017). It is estimated to account for 40% of global mental illness, more than alcohol use, illicit drug use, and anxiety disorders combined (Whiteford et al., 2013). However, according to "perhaps the most robust finding in psychiatric epidemiology" (Castle & Abel, 2016, p. 65), men are diagnosed with unipolar depression half as often as women yet die by suicide four times as often (Curtin et al., 2016). These disparities are particularly significant given that unipolar depression is estimated to underlie half to two thirds of all suicide deaths (Hawton et al., 2013; Möller-Leimkühler, 2003). Recent research on the symptom patterns underlying the gender-based discrepancies in diagnosis has significant implications for how clinicians understand and treat men's depression.

Researchers have historically attempted to account for these diagnostic inconsistencies by examining women's apparently greater susceptibility to depression (e.g. Hyde et al., 2008; Weissman & Klerman, 1977). This approach has yielded evidence of contributory factors such as gender differences in response styles (Nolan-Hoeksema, 2001) and gender stratification (Elliott, 2001). It has also stimulated an important focus on women's experiences of, and risk factors for, depression (Smith et al., 2016). Despite substantial research, however, these diagnostic discrepancies remain for many investigators "well-documented, poorly understood and multifactorial" (Kunst et al., 2018, p. 1).

There is a growing consensus among researchers (e.g. Magovcevic & Addis, 2008; Martin et al., 2013; Möller-Leimkühler, 2002; Pollack, 1998; Rice, Kealy, et al., 2018b; Rutz, 1996), clinicians (Cochran & Rabinowitz, 2000; Kantor, 2007; Real, 1997; Wexler, 2005),

professional organizations (American Psychological Association (APA), 2005, 2018a), and government agencies (e.g. National Institute of Mental Health, 2005, 2017; Substance Abuse and Mental Health Services Administration, 2013) that men's depression is under-diagnosed and poorly understood, and that many men experience, express, and respond to depression in ways that differ from DSM depression criteria. Extrapolating from a substantial body of research on masculine gender norms (Levant & Richmond, 2016; O'Neil, 2008, 2013), researchers have highlighted a pattern of depressive symptoms referred to as male or masculine depression (e.g. Rice, Kealy, et al., 2018b; Rochlen et al., 2010). In contradistinction to the exclusive consideration of internalizing symptoms indexed in conventional, i.e. DSM, depression such as low mood, sadness, anhedonia, worry, guilt, and low energy, this phenotypical pattern includes externalizing symptoms such as substance use, risk-taking behavior, preoccupation with work or other distracting routines, social withdrawal, impulsivity, anger outbursts, irritability and emotion suppression (Rice et al., 2013). No estimate of the incidence of this externalizing depression pattern has been made, although one very large (n = 5692) retrospective study eliminated the discrepancy in depression diagnosis in its data set by including a limited number of such externalizing symptoms (Martin et al., 2013). Although evidence suggests strong correlations with DSM depression (e.g. Martin et al., 2013; Rice et al., 2013) as well as suicidal behavior (Gvion & Apter, 2011; Rice, Kealy, et al., 2018b; Rice et al., 2017), men exhibiting this symptom pattern are less likely to see themselves as depressed (Nadeau et al., 2016), be diagnosed with depression (Genuchi & Mitsunaga, 2015), or be included in depression research studies (Smith et al., 2016).

The recently published American Psychological Association guidelines for clinical practice with boys and men suggest that clinicians "strive to build and promote gender-sensitive

psychological services" and "be aware of potential underlying affective disorders such as depression…when considering therapeutic interventions with men" (APA, 2018a, pp. 16-17). The current paper responds to these suggestions by providing insight into how men experience, manifest and respond to depression. The research on, clinical implications of, and future directions for men's externalizing depression are also reviewed.

Background: Men's Externalizing Depression

Internalizing disorders, characterized by strong negative affect, include depression, anxiety, and somatic disorders (Goldberg et al., 2009). Internalizing symptoms include low mood, low-self-esteem, sadness, anxiety, worry, fatigue, guilt, emptiness, rumination, and somatic complaints. Externalizing disorders, which are characterized by behavioral disinhibition and emotion dysregulation, include disruptive, conduct, substance-related, and impulse control disorders such as ADHD, antisocial personality disorder, and alcohol use disorder (Krueger & South, 2009). Externalizing symptoms include stress, irritability, anger, hostility, aggression, risk-taking, social withdrawal, substance use, distraction, sensation seeking, increased sexual behavior, and hyperactivity (Addis, 2008; Genuchi & Mitsunaga, 2015). While substantial literature at the intersection of gender and mental health shows that women and men experience equal rates of psychiatric disorders overall (Rosenfield & Smith, 2010), men are at substantially greater risk for externalizing disorders (Addis, 2008; Smith & Mouzon, 2014; Smith et al., 2016) and, when depressed, for externalizing symptoms (Rice et al., 2014).

The distinction between internalizing and externalizing disorders, which originated in research on children's psychopathology (Himmelweit, cited in Achenbach, 1966; Eysenck, 1953), has been replicated in multiple large-scale empirical studies of adult psychiatric disorders (Krueger, 1999; Vollebergh et al., 2001), and the DSM-5 itself is structured to reflect broad

clusters of internalizing and externalizing disorders (American Psychiatric Association (APsA), 2013; Regier et al., 2013). The idea that men's depression might differ from conventional depression is decades old as well (e.g. Hammen & Peters, 1977; Pleck, 1981; Warren, 1983; Williams & Spitzer, 1983), but the concept of men's depression as a coherent syndrome involving mixed internalizing and externalizing symptoms emerges largely from a single project. The Gotland study (Rutz et al., 1989), an early 1980s Swedish effort to ameliorate the high suicide rate on the rural island of Gotland, provided general practitioners with several days of intensive training in recognizing conventional (i.e. DSM-III) depression. The program was initially quite successful—after three years, Gotland had the lowest suicide rate in Sweden (Rutz, 1996). However, the researchers noted that the "decrease in suicides after the program was almost totally a result of a decrease in female suicides. The number of male suicides was almost unchanged" (Rutz et al., 1995, p. 524). In accounting for the consistent rate of men's suicide deaths, the Gotland researchers described a "male depressive syndrome" (Rutz, 1996, p. 65) characterized by higher rates of externalizing symptoms such as "irritability, aggressiveness, an acting out behaviour, a reduced impulse control, a lowered stress tolerance, and substance abuse, mainly alcohol" (Wålinder & Rutz, 2001, p. S22) as well as isolation, inhibited help-seeking, avoidance of health care, poor self-care, and denial of weakness (Rutz et al., 1995). To better identify at-risk men, they constructed the Gotland Male Depression Scale (GMDS; Zierau et al., 2002), the first self-report instrument intended to examine men's externalizing depression symptoms. Its publication encouraged discussion and research regarding men's depressive symptom patterns (e.g. Brownhill et al., 2005; Möller-Leimkühler, 2002, 2003), and results from several research studies using the GMDS provided support for men's externalizing depression as a construct (e.g. Chu et al., 2014; Madsen & Juhl, 2007; Wide et al., 2011; Winkler et al., 2005).

However, the scale's psychometric properties and validity were brought into question (Magovcevic & Addis, 2008) when multiple research studies evaluating the latent factor structure of the GMDS revealed discrepant results (Innamorati et al., 2011; Möller-Leimkühler & Yücel, 2010; Möller Leimkühler et al., 2007), none of which were consistent with the original, a priori factor structure (Zierau et al., 2002). Additionally, externalizing depression as assessed by the GMDS was shown to be frequent in women (Angeletti et al., 2013), and one study showed significantly higher GMDS scores for females relative to males (Möller-Leimkühler & Yücel, 2010). Although Rice, Aucote, Möller-Leimkühler, et al. (2015) attempted to revise the scale by disaggregating an item containing three parts, they were unable to validate an acceptable latent factor structure, and the scale was largely dropped from use.

Concurrently with the Gotland studies, scholars in the psychology of men and masculinities were scrutinizing Western masculine norms, their relationship with physical and mental health outcomes, and a range of associated mediators and moderators (e.g. Levant & Pollack, 1995; O'Neil, 2008, 2013). Among the conclusions from this substantial body of research was that conformity, and particularly rigid conformity, to masculine norms emphasizing independence, toughness, achievement, unemotionality, and avoidance of traditionally feminine behaviors (e.g. David & Brannon, 1976; Pleck, 1981, 1995) was closely linked to a variety of negative physical and mental health outcomes, including increased substance abuse, externalizing disorders, and conventional depression (Gerdes & Levant, 2018; O'Neil, 2008). Clinicians who had integrated this research with their experience in psychotherapy with men (e.g. Rabinowitz & Cochran, 2008; Real, 1997; Wexler, 2005) described an externalizing symptomology much like the Gotland syndrome, which they referred to as masculine or masked depression. The term masked depression was used in reference to the invisibility of men's

depression in the community, among mental health professionals, and to men themselves (Cochran & Rabinowitz, 2000).

Theoretical Approaches to Men's Externalizing Depression

While no single theory has guided the study of men's depression, substantial portions of the research literature emerge from two quite different approaches: the sex differences framework described by Addis (2008), which is characteristic of a great deal of psychiatric research, and Gender Role Strain Theory (Pleck, 1981, 1995), which underlies a wide range of studies in the psychology of men and masculinity. Two additional frameworks discussed by Addis (2008), masked depression and masculine depression, have also been applied by theorists and researchers in attempting to understand men's depression.

Sex Differences Framework

Psychiatric research tends to emphasize biological explanations for mental disorders over psychological, psychosocial, or biopsychosocial considerations (e.g. Pardue & Wizemann, 2001; Wamboldt et al., 2015). Substantial psychiatric research on men's depression is focused on examining and comparing dichotomous sex differences, which are considered both diagnostically and therapeutically important (Addis, 2008). Indeed, use of the term gender in the psychiatric literature to refer to conceptual schemas other than the gender binary is uncommon, and the word is largely a synonym for sex differences (e.g. Cleare et al., 2015; Wenzel et al., 2005). Some support for this approach can be found in research on crying (Salokangas et al., 2002) and rumination (Nolen-Hoeksema & Harrell, 2002), both of which are more prevalent in women than men.

The sex differences framework has been criticized for its lack of consistent results, particularly as studies of sex differences in the severity and mean number of symptoms and the

duration and prevalence of depressive episodes continue to find conflicting results (Hildebrandt et al., 2003; van Loo et al., 2018). As Addis notes, “the sheer number of studies devoted to analyzing sex differences in depression far surpasses the reliable findings that these studies have generated” (2008, p. 156). Moreover, focusing on sex differences restricts the kind of questions that can be asked and answered, limiting the capacity of such research to contribute to the understanding of men’s depression (Addis & Cohane, 2005).

Gender Role Strain Theory

In contradistinction to the biological focus of sex differences research, Pleck’s Gender Role Strain Theory (GRST; Levant & Richmond, 2016; Pleck, 1981, 1995), an empirical theory grounded largely in social learning, social constructivist, and feminist paradigms, provides a useful structure for understanding the effects of masculine gender norms on men’s mental health. Feminist social theory holds that sex-congruent enactments of gender, referred to as gender roles, garner both tangible and intangible rewards in a patriarchal culture and, over time, become normative, obligatory, and eventually are embedded in, inter alia, neural pathways, psychological processes, and social interactions (Butler, 2006; Fausto-Sterling, 2005, 2012; Levant & Richmond, 2016). GRST frames masculine gender roles in terms of stereotypes, norms, and expectations such as success, power, dominance, competitiveness, toughness, self-reliance, independence, restrictive affection and emotionality, and avoidance of feminine-typed behavior (Levant & Richmond, 2016). Such masculine norms are theorized to be contradictory, variable across time, dependent on circumstances, and individually dystonic to differing degrees. Adherence to these norms is for many men grounded in shame and self-stigma (e.g. Krugman, 1995; Vogel et al., 2006) and reinforced by social sanctions (Heesacker et al., 1999; Magovcevic & Addis, 2005; Oliffe et al., 2016; Starr & Davila, 2008) that are more severe for men than for

women (Hammen & Peters, 1977; Joiner et al., 1992; Moss-Racusin et al., 2010). In consequence, men across the spectra of intersecting sexual and gender identities struggle to negotiate adherence to narrow, conflicting, dysfunctional or unattainable standards. This struggle generates developmental and psychosocial strains, distress, and impairments, often referred to as gender role strain (Pleck, 1995). Additionally, continued adherence to masculine norms inhibits the ability of boys and men to cope adaptively, for example by hindering help-seeking and emotional expression. Rigid adherence to masculine norms is theorized to place men at increased risk of mental health issues, including depression (Pleck, 1995).

Masked Depression Framework

GRST and the sex differences approach have provided generalized frameworks within which to consider men's depression. More specific considerations of how masculine norms are thought to shape men's perceptions, symptoms, and responses to depression can be found in two inductively derived frameworks (Addis, 2008), masked depression and masculine depression. Masked depression proposes that men suffer from conventional depression, but suggests that the symptoms are masked by their responses to the underlying disorder, which are inflected by traditional masculine gender norms (e.g. Cochran & Rabinowitz, 2000; Diamond, 2004; Hart, 2000; Kantor, 2007; Lynch & Kilmartin, 1999; Rabinowitz & Cochran, 2008; Real, 1997; Warren, 1983; Wexler, 2005). Under this framework, men's depression is seen as a "private experience, unshared with others and possibly also hidden from others, that men attempt to alleviate or remove by their own efforts without external help…because the experience of depression is incompatible with the male sex role and masculine socialization" (Warren, 1983, p. 147). The emphasis of masked depression is twofold: first, it focuses on how men repress—by hiding, denying, and avoiding—camouflage, reframe, and distract from prototypical symptoms,

allowing them to conform more closely to or avoid violating traditional masculine norms (Cochran & Rabinowitz, 2000; Warren, 1983). Second, it emphasizes that conventional depression symptoms are for many men unmasculine, unfamiliar, or unrecognized. As a result, they tend to interpret, express, and manage negative affect through a set of externalizing symptoms that are incongruent with both popular stereotypes and the diagnostic criteria of conventional depression. These externalizing symptoms are, however, consistent with and even confirmatory of traditional masculine gender norms. They include over-focus on work or other distracting routines (Herbst et al., 2014), anger, and aggression (Genuchi, 2015; Winkler et al., 2004), risk-taking, interpersonal conflicts, emotional avoidance, social isolation, and substance use (Cochran & Rabinowitz, 2000; Rice, 2011; Rutz & Rihmer, 2007).

Despite assertions to the contrary (e.g. Addis, 2008), results from multiple research projects provides ample illustrations of masked depression. Rabinowitz and Cochran (2008), for example, provide a detailed discussion of a case of masked depression, as well as numerous short case vignettes (Cochran & Rabinowitz, 2000). Additionally, multiple studies both quantitative (e.g. Herbst et al., 2014; Nadeau et al., 2016; see also Latalova, Kamaradova, & Prasko, 2014 for a review) and qualitative (e.g. Galasinski, 2008; Heifner, 1997; Hudson et al., 2018; O'Brien et al., 2005), offer clear examples of masked depression.

Indirect evidence provides further support for this framework. Men are much less likely to seek help for medical (Hale et al., 2010) or mental health problems (Addis & Mahalik, 2003; Galdas et al., 2005), ask questions of their clinician and have those questions answered fully (Pendleton & Bochner, 1980), disclose depression symptoms (Courtenay, 2002), and have their depression symptoms recognized by their clinician (Potts et al., 1991). Men’s depression may, in some senses, also be masked from themselves. Men who report greater conformity to traditional

masculine norms, for example, are more likely to use immature or neurotic defenses, e.g. projection (Mahalik et al., 1998), score higher on assessments of alexithymia (Levant et al., 2003), and have greater difficulty in identifying or describing affective symptoms (Levant, 2001) or depressed moods (Brownhill et al., 2005).

However, while *masked* may be an accurate description of how some researchers and clinicians perceive men's depression, the masked depression framework has a number of limitations. Perhaps most seriously, as a theoretical construct it is diagnostically problematic (Addis, 2008). The current system for diagnosing psychopathology, embodied in the DSM-5, is descriptive and categorical, defining disorders by the presence or absence of signs and symptoms rather than by underlying pathology or etiology (Hyman, 2010). This process makes it impossible to diagnose depression without observed or self-reported symptoms that meet DSM criteria. Masked depression's focus on underlying symptoms is a crucial limitation given the evidence that men's depression is underdiagnosed and particularly given the association of externalizing symptoms with increased suicidality (e.g. Rice, Oliffe, et al., 2018).

The masked depression framework may also be unnecessarily complex, subsuming three more parsimonious constructs under a single concept: conventional depression, externalizing depression, and stigma. The latter construct has substantial research support, particularly in the context of men's help-seeking (e.g. Hammer & Vogel, 2010; Latalova et al., 2014; Magovcevic & Addis, 2005; Oliffe et al., 2016; Pederson & Vogel, 2007) and connects logically with substantial theorizing and empirical research on shame as a moderator of men's depression (Krugman, 1995; Osherson & Krugman, 1990; Rice, Aucote, Parker, et al., 2015; Shepard & Rabinowitz, 2013). A framework that examines men's depressive symptom patterns separately

from the stigma and shame associated with such a disorder could resolve the methodological and diagnostic issues, allowing researchers to focus on men's depression symptoms.

Masculine Depression Framework

The masculine depression framework (Addis, 2008) proposes that some men's depression is phenotypically different from conventional, i.e. DSM, depression because it incorporates a set of externalizing symptoms. Rather than functioning to conceal conventional depression as the masked depression framework suggests, these externalizing indicators reflect "integral aspects of men's distress…[and] exist as symptoms in their own right" (Nadeau et al., 2016, p. 7). Men who conform to traditional masculine norms have been shown to experience more severe externalizing symptoms (Rice et al., 2013). Simultaneously, these same norms inhibit men's help-seeking as a result of stigma-related processes (Latalova et al., 2014).

Evidence supporting the masculine depression framework comes from a variety of sources. Qualitative studies of men's depression consistently report externalizing symptoms (e.g. Oliffe, Robertson, et al., 2010; Rochlen et al., 2010), and multiple quantitative studies have found increased rates of externalizing symptoms among conventionally depressed men (e.g. Cavanagh et al., 2016). Men and women with recent negative life events have shown elevated internalizing and externalizing symptoms over time (15 weeks), although men's levels of externalizing symptoms were substantially higher than women's (Rice et al., 2014). Similarly, a meta-analysis by Cavanagh and colleagues (2017) found that conventionally depressed men are likely to exhibit substance misuse, risk-taking, and impaired impulse control both more frequently and more intensely than conventionally depressed women.

Multiple quantitative studies have found that measures of masculine norm conformity predict both self-reported conventional depression (Iwamoto et al., 2018; Latalova et al., 2014;

Shepard, 2002) and externalizing symptoms (Rice et al., 2013). Conventionally depressed men who score higher on conformity to traditional masculine norms are more likely to exhibit externalizing symptoms, while men who score lower are more likely to exhibit conventional depression symptoms (Rice et al., 2013). Additionally, the presence of greater externalizing symptoms was associated with clinically significant levels of depression, more negative life events, and recent suicidal behavior (Rice et al., 2016; Rice, Aucote, Parker, et al., 2015; Rice et al., 2017).

More indirectly, studies show that discrepancies in rates of depression diagnosis between men and women are reduced in cultural groups that are intolerant of antisocial or risk-taking behavior, e.g. among the Amish or Orthodox Jews (Egeland & Hostetter, 1983; Loewenthal et al., 1995). Men's externalizing depression symptoms (stress, irritability, aggression, risky behaviors, hyperactivity, and substance abuse), unlike conventional symptoms, failed to increase the odds of seeking help for depression or other mental health concerns (Call & Shafer, 2018).

Current Status: Men's Externalizing Depression

Researchers and clinicians have referred to men's externalizing depression by a variety of terms. *Masked depression*, as noted above, is problematic as a construct (although perhaps useful as a heuristic). *Male depression* and *masculine depression* suggest that externalizing depression is specific to men, for which the evidence is at best inconclusive (Möller-Leimkühler & Yücel, 2010; Price et al., 2018; Rice et al., 2014). Additionally, women who are non-conforming in gender or gender role orientation may well exhibit fewer conventional depression symptoms and more externalizing depression symptoms, although no research has yet addressed this possibility. To avoid these issues and assumptions, the current paper uses *externalizing depression* (Nadeau et al., 2016; Rice et al., 2016) and, more precisely, *men's externalizing depression*.

Measurement and Symptomology

Following the GMDS, a number of instruments were designed to measure depression in men. Most, however, were constructed ad hoc rather than through an explicit and formal development process (e.g. Brownhill et al., 2003; Diamond, 2008; Martin et al., 2013). One exception is the Masculine Depression Scale (MDS; Magovcevic & Addis, 2008). Working from a theoretical conceptualization of men's depression as a combination of internalizing and externalizing symptoms, its developers used scale a development methodology proposed by DeVellis (1991), generating an original item set through literature review, expert input and hypothesized symptoms. Despite its theoretical grounding and careful development, however, the initial developmental sample, made up of men in the local community at risk for depression due to recent life stressors, was quite small (N = 102). The MDS was criticized for its inability to specify externalizing sub-factors or discriminate conventional depressive symptoms and their correlates from symptoms specific to masculine depression (Ajayi, 2011; Rice, 2011). Like the GMDS, the MDS yielded some positive results, including a strong correlation between endorsement of masculine norms and men's externalizing symptoms of depression (r = .42-.48, p < .01; Magovcevic & Addis, 2008). Research using the MDS found that males endorsed more externalizing symptoms than females (Genuchi & Mitsunaga, 2015) and that anger and hostility but not aggression were predictive of masculine depression symptoms in men (Genuchi, 2015).

Research on men's externalizing depression was further advanced by the development and validation by Australian, Canadian, and German researchers of the Masculine Depression Risk Scale (MDRS-22; Rice et al., 2013), the first brief, psychometrically sound multidimensional instrument designed to measure men's externalizing depression. Constructed using current scale development methodology, the MDRS-22 has 22 items in six subscales

measuring distress, drug use, alcohol use, anger and aggression, somatic symptoms, and risk-taking.

Results from empirical studies using the MDRS-22 have found significant relationships between men's scores and higher conformity to masculine norms (Rice et al., 2013), greater prototypical depression (Rice et al., 2016), more negative life events (Rice, Aucote, Parker, et al., 2015), and recent suicidal ideation (Rice, Kealy, et al., 2018a). Additionally, a recent study showed that potential clinical cutoff scores on the MDRS-22 identified 85% of men who had recently attempted suicide while the Patient Health Questionnaire (PHQ-9), which uses the DSM-5 Major Depressive Disorder (MDD) criteria to screen for depression (Kroenke & Spitzer, 2002), identified 54% of recent male suicide attempters (Rice et al., 2017).

In terms of symptomology, no criteria for men's externalizing depression have yet been proposed, although a range of symptoms have been discussed (Addis, 2008; Cochran & Rabinowitz, 2000; Rice et al., 2013). The most frequently identified externalizing depression symptoms include anger, irritability, risk-taking behavior, stress and stress intolerance, substance abuse, and social withdrawal. A second, less commonly identified set of symptoms includes somatic complaints, over focus on work or school, emptiness/burnout, anxiety, and hypochondriasis. Two additional symptoms, changes in sexual behavior and blunted affect, have been discussed repeatedly in the literature and are worth noting (Oliffe et al., 2017; Oliffe, Kelly, et al., 2010; Winkler et al., 2004).

Course and Demographics

Research regarding the course of men's externalizing depression over time is limited. A large (N = 1,057) longitudinal twin study identified externalizing psychopathology as a major etiological factor in men's conventional depression (Kendler & Gardner, 2014). An Australian

longitudinal study examining both conventional and externalizing depression symptoms among an online sample (N = 233) showed that both co-occurred over time (15 weeks) for men and women experiencing negative life events (Rice et al., 2014). However, men encountering a moderate to high degree of stressful life events showed substantially higher externalizing symptoms than women in comparable circumstances.

Little or no research on men's externalizing depression by demographic characteristics (e.g. age, race, ethnicity, sexual orientation, SES, class) has been conducted. None of the externalizing depression scales discussed in the current paper have been examined for measurement invariance, and most research has identified samples as majority White, Anglo, of European origin, or non-specific. One study examining men's hypothesized responses to life stressors found that men's conformity to masculine norms was a significant predictor (r = .18, p < .01) of externalizing depression symptoms, with Black/African American men scoring highest on conformity (M = 32.57), and White men scoring lowest (M = 28.84; Nadeau et al., 2016). This is in line with other research showing a tendency among Black and African American men to score higher on measures of conformity to masculine norms (Griffith et al., 2012; Vogel et al., 2011), but it fails to explain African American men's lower incidence of self-reported conventional depression (Compton et al., 2006; Lincoln et al., 2011; Ward & Mengesha, 2013). The dearth of research with diverse populations belies the importance of understanding how men of color experience, express, and cope with depression in light of structural racism and higher than average rates of poverty, unemployment, disenfranchisement, incarceration, and health disparities (APA, 2018b).

Implications for Clinicians

Assessment, Diagnosis, and Treatment

Male clients may exhibit depression symptoms that vary substantially from current diagnostic criteria (Rice et al., 2013). Adopting gender-aware assessment strategies that incorporate research on masculine norms and men's ways of understanding, manifesting, and dealing with depression may provide clinicians with greater insight into client issues. Cochran and Rabinowitz (2003) suggest a two-pronged approach: first, assessing male clients in terms of current diagnostic criteria for depression, and second, evaluating for characteristics of externalizing depression. The research discussed above strongly suggests that masking mechanisms such as gender roles and stigma are likely to contribute to poor clinical visibility of externalizing depression. While masked depression may be theoretically problematic, it characterizes important aspects of men's understanding, manifestation, and response to depression, and may be a useful clinical heuristic.

No fully validated externalizing depression instruments are currently available for use by clinicians in practice, but research leading to clinical applications of the MDRS-22 shows progress, and cut scores identifying men at increased risk for depression and suicide have been validated (Rice, Kealy, et al., 2018a, 2018b; Rice et al., 2017). The MDRS-22 has been used only in research setting thus far, and it has not been tested for invariance across diverse populations. For now, clinicians should consider using clinically validated measures of individual externalizing symptoms, e.g. anger, substance use, and risk-taking, as well as addressing suicidality. Such symptoms may exacerbate depression, impede treatment progress, and increase the risk of accidental death or suicide (Cavanagh et al., 2017; Rice et al., 2014). Additionally, because current unipolar depression categories are limited to MDD and Persistent

Depressive Disorder (APsA, 2013), clinicians should be aware that externalizing depression may manifest as a sub-clinical syndrome that nonetheless could place men at heightened risk (Rice, 2011).

Men seek treatment for mental health issues at somewhere between one half and one sixth the rate of women (Martin et al., 2013; World Health Organization, 2017), in large part due to traditional masculine gender norms such as independence, toughness, and stoicism. While discussion of the considerable literature on men's help-seeking is beyond the scope of this paper (see Galdas et al., 2005; Vogel & Heath, 2016; and Yousaf et al., 2015 for reviews), two factors relevant to men's help-seeking bear directly on effective treatment for men's externalizing depression: gender bias and gender-sensitive therapy. In terms of the former, understanding of men and masculinities is an important aspect of multicultural competency (Liu, 2005). In addition, research shows that numerous men report encountering gender bias in therapy (Mahalik et al., 2012) which negatively affects their treatment (Cochran & Rabinowitz, 2000; Heesacker et al., 1999). Absent the requisite awareness regarding one's own assumptions, values, and biases, clinicians are unlikely to develop the knowledge and skills necessary to provide the "gender-sensitive psychological services" called for in the recently published guidelines for practice with boys and men (APA, 2018a, p. 17; although see Garb, 1997).

The prevalence of conventional depression as a mental health diagnosis has encouraged the development of evidence-based treatments (EBTs) and empirically-supported depression treatments (ESTs), including cognitive-behavioral, interpersonal, problem-solving, and acceptance and commitment therapy (APA, 2016). While research shows these to be effective for men with conventional depression (Sotsky et al., 1991; Thase et al., 1994), no EBTs or ESTs have been developed to address men's externalizing depression. Gender-sensitive treatments for

conventional depression have been developed, and these may be helpful in addressing some aspects of externalizing depression. These treatments include the integration of GRST into cognitive-behavioral therapy (CBT) to treat cognitive distortions typical of depressed men (Mahalik, 1999, 2001); a psychodynamic approach that addresses the repercussions of men's unresolved loss and grief (Cochran & Rabinowitz, 1996) and abrogated childhood holding environment (Pollack, 1998); and the adaptation of emotionally-focused couples therapy for treating depression in partnered men (Wittenborn et al., 2012). Additionally, a number of authors have suggested that motivational interviewing (Scholz & Hall, 2014), strengths-based, positive-masculinity approaches (Kiselica & Englar-Carlson, 2010), and collaborative, action-oriented treatments that focus on setting concrete goals and attaining practical skills (Seidler, Rice, Oliffe, et al., 2018) may be particularly effective when adapted to men's needs.

Empirical research regarding effective therapeutic approaches and techniques with men has yielded useful guidance for clinicians. Bedi and Richards (2011), for example, identified factors in the formation of the therapeutic alliance that were important to male clients. They suggest that "the most important thing to do may be to help bring out the issues in a manner felicitous to many men: asking questions, providing suggestions, validating the client's experience, identifying feelings, asking about goals, normalizing the client's experience" (p. 388). Bedi and Richards also highlighted the importance of overt indications of respect (e.g. greetings, following the client's seating and office preferences) and providing pragmatic assistance (e.g. teaching skills, helping with medication issues) as highly-rated factors for male clients. This aligns closely with qualitative research by Emslie and colleagues (2007), who found that male clients identified as important those therapist skills that helped them talk, as opposed to therapist listening skills, and those therapies that resulted in practical, real-world problem solving

(e.g. CBT) as opposed to therapies they saw as “just talking” or “emoting” (p. 49). Other research has emphasized the importance of recognizing and working with *normative male alexithymia*, the tendency, resulting from male socialization, for many men to be unaware of their feelings and even bodily sensations (Levant, 1996, 2001).

In terms of negative factors, a separate study found six categories of incidents that male clients identified as detrimental to the formation of a therapeutic alliance (Richards & Bedi, 2015). The most common incidents fell into two categories: “not the right fit/approach” and “client unsure of what to expect in session” (p. 176). Examples of detrimental therapist behaviors from the first category included being reserved or inflexible, using interventions or techniques that failed to match the client’s needs, understanding or expectations, and failing to offer multiple solutions; from the second, failing to provide enough information about the therapeutic process, having an impersonal or unemotional attitude, and violating perceived agreements or acting inconsistently.

Echoing some of the detrimental factors identified above, an Australian study found that men identified a number of poor engagement strategies as damaging to their ability to participate in depression treatment even when motivated (Seidler, Rice, Oliffe, et al., 2018). These included a deficient or non-existent orientation to, and insufficient time for questions about the therapy process; a lack of client understanding regarding the “mechanics”, “conceptual model”, length and cost of therapy (p. 409); failure to focus on the client’s individual history, present issues, and future goals, and to recall such details across sessions; failure to initiate and maintain a collaborative, shared-control treatment approach; and the lack of a structured approach that included a “roadmap”, a brief weekly agenda and specific, practical outcomes.

Non-empirical recommendations for therapy with men have been addressed in a number of reviews (Beel et al., 2017; Cochran & Rabinowitz, 2003; Mahalik et al., 2012; Wade & Good, 2010). Most recently, Seidler and colleagues (2018) provided a valuable review of such literature over the last two decades, and identified four consistently endorsed themes: the intentional, focused use of therapeutic techniques (e.g., normalizing; validating) that help foster a collaborative relationship; a structured, transparent, goal- and action-oriented therapeutic approach; the adaptive use of language that is straightforward jargon-free, and uses metaphor, humor, and storytelling; and the need for clinicians to recognize and surmount their own gendered expectations and to work instead to the client's own gender socialization and constructions of masculinity.

Scholars and clinicians over the last two decades have also begun to provide practitioners with resources to support gender-sensitive counseling and therapy with boys and men of diverse backgrounds, identities, experiences, and needs. Collections of such material have been published regarding therapy with men who are, for example, gay (Kocet, 2014), Asian American (Liu et al., 2011), younger (Haen, 2011; Kiselica et al., 2011; Verhaagen, 2011), traditional (Brooks, 1998; Robertson, 2012), partnered (Englar-Carlson & Shepard, 2005; Shepard & Harway, 2012), fathers (Oren & Oren, 2010), older (Vacha-Haase et al., 2011), widowed (Troyer, 2014), in recovery (Woodford, 2012)and diagnosed with ADHD (Kapalka, 2010). Large gaps nonetheless remain in the practice literature with regard to men's multiple identities (American Psychological Association, 2018a, 2018b).

Future Research

Efforts to understand men's externalizing depression as a phenotypical depression syndrome with mixed internalizing and externalizing symptoms are in the early stages, and they

lack the benefit of an overt theory or agenda. While the inductively-derived masculine depression framework (Addis, 2008) has provided a useful starting point, it fails to address, for example, the nature of the relationship between conventional and externalizing symptoms, or make predictions that can be tested. Thus the development of a more encompassing theory of men's depression may be the most fundamental step in any future research agenda. Such development depends of course on continued research. With that in mind, the following categories and research problems are offered for consideration.

Researchers are just beginning to examine which symptoms might provide a valid, reliable index and for whom. Multiple studies have shown correlations among rigid adherence to traditional masculine norms, higher conventional depression (Magovcevic & Addis, 2005; Shepard, 2002), and higher externalizing symptoms (Magovcevic & Addis, 2008; Wide et al., 2011). Despite recent latent profile analyses, many questions remain regarding symptom subgroups and their generalizability (Rice et al., 2013; Rice, Oliffe, et al., 2018). Additionally, a range of other questions regarding externalizing depression remain unanswered, including its incidence and characteristics among diverse populations such as women, men of color, and sexual minorities.

In terms of clinical practice, the most current externalizing depression instrument, the MDRS-22, has yet to be examined for measurement invariance across racial, ethnic, sexual or gender attributes, leaving open the question of its wider applicability in both research and clinical contexts (Chen, 2008; Schmitt & Ali, 2015). Additionally, its use has thus far been limited to research, and no study has examined how clinical use might affect the detection, diagnosis, and treatment of men's depression and, importantly, suicidality.

Unsurprisingly given that understanding of externalizing depression is still developing, no treatment research has examined treatment of externalizing depression. Indeed, research examining the effectiveness of treatments for problems related to men's gender roles remains "extremely limited" (Good et al., 2005, p. 706). However the potential for research and clinical practice regarding men's externalizing depression to contribute to the understanding and improvement of men's mental health is substantial. If the implications of research by Martin and colleagues (2013) regarding the rate of under-diagnosis of men's depression are indicative, scholars and clinicians could substantially increase the number of men who have access to depression diagnoses and interventions while also improving diagnostic accuracy and treatment effectiveness. The positive impact of such a change on men themselves, as well as the families, partners, children and communities to which they are connected, is considerable. When added to the potential for reducing the high rate of suicide among men (Rice, Kealy, et al., 2018a; Rice, Oliffe, et al., 2018), the importance of continued work regarding men's externalizing depression becomes clear.

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Chapter 2. Invariance and Latent Symptom Profiles among African American and European American Men

A growing consensus among researchers, theorists, practitioners, government agencies, and professional organizations suggests that men's depression is both under-researched (Addis, 2008; Smith et al., 2016) and under-diagnosed (American Psychological Association (APA), 2005, 2018a, 2018b; Good et al., 2005; Magovcevic & Addis, 2008; Oliffe, Kelly, et al., 2010; Real, 1997; Substance Abuse and Mental Health Services Administration, 2013; Wexler, 2005). Working from a body of theoretical and empirical research on the negative mental health effects of conformity to traditional masculine norms (e.g. Levant & Richmond, 2016; O'Neil, 2008, 2013; Pleck, 1995), this consensus proposes that many men experience, manifest, and cope with depression in large part through an alternate depression syndrome that incorporates externalizing symptoms such as substance use, impulsivity, anger/irritation, and risk-taking (Cochran & Rabinowitz, 2000; Genuchi & Mitsunaga, 2015; Kilmartin, 2005; Rochlen et al., 2010). Problematically, these symptoms are not captured by the largely internalizing criteria (low mood, anhedonia, loss of appetite, disturbed sleep, fatigue, loss of energy, feelings of guilt or worthlessness, suicidality, and cognitive difficulties) indexed in current DSM criteria (American Psychiatric Association (APsA), 2013).

Self-report instruments intended to measure men's externalizing depression symptoms (e.g. Magocevic & Addis, 2008; Rice et al., 2015)have, until recently, showed psychometric shortcomings. In contrast, the Male Depression Risk Scale (MDRS-22; Rice et al., 2013) exhibits sound psychometric properties, and has been employed in empirical studies to investigate the characteristics, correlates, and latent profiles of men's externalizing depression (e.g. Kealy et al., 2017; Proudfoot et al., 2015; Rice et al., 2014; Rice, Kealy, et al., 2018b; Rice et al., 2017; Rice,

Oliffe, et al., 2018). Its use has been limited to largely homogenous Canadian and Australian samples, and little or no research has examined patterns of externalizing depression among more diverse, e.g. US, populations. The current study expands research on men's externalizing depression to Black/African American men (AA) and White/European American men (EA) by assessing the measurement invariance of the MDRS-22 and examining latent depression symptom profiles across these two groups.

Externalizing Depression

Research on men's depression posits that the characteristic internalizing symptoms of prototypical depression contravene traditional masculine norms of toughness, independence, unemotionality, and avoidance of female-typed behaviors (Levant & Richmond, 2016; Tang et al., 2014). As a result, many men who adhere to such norms experience, express, and cope with negative affect through a mixed set of internalizing and externalizing symptoms that conform more closely to masculine-typed behaviors, e.g. substance use, anger/irritation, risk-taking, impulsivity, social withdrawal, and over-focus on work or other pursuits (Addis, 2008; Rice et al., 2013). This pattern of mixed internalizing and externalizing symptoms has been referred to as masked (Rabinowitz & Cochran, 2008), male (Real, 1997), or masculine depression (Lynch & Kilmartin, 1999). Research suggests that, rather than simply a subtype of Major Depressive Disorder (MDD), externalizing depression is a phenotypically different form of depression that encompasses a broader range of internalizing and externalizing symptoms than prototypical depression (Genuchi, 2015; Martin et al., 2013; Rice, Kealy, et al., 2018b), Despite its being referred to as externalizing depression, it is important to note that the syndrome as posited is a mixed set of internalizing and externalizing symptoms, and includes non-DSM internalizing

symptoms such as somatic symptoms (headaches, muscle aches, gastro-intestinal upset) and social withdrawal (Addis, 2008; Rice et al., 2014). Avoidance of family and social interaction has been consistently cited as characteristic of men's externalizing depression (Warren, 1983; Addis, 2008; Rice et al., 2017). Such isolating behavior is theorized to reflect multiple masculine norms, including self-reliance, independence, and restrictive emotionality (Krugman, 1995; Osherson & Krugman, 1990), and to be connected to shame-avoidance (Oliffe et al., 2019; Shepard & Rabinowitz, 2013) and stress coping (Repetti, 1992).

Research from psychiatric epidemiology provides support for the externalizing depression construct. Eaton and colleagues (2012) used data from a very large (N = 43,093) epidemiological study of psychopathology (Dawson et al., 2010) to show that the underlying internalizing/externalizing structure of mental diagnoses was gender invariant. In doing so, they demonstrated that gender differences in diagnosis rates, e.g. the oft-cited 2:1 female/male ratio of depression diagnoses (Castle & Abel, 2016), occur at the latent factor level and thus reflect real differences in the propensities of men and women for externalizing and internalizing disorders respectively. In another study, data from a representative survey of mental disorders among US adults (n = 5,692; Pennell et al., 2004) was re-analyzed to show that recoding to incorporate even a limited set of externalizing symptoms into the depression criteria eliminated the gender discrepancy in diagnosis (Martin et al., 2013).

Development of self-report scales measuring men's externalizing depression can be traced back to the Gotland study, a Swedish effort to reduce high rural suicide rates (Rutz et al., 1989) that resulted in the Gotland Male Depression Scale (GMDS; Zierau et al., 2002), the first instrument designed to assess men's externalizing depression symptoms. The 13-item scale addressed behavioral changes over the past month as observed by the individual or by others,

with responses on a four-point Likert scale (not at all, to some extent, very true, and extremely so). Initial GMDS research was promising (e.g. Winkler et al., 2005) despite inconsistencies in item parallelism and a problematic tripartite item that conflated three questions in one—"overconsumption of alcohol and pills in order to achieve a calming and relaxing effect. Being hyperactive or blowing off steam by working hard and restlessly, jogging or other exercises, under- or overeating". Repeated attempts to validate the original two-factor latent structure using exploratory factor analysis (EFA) were, however, unsuccessful (Innamorati et al., 2011; Möller-Leimkühler & Yücel, 2010; Möller Leimkühler et al., 2007), and the scale was shown to be psychometrically problematic. Rice and colleagues (2015) tested a 15-item version that disaggregated the tripartite item, but their confirmatory factor analysis (CFA) comparing six latent factor models found that all were poor fits for the data. Scale respecification using the best-fitting model produced marginal improvements, but the resulting three-factor model was not theoretically interpretable.

The GMDS was followed by further scale development efforts, including the Diamond Male Depression Scale (Diamond, 2004, 2008), the Male Symptoms Scale (Martin et al., 2013), and the Masculine Depression Scale (MDS; Magovcevic & Addis, 2008). The latter is significant in being the first instrument constructed using an elaborated and recognized scale development methodology (DeVellis, 1991) and the only such scale to attempt to measure men's externalizing and internalizing depression symptoms. Like the GMDS however, the MDS and other scales suffered from psychometric or other issues, making them of limited usefulness (Rice, 2011). The MDS, for example, was based on an initial set of eleven theorized male depression symptom categories but constructed using a very small developmental sample (n = 102). Probably as a result, the 44-item MDS comprised only two quite heterogenous sub-domains, internalizing (33

items) and externalizing (11 items), rather than a larger number of narrower, more homogenous factors. Items with closely related content (e.g. changes in libido, social withdrawal) were included in both subscales, while the internalizing subscale included a mix of conventional depression criteria (guilt/self-deprecation, worry, anhedonia, cognitive difficulties), conventional non-criteria symptoms (e.g. hopelessness, feeling trapped, loss of libido), and previously theorized externalizing depression symptoms (social withdrawal, over-focus on work). This combination of heterogeneity and inconsistency made it difficult to determine to what extent the internalizing subscale measured internalizing symptoms associated with externalizing depression as opposed to prototypical depression symptoms, and to what extent the externalizing subscale measured general externalizing dysfunction as opposed to externalizing depression symptoms (Ajayi, 2011; Rice, 2011).

To address the limitations of previous externalizing depression scales, Rice and colleagues (2013) used current best practice scale construction techniques (DeVellis, 2003; Floyd & Widaman, 1995; Worthington & Whittaker, 2006) to develop the MDRS-22, the first brief, psychometrically sound such measure. Research using the MDRS-22 has proceeded rapidly, with eleven empirical studies published between 2013-2020 providing insight into, inter alia, men's narcissism, depression symptoms over time, suicidality, and latent symptom profiles (Kealy et al., 2017; Player et al., 2015; Proudfoot et al., 2015; Rice et al., 2014; Rice, Kealy, et al., 2018a; Rice, Oliffe, et al., 2018). Samples for the studies were, however, drawn from relatively homogenous Australian and Canadian populations, and no MDRS-22 research has addressed men's externalizing depression among more diverse populations.

Men, Depression, and Race/Ethnicity

The APA report on men's health disparities notes that "depression produces a burden for racial/ethnic…minority boys and men that is often not well recognized" (2018b, p. 37). Although greater understanding of patterns of men's depression at the intersections of gender, race, and ethnicity would improve treatment and prevention for such vulnerable groups, research regarding depression among men of color is limited (Hammond, 2012). Ward and Mengesha (2013), for example, found only 19 empirical studies addressing depression among African American men over a 25-year period (1985-2010). While additional research has been published in the intervening years, (e.g. Buttram, 2015; Hammond, 2012; Hammond et al., 2016), large gaps in the literature remain.

Empirical evidence suggests that African American men perceive, manifest, and manage the negative affect that is at the core of depression in ways that both resemble and differ from those of European American men. For example, African American men are diagnosed with depression roughly half as often as their female counterparts, mirroring the discrepancy found in the larger population (Riolo et al., 2005). However, lifetime prevalence rates are lower for African American men than for European American men (Kessler et al., 2003; Lincoln et al., 2011), but depression persistence (Williams et al., 2007) and chronic dysphoria rates (Riolo et al., 2005) are higher, suggesting that the course of depression may be different and the temporal effects more severe. Additionally, researchers have connected African American men's depression to a specific set of risk factors, including economic status, maladaptive coping, relational discord, and racial discrimination (APA, 2018b).

While research on traditional masculine norms has tended to focus on European American populations (Good et al., 1994; Jones et al., 2018), such norms are also influential

among African American men (Abreu et al., 2000; Jones et al., 2018; Norwalk et al., 2011; Wade, 2009). More specifically, researchers have demonstrated that African American men's conformity to mainstream masculine norms moderates and mediates the discrimination-depression relationship (Hammond, 2012; Matthews et al., 2013). Additionally, because "depression typically shows up in men…as irritability, anger, and discouragement…these depressive symptoms can be misinterpreted as displaced anger, especially when they are displayed by vulnerable boys and men", and are likely to provoke greater social sanctions, including, for example, higher rates of school suspension, and expulsion (APA, 2018b, p. 33).

Recent empirical research on depression symptom subgroups suggests that latent profile/class analysis could help clarify the similarities and differences between African American and European American men's depressive symptoms patterns. In one study, adult male and female psychiatric inpatients who were hospitalized at a large Trauma I hospital (American Trauma Society, 2019) in the Southeastern US due to a recent suicide attempt (N = 97; Ginley & Bagge, 2017) were assessed using a structured diagnostic interview, and a latent class analysis was conducted. Three depression profiles were isolated from the sample as a whole and categorized as major depressive disorder, high externalizing disorders, and high internalizing/high externalizing disorders. Although the sample included 63% Caucasian and 32% African American participants, demographic covariates reportedly did not differ significantly by class. In a separate study, Rice et al. (2018) used a latent profile analysis to examine a sample of Canadian men recruited online (N = 1000) and found three symptom profiles, which they characterized as asymptomatic, elevated internalizing with alcohol involvement, and elevated externalizing. The latter profile was strongly associated with recent (≤ 4 weeks) suicidality.

The Current Study

The common but often unstated assumptions that instruments developed and normed on homogenous, dominant populations accurately measure the responses of men belonging to marginalized groups, that the underlying conceptual structure is the same for men in both groups, and that scores can be compared across groups, have increasingly been shown to be problematic (Schmitt & Ali, 2015), making the routine testing of measurement invariance (MI) a vital research practice. Chen (2008) provides concrete examples of the effects of unrecognized measurement bias at each level. Additionally, even assuming MI is demonstrated, the similarity of symptom subgroups across different demographic samples cannot be assumed. The current study was designed to address such issues, and to extend research on men's externalizing depression to diverse US populations, establishing an initial basis for such research with US African American and European American men. More specifically, it was hypothesized that the MDRS-22 would exhibit at least metric invariance and that MDRS-22 subgroups would exhibit profile similarity. Additionally, it was posited that MDRS-22 subgroups would not exhibit similarity with regard to predictor (MRNI-SF) or outcome measures (WHODAS-SF, PHQ-9). The study's analytical strategy was twofold: first, to conduct a confirmatory factor analysis of the MDRS-22 to determine measurement invariance across the two groups, and second, to conduct a latent profile analysis to examine the similarities and differences in externalizing depression symptom subgroups among African American and European American men. As part of the latent profile analysis, identified subgroups were examined and compared with regard to their conformity to traditional masculine norms, level of internalizing depression, and degree of functioning or functional impairment.

Methods

Participants

Participants (N = 643) were self-identified adult Black/African American and White/European-American men living in the US. They were recruited via Amazon Mechanical Turk (MTurk) in two approximately equal groups to form an appropriately sized on-line non-clinical community sample. As the study deals with African American and European American men, individuals were excluded if they reported that they resided elsewhere, self-identified as other than men, or self-identified as belonging to other racial/ethnic groups. See Screening and Demographics Survey below for details.

Measures

Masculine Depression Risk Scale (MDRS-22)

The MDRS-22 (Rice et al., 2013) is a screening instrument designed to assess selected sub-domains of externalizing symptoms with the intent of better identifying men who are at risk for depression. It was initially developed and validated using Australian and Canadian online non-clinical community samples analogous to those planned for the current study. The MDRS-22 uses an eight-point Likert scale anchored by 0 (not at all) and 7 (almost always), and its 22 items refer to prevalence of symptoms in the last month. Both the original scale development (Rice et al., 2013) and a CFA replication (Rice et al., 2017) found a good fit for the same six-factor model. The MDRS-22 yields seven scores, a total score and six subscale scores. Ranges of published internal consistency and test-retest statistics for male participants, are as follows: Emotion Suppression (ES) α = .80-.87, r = .69; Drug Use (DU) α = .87-.96, r = .80;, Alcohol Use (AU) α = .90-.94, r = .72); Anger and Aggression (AG) α = .91-.94, r = .80; Somatic Symptoms (SS) α = .73-.87, r = .73; Risk-Taking (RT) α = .71-.83, r = .64; and total score α = .90-.92, r =

.78. The MDRS-22 has demonstrated good psychometric properties, with split-half reliability reported as .88 (Rice et al., 2017), and it has shown good construct validity among both male and female participants (Rice et al., 2013; Rice et al., 2017), correlating with the Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001) scores (r = .63-.70). Additionally, using preliminary cutoff scores of 50 and 87 to define high and extreme ranges, it identified 85% of men with recent suicide attempts as against 54% for the PHQ-9 (Rice et al., 2017). MDRS-22 total and subscale scores also correlated positively with men's recent suicidal ideation and uniquely identified between 27.3% and 31.4% of young males at risk for suicide (Rice, Kealy, et al., 2018a). Additionally, in a study of men with prostate cancer, MDRS-22 subscales accounted for 45.1% of the variance in recent suicidality and identified 85.7% of such cases as against 71.4% by the PHQ-9 (Rice, Oliffe, Kelly, et al., 2018).

Patient Health Questionnaire (PHQ-9/PHQ-8)

To help differentiate conventional depression from externalizing depression, Rice and colleagues (2015) suggest that studies using externalizing depression scales should also employ a reliable, validated DSM-5 depression measure such as the PHQ-9 (Kroenke et al., 2001). The PHQ-9 is a well validated depression screening tool in common use in research settings (e.g. Salk et al., 2017). Its items correspond to the DSM-5 diagnostic criteria for MDD, with higher scores indicating greater severity. Unlike the dichotomous DSM criteria, the PHQ-9 uses a four-point scale ranging from 0 (not at all) to 3 (almost every day), with the outcome in the form of a total score with established cutoffs. Reported internal consistency scores for the PHQ-9 are in the range of α = .81-.92 (Elhai et al., 2015; Rice et al., 2014), with test-retest reliability scores in the κ = .84–.95 range at 48 hours (Kroenke et al., 2001; Pinto-Meza et al., 2005) and from .81–.96 at 7 days (Löwe et al., 2004). The PHQ-9 showed configural, metric, and scalar measurement

invariance across race in a sample of 857 college students identified as African American, Asian American, European American, and Latino/a American (Keum et al., 2018). The PHQ-8 (Kroenke et al., 2009) is a reduced form of the PHQ-9 with the ninth item (suicidal ideation) dropped.

Masculine Role Norm Inventory-Short Form (MRNI-SF)

The MRNI-SF (Levant et al., 2013) is a shortened version of one of the most commonly used measures of traditional masculinity ideology (TMI), the MRNI (Levant et al., 1992). The MRNI-SF is a 21-item instrument with seven subscales (avoidance of femininity (AF), negativity toward sexual minorities (NS), self-reliance through mechanical skills (SR), toughness (TO), dominance (DO), importance of sex (IS), and restrictive emotionality (RE)), and a total TMI score. Responses are structured as a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree) with no reverse-scored items. Higher scores indicate greater endorsement of TMI. Subscale αs for men have ranged from .79 to .90, and TMI αs from .92 to 96 (Levant et al., 2013; Levant et al., 2010). Good construct validity and acceptable test-retest reliability were demonstrated for the previous (i.e. longer) versions of the scale (Levant et al., 2010). A CFA of the MRNI-SF found a bifactor model that exhibited partial metric invariance across groups of European and African American men as well as for other groups (McDermott et al., 2017).

World Health Organization Disability Assessment Scale 2.0 Short Form (WHODAS-SF)

The original WHODAS 2.0 (Üstün et al., 2010) is a 36-item self- report general measure of health, functioning, and degree of disability across six activity domains (cognition, mobility, self-care, interacting, life activities, and participation). It was developed and field tested by WHO in 16 languages across 14 countries to offer a standardized worldwide measure of health and disability. Using a five-point Likert scale (0-4), the WHODAS asks respondents to indicate

the degree of difficulty they experienced over the last 30 days doing a given activity (none, mild, moderate, severe, extreme), with higher scores indicating decreased functioning. The WHODAS 2.0 showed good convergent validity, and test-retest reliability across seven days was .93-.96 for domain scores and .98 overall (Üstün et al., 2010). Cronbach's αs for the English version were in the .92-.95 range (Federici et al., 2017). Factor analysis supported a two-level hierarchical structure with six domain factors loading onto single general disability factor (Garin et al., 2010). The twelve-item short form used here was developed "for brief assessments of overall functioning in surveys or health-outcome studies", and accounts for 81% of the variance of the full instrument (Üstün et al., 2010, p. 16). The 12-item Spanish version, developed using current standards for translating and adapting psychological instruments (Gudmundsson, 2009; Hambleton et al., 2004) shows good discriminant validity in identifying cases of conventional depression and differentiating degrees of depression severity (Luciano, Ayuso-Mateos, Fernández, Aguado, et al., 2010; Luciano, Ayuso-Mateos, Fernández, Serrano-Blanco, et al., 2010), and an item response study found that all items discriminated different levels of disability effectively with no differential item functioning by gender (Luciano, Ayuso-Mateos, Aguado, et al., 2010). Confirmatory factor analyses suggest that a single-factor model performed equivalently to the 36-item WHODAS 2.0 (Abedzadeh–kalahroudi et al., 2016; Silveira et al., 2018).

Screening and Demographic Survey and Validation Checks

Because MTurk does not filter potential participants by race/ethnicity, an initial brief paid demographic and screening questionnaire was published with no indication of the participant characteristics being sought for the main study, i.e. adult US African American and European American men. Additionally, given research indicating men's self-stigma regarding depression

(Cook & Wang, 2010; Oliffe et al., 2016; Wang et al., 2007) the topic was described only as 'psychology'. Demographic items included age, sex/gender, relationship status, sexual orientation, race/ethnicity, family income, educational level, and veteran status. Individuals who responded with desired demographics were immediately invited to participate in the main study.

Both the screening survey and the main study incorporated multiple validation checks. An instructional manipulation check (IMC) was included in the screening survey to eliminate inattentive responders. An IMC is an item similar to other items in length and format but requiring participants to ignore standard response format to confirm that they read the item content, e.g. "Answer this question by choosing "D. All of the above." (Oppenheimer, Mayvis, & Davidenko, 2009). Additionally, a squared discrepancy procedure (Litman, Robinson, & Rosenzweig, 2015) was applied to the main survey to eliminate pattern responders. Moreover, several screening survey demographic items were repeated at the end of the main survey, and their agreement with prior responses was examined. A total of thirty-four participants were eliminated from the sample after passing the screening survey.

Results

Preliminary Analyses

Data were analyzed in SPSS (Version 25), and in Mplus (Version 8.1) using the maximum likelihood estimator with robust standard errors (MLR), which is robust to non-normality. Before analysis, data were examined for outliers by inspection of scatter and Q-Q plots, and four participants were casewise deleted. Less than 0.001% of datapoints were missing. All missing data were handled within Mplus via Full Information Maximum Likelihood (FIML).

Participants were 324 African American men (AA) and 319 European American men (EA). A majority of participants from both groups, 67.9% of the total, were employed full time, had either a two- or four-year (51.9%) degree, and reported a family income of less than $59,000 last year (55.8%). Of the combined sample, 11.7% had served in the armed forces and 10.6% reported a sexual orientation other than straight/heterosexual. The current sample demographics align with researchers who suggest that MTurk workers tend to be younger, more educated, and more urban, and that they are more likely to be employed but have less income than the US population as a whole (e.g. Huff & Tingley, 2015; Levay, Freese, & Druckman, 2016; Walter, Christakis, & Wright, 2018). Additionally, researchers report that MTurk participants are substantially more likely to report identifying as LGBTQ in large part due to their younger age (Chandler & Shapiro, 2016).

The two groups in the current sample differed substantially on several demographic characteristics. African Americans were significantly younger than their counterparts, AA M = 33.9, SD = 9.2; EA M = 39.8, SD = 11.7; t (641) = 7.05, p = <0.001), and significantly less likely to report making more than $79K per year (AA = 21.4%, EA = 33.5%), being married or partnered (AA = 45.1%, EA = 61.1%) or being bisexual (AA = 3.7%, EA = 8.2%). Table 1 lists participant demographic details by group and total.

Measurement Invariance

The framework used here to carry out the first major analytical strategy, measurement invariance testing, has been described by multiple researchers (Putnick & Bornstein, 2016; Sass, 2011; Vandenberg & Morelli, 2016). It takes the form of a series of increasingly more stringent tests in which failure to reject the null hypothesis of scale invariance implies that the groups are the same in specific ways. Configural invariance, for example, the least stringent form of

Table 1

Sample Demographics

Category	Sub-category	African American	European American	Combined
Age	M	33.9	39.8	36.8
	SD	9.2	11.7	10.9
Sexual Orientation	Bisexual	3.7%	8.2%	5.9%
	Lesbian/Gay	4.0%	3.2%	3.6%
	Straight/Hetero	90.7%	88.0%	89.4%
	Other	0.9%	0.3%	0.6%
	Prefer not to answer	0.6%	0.3%	0.5%
Family Income	<$20K	11.2%	10.1%	10.7%
	$20-39K	23.3%	20.9%	22.1%
	$40-59K	28.0%	18.0%	23.0%
	$60-79K	16.1%	17.4%	16.8%
	>$79K	21.4%	33.5%	27.4%
Relationship Status	Single	52.5%	32.3%	42.5%
	Married	28.0%	46.2%	37.0%
	Separated	0.9%	0.9%	0.9%
	Widowed	0.0%	1.3%	0.6%
	Divorced	1.6%	4.4%	3.0%
	Partnered	17.1%	14.9%	16.0%
Veterans Status	Never served	87.5%	89.2%	88.3%
	Served active duty	11.3%	9.2%	10.3%
	Served reserve only	1.3%	1.6%	1.4%
Employment Status	Employed full time	66.5%	69.3%	67.9%
	Employed part time	11.2%	6.3%	8.8%

	Unemployed and looking	5.9%	5.1%	5.5%
	Unemployed, not looking	1.2%	0.3%	0.8%
	Student	4.3%	2.2%	3.3%
	Retired	0.3%	4.7%	2.5%
	Homemaker	0.6%	0.9%	0.8%
	Self-employed	9.0%	9.8%	9.4%
	Unable to work	0.9%	1.3%	1.1%
Education	Less than high school	0.6%	0.6%	0.6%
	High school / GED	8.0%	12.3%	10.2%
	Some college	24.8%	19.2%	22.0%
	Two-year college degree	10.2%	5.7%	8.0%
	Four-year college degree	43.7%	44.2%	43.9%
	Advanced degree	11.1%	17.0%	14.1%
	Other education (e.g. trade school)	1.5%	0.9%	1.3%

invariance, indicates that the same pattern of items and factors is supported in both groups. Metric invariance, the next most stringent level, indicates that equality of factor loadings (i.e. regression slopes), which indicate the strength associations between items and factor, is supported. Scalar invariance, the most stringent level of invariance considered in this study, indicates equality of indicator intercepts or (for ordinal indicators) thresholds. Each level of invariance must be supported for subsequent tests to be meaningful (Vandenberg & Morelli, 2016).

Measurement invariance testing begins with the establishment of a baseline model. An initial, often theoretically based model is evaluated by CFA separately against data from each sample for goodness of fit and to detect any anomalies. If necessary, the model may be adjusted

or modified to achieve a sufficiently good-fitting point of departure for subsequent tests of invariance. The testing process then follows the same pattern at each level. Constraints are imposed on the most recent baseline model, and the constrained and unconstrained models are compared for goodness of fit. If the constrained model continues to fit well with no substantial decline in fit indicators, then invariance at that level is supported, and the constrained model is used as the baseline for the next level of testing. Because invariance is a prerequisite for the extended LPA process (Morin et al., 2016) and for meaningful comparison of scores across groups, all four scales in the current study were evaluated for invariance.

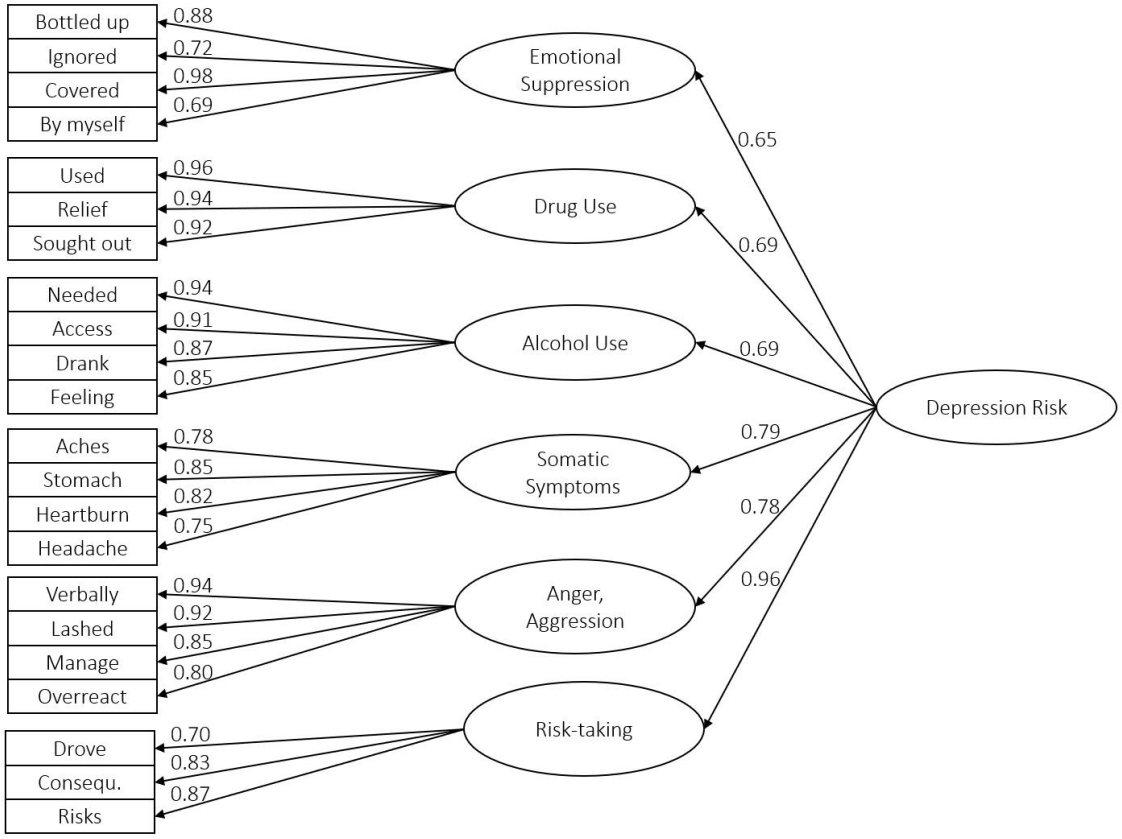
Goodness of fit indices

To evaluate model fit, researchers have developed a number of goodness of fit indices (GFIs). Support for invariance in the current study was suggested by comparative fit index (CFI) values of approximately .95 or more, root mean square error of approximation (RMSEA) values approaching or less than .06, and standardized root mean square residual (SRMR) values equal to or less th(Asparouhov & Muthén, 2018)an .08 (Brown, 2015; Hu & Bentler, 1999). McDonald's non-centrality index (McDonald & Marsh, 1990), with values in the same range as the CFI, was also consulted for its sensitivity to non-invariance (Kang et al., 2016), although it was weighed less heavily due to its sensitivity to the magnitude of factor loadings and model complexity (Kang et al., 2016; Meade et al., 2008). In comparing baseline with constrained models, invariance was supported by $\Delta CFI < -.01$ (Chen, 2007) and preferably $\leq -.002$ (Cheung & Rensvold, 2002), $\Delta SRMR < .03$ for metric models and $< -.01$ for scalar models (Chen, 2007), and $\Delta MNCI \geq -.007$ or lower where suggested by Meade et al. (2008) based on number of items and factors. Scaling-corrected Yuan-Bentler χ^2 tests were also consulted, but because the χ^2 test is sensitive to sample size and less sensitive to noninvariance than the ΔCFI (Xu & Tracey,

2017) other indices are relied on more heavily in the evaluation of model fit. Additionally, Asparouhov and Muthén (2018) suggest that, in the absence of large standardized residuals, a model fit that generates both a significant $\Delta \chi^2$ test and good SRMR values can be characterized as approximately well fitting.

Figure 1

Original MDRS-22 Factor Structure (Standardized Factor Loadings)



MDRS-22

CFAs were conducted to test the fit of the original six-factor MDRS-22 model (Figure 1; Rice et al., 2017) with the two samples. Results showed nonpositive definite covariance matrix errors for both groups, indicating a potential mis-specified model. Examination of latent factors showed the strongest correlations in each group were between the Anger and Aggression (AG)

and the Risk-taking (RT) factors, EA *r* = .92, AA *r* = .85. Correlations between AG and RT subscales in the *r*= .62-.68 range have been noted in Australian and Canadian samples (Kealy et al., 2017; Rice, 2011; Rice et al., 2013; Rice et al., 2017), where they were also the strongest MDRS-22 factor correlations reported. This consistent pattern of relatively strong correlations may suggest a conceptual overlap among aggression and risk-taking behavior, e.g. aggressive driving, which forms the content of item four, an indicator of risk-taking in the original model. Based on these considerations, the original MDRS-22 model (Figure 1), with four indicators loading on the AG factor and three on the RT factor, was modified to allow all seven indicators to load on a combined Anger, Aggression and Risk-taking (AR) factor. This solution (Figure 2) resolved the nonpositive definite error without discarding information and resulted in an acceptable baseline model fit for both groups, AA CFI = .941, RMSEA = .049 (.041, .058), SRMR = .060; EA CFI = .943, RMSEA = .047 (.038, .055), SRMR = .054. Factor loadings for AA men, EA men and the total sample are provided in Table 2.

Table 2

MDRS-22 Measurement Model - Factor Loadings for AA, EA and Combined Samples

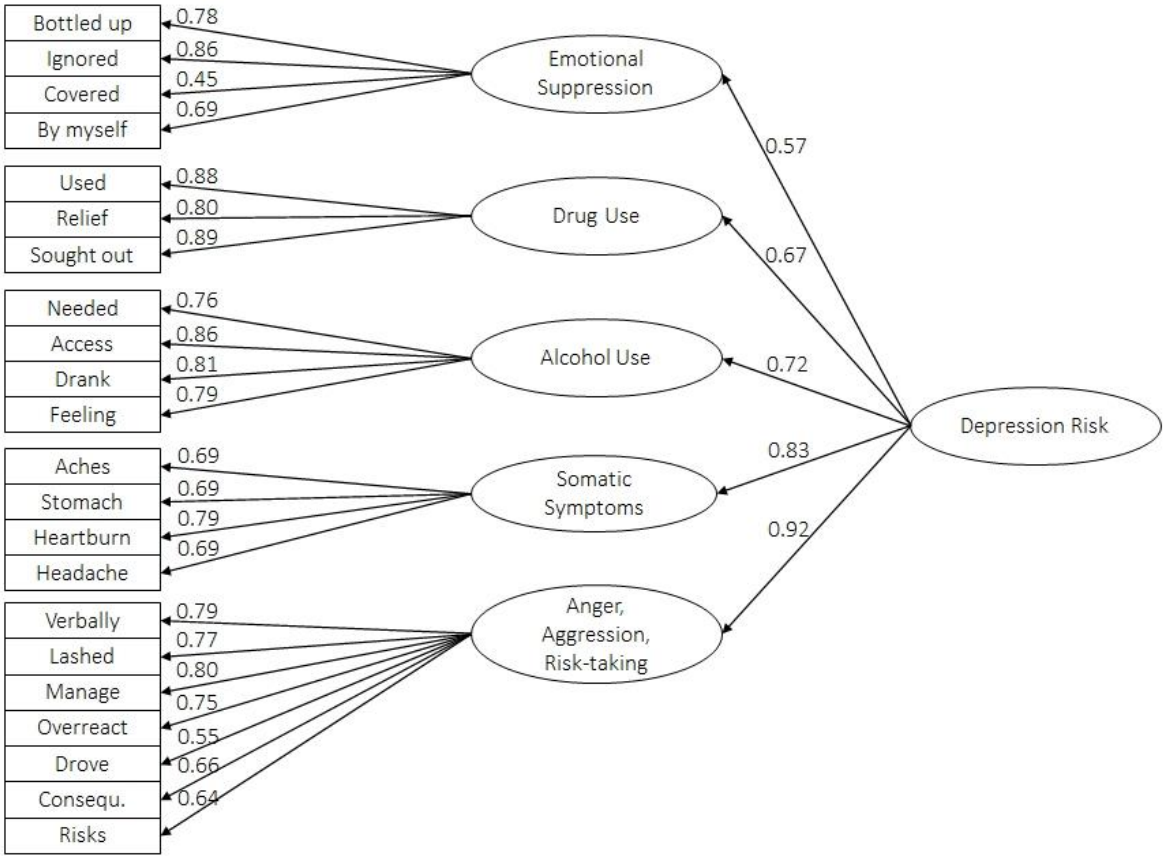
Factor	Factor / Indicator	AA β	EA β	β Total Sample
DEPR	ES	.51	.60	.57
	DU	.69	.53	.67
	AU	.80	.39	.72
	AR	.91	.90	.92
	SS	.82	.75	.83
ES	Bottled Up	.88	.79	.78
	Ignored	.67	.69	.69
	Covered	.87	.81	.86

	By Myself	.42	.44	.45
DU	Sought	.88	.87	.88
	Relief	.81	.93	.80
	Used	.89	.93	.89
AU	Drank	.82	.75	.76
	Needed	.86	.88	.86
	Access	.83	.84	.81
	Feeling	.78	.87	.79
AR	Overreact	.76	.83	.79
	Lashed	.76	.75	.77
	Verbally	.78	.81	.80
	Manage	.74	.79	.75
	Drove	.56	.53	.55
	Conseq.	.69	.64	.66
	Risks	.67	.56	.64
SS	Heartburn	.72	.56	.69
	Headaches	.68	.64	.69
	Stomach	.79	.76	.79
	Aches	.65	.71	.69

Next, the first level of MI testing, configural invariance, was undertaken to examine whether indicators load on the same factors across groups. The baseline model was fitted to the combined data without constraints, and the GFIs were inspected (Table 3). The results pointed to a good model fit, CFI = .950, RMSEA = .046 (.040, .052), SRMR = .053, MNCI = .803, indicating the same pattern of factor loadings across groups and supporting the hypothesis of configural invariance. Additionally, mean factor loadings, DU λ = .86, AU λ = .81, SS λ = .72, AR λ = .71, ES λ = .70, suggested a strong set of indicators for each factor. Examination of

Figure 2

Revised MDRS-22 Factor Structure (Standardized Factor Loadings)



Cronbach's α indicated good internal consistency, MDRS-22 α = .93, DU α = .93, AU α = .91, AR α = .89, SS α = .80, ES α = .73. Default use of Cronbach's α in latent factor analyses has been critiqued for over- or underestimating scale reliability (Raykov, 1997; 2009) and some researchers have advocated the use of SEM-based reliability coefficients such as composite reliability (Cho, 2016). Based on acceptable values > .60 (Diamantopoulos & Winklhofer, 2001), MDRS-22 scale and subscale composite reliability was good, MDRS-22 ρ_c = .86, DU ρ_c = .85, AU ρ_c = .91, AR ρ_c = .88, SS ρ_c = .81, ES ρ_c = .80.

Table 3

Measurement Invariance Results for MDRS-22, PHQ-8, MRNI-SF and WHODAS-SF Scales

Model	χ^2	*df*	$\Delta\chi^2$	Δdf	*p*	CFI	ΔCFI	MNCI	ΔMNCI	RMSEA	[90% CI]	SRMR	ΔSRMR
MDRS-22													
Configural	690.75	408				0.950		0.803		0.046	[0.040, 0.052]	0.053	
Metric	734.911	429	43.27	21	0.003	0.946	-0.004	0.788	-0.014	0.047	[0.041, 0.053]	0.068	0.029
Scalar	769.31	451	33.44	22	0.056	0.944	-0.002	0.781	-0.008	0.047	[0.041, 0.052]	0.072	0.004
PHQ-8													
Configural	76.49	36				0.976		0.969		0.059	[0.041, 0.078]	0.032	
Metric	81.64	42	4.10	6	0.663	0.976	0.000	0.970	0.001	0.054	[0.036, 0.072]	0.038	0.029
Scalar	104.71	48	28.57	6	0.000	0.966	-0.010	0.957	-0.013	0.061	[0.045, 0.076]	0.042	0.004
MRNI-SF													
Configural	521.19	312				0.966		0.850		0.046	[0.039, 0.052]	0.035	
Metric	576.24	344	55.04	32	0.007	0.963	-0.003	0.835	-0.015	0.046	[0.039, 0.052]	0.042	0.029
Scalar	634.64	358	65.14	14	0.000	0.956	-0.007	0.806	-0.028	0.049	[0.043, 0.055]	0.045	0.003
WHODAS-SF													
Configural	236.39	104				0.941		0.902		0.063	[0.052, 0.074]	0.048	
Metric	254.53	115	17.18	11	0.103	0.938	-0.003	0.897	-0.005	0.061	[0.051, 0.072]	0.059	0.029
Scalar	270.68	126	11.99	11	0.364	0.936	-0.002	0.894	-0.004	0.060	[0.050, 0.070]	0.058	-0.001

With configural invariance supported, the next level of MI analysis, metric invariance, was undertaken to examine equality of factor loadings. Factor loadings were constrained to be equal across groups, forming a new, more constrained model. The fit of the new model was then compared with that of the previous, configural model. The results (Table 3) revealed a significant χ^2 test, $\Delta\chi^2 = 43.27$, $\Delta df = 21$, $p = .003$, but also a metric model with acceptable fit indicators, ΔCFI = -.004, ΔSRMR = .029, ΔMNCI = -.014 (Johnson et al., 2008). Examination of standardized residuals revealed none larger than 2.58, corresponding to a statistically significant *z*-score at $p < .01$ (Brown, 2015; Byrne, 2013). These results suggest an acceptably well-fitting model (Asparouhov & Muthén, 2018). Taking these considerations into account, the results of testing indicate equality of factor loadings and support the hypothesis of metric invariance.

The next level of invariance, often referred to as scalar invariance, is intended to test for equality of intercepts or, as in the current case with ordinal indicators, thresholds. Item thresholds were constrained to be equal across groups, forming a new, more restricted model. The fit of the new model was compared with that of the previous metric model by examining the resulting ΔGFIs. The results (Table 3) showed an acceptable degree of decrement in GFIs, $\Delta\chi^2 = 33.44$, $df = 22$, $p = .056$, ΔCFI = -.002, ΔSRMR = -.004, ΔMNCI = -.008. These results support equality of thresholds across the two groups and suggest that the hypothesis of scalar invariance for this model is supported.

PHQ-9/PHQ-8

The process followed to evaluate invariance of the MDRS-22 was also pursued for each of the other scales in the study. In the case of the PHQ-9, results of initial CFAs using a single-factor model (Kroenke et al., 2001) showed inadequate goodness of fit for both groups, AA χ^2 (27, $n = 324$) = 132.19, $p < .001$l; CFI = .894; RMSEA = .110 (.091, .129); SRMR = .056; EA χ^2

(27, n = 319) = 99.95, p < .001; CFI = .919; RMSEA = .092 (.073, .112); SRMR = .053. Multiple researchers have noted similar findings regarding the one-factor model and have instead proposed two-factor models based on somatic and non-somatic subscales (Elhai et al., 2015; Keum et al., 2018; Patel et al., 2019). A model supported by Elhai and colleagues appeared to be the most theoretically interpretable, with a non-somatic subscale composed only of items having a clear cognitive component such as suicidal ideation and negative self-cognitions.

A CFA was conducted to test for acceptable fit and to establish a baseline using the Elhai model. Two adjustments were made, guided by modification indices. The first was to allow the residuals of a pair of indicators—depressed mood and negative self-cognition, both strongly aligned with cognitive aspects of depression (Chahar Mahali et al., 2020)—to covary. The second adjustment, a relatively routine modification in research contexts, was to drop item 9 (suicidality). The latter adjustment has been supported in part because the item takes the form of a double-barreled question assessing both suicidal thoughts and self-harm, potentially yielding increased false-positive depression rates (Na et al., 2018). Additionally, the item may produce a high rate of false positives for suicidality and suicide risk, bringing into question its inclusion in a commonly used depression screener (Dube et al., 2010; Razykov et al., 2012b). This is particularly the case in light of a large multiple-cohort study, N = 143,705, which found agreement between the PHQ-8 and PHQ-9 to be "almost perfect", κ = .96 - .97 (Wells et al., 2013, p. 81), as well as other studies which reported the sensitivity and specificity of the two measures as closely comparable (Kroenke & Spitzer, 2002; Razykov et al., 2012b).

With these modifications, the Elhai model provided an acceptable baseline fit for both groups, AA χ^2 (19, n = 324) = 52.72, p < 0.001; CFI = .965; RMSEA = .074 (.051, .98); SRMR = .036; EA χ^2 (19, N = 319) = 49.426, p < .001; CFI = .963; RMSEA = .071 (.047, .095); SRMR

= .040. As with the MDRS-22, CFAs were conducted to test progressively more constrained models for configural, metric and scalar invariance. The results of these analyses, presented in Table 3, supported scalar invariance for this model of the PHQ-8.

MRNI-SF

The same process followed in preceding analyses was used to evaluate invariance of the MRNI-SF. Because researchers have suggested that the latent structure of the MRNI-SF is best examined using either a one-factor or a bifactor model (Levant et al., 2013; McDermott et al., 2017), both models were examined. While the initial CFA of a one-factor model resulted in unsatisfactory goodness of fit for both groups (AA: χ^2 (189, n = 324) = 1020.536, $p < 0.001$, CFI = 0.75, RMSEA 0.117 (0.110, 0.124), SRMR = 0.084; EA: χ^2 (189, n = 319) = 1157.621, $p <$ 0.001, CFI = 0.67, RMSEA 0.127 (0.120, 0.134), SRMR = 0.096), the CFA of the bifactor model produced non-positive definite covariance matrix errors. Examination of the bifactor model's latent variable covariance matrices found negative values across both groups for the restrictive emotionality (RE) factor. Based on research identifying low model-based reliability for the RE subscale (McDermott et al., 2017), the factor and its indicators were removed, resolving the non-positive definite errors and yielding a good baseline model fit for the bifactor model, AA χ^2 (156, n = 324) = 262.567 $p < .001$; CFI = .97; RMSEA = .046 (.036, .055); SRMR = .033; EA χ^2 (189, n = 319) = 258.698, $p < 0.001$; CFI = .97; RMSEA = .045 (.035, .055); SRMR = .037. CFAs to test for MI at the configural, metric and scalar level produced results (Table 3) that supported scalar invariance without further modifications.

WHODAS-SF

Initial CFA of the WHODAS-SF used a single factor model (Üstün et al., 2010), which produced an acceptable fit for African American men, χ^2 (54, n = 324) = 153.289, $p < 0.0001$;

CFI = 0.911; RMSEA 0.075 (0.061, 0.089); SRMR = 0.050; but a less-than adequate fit for European American men, χ^2 (54, n = 319) = 213.576, p < 0.0001; CFI = 0.860; RMSEA = 0.096 (0.083, 0.110); SRMR = 0.065. Examination of results showed the same subset of high-value modification indices for each group. Allowing two sets of residuals (walking with standing, washing with dressing) to correlate produced a good fitting model for both groups, AA χ^2 (52, n = 324) = 85.387, p < 0.005; CFI = 0.970; RMSEA = 0.045 (0.027, 0.061); SRMR = 0.039; EA $\chi 2$ (52, n = 319) = 149.192, p < 0.0001; CFI = 0.914; RMSEA = 0.077 (0.062, 0.091); SRMR = 0.056. Taking this model as a baseline, CFAs were conducted to test for invariance at ever-more-constrained levels. Results of these analyses, presented in Table 3, showed no substantial decrement in GFIs and a continued good fit across configural, metric and scalar tests, providing support for scalar invariance.

Latent Profile Analysis

In addition to representing single populations, research suggests that the current samples also reflect multiple relatively homogenous subpopulations characterized by discrete patterns of responses to MDRS-22 items (Rice et al., 2016; Rice et al., 2013; Rice, Oliffe, et al., 2018). Latent profile analyses are intended to detect and describe such subpopulations. Morin et al. (2016) extended the latent profile analysis framework to examine the generalizability of such profiles, i.e. the extent to which the same profiles exist across groups such as gender or nationality, which they refer to as similarity. Like the measurement invariance analysis process discussed previously, this extended LPA framework involves testing a series of increasingly more constrained models as follows: a baseline model is established; model constraints are imposed; and the fit of the resulting model is compared with that of the previous, unconstrained model using a set of GFIs to establish a level of similarity. The least constrained level, configural

analysis, examines whether the number of observable profiles is the same across the two groups. Assuming configural similarity is supported, the next level, structural analysis, examines whether factor score means are similar in each group. Unlike measurement invariance testing, however, both configural and structural similarity are required before testing for subsequent levels of similarity. These more stringent levels examine similarity of within-profile interindividual differences, similarity of relative profile size (i.e. membership), similarity of the relationship of profiles with designated predictors (the MRNI-SF in the current study), and similarity of the relationship of profiles with designated outcomes (the PHQ-8 and WHODAS-SF).

With scalar invariance supported for the MDRS-22, the LPA was begun by using the five-factor MDRS-22 model to generate factor scores—numerical values indicating a participant's relative standing on a latent factor—to be used as data for subsequent similarity analyses. Following suggestions by Morin et al. (2016), GFIs used for the LPA were the Bayesian Information Criterion (BIC), Consistent AIC (CAIC), Sample-Adjusted BIC (SABIC), and the Average Weight of Evidence (AWE). Additionally, the Lo-Mendel-Rubin likelihood ratio test (LMR; Lo et al., 2001) and entropy statistic (Lubke & Muthén, 2007) were consulted during the initial profile enumeration phase of the analysis.

Profile Enumeration and Configural Similarity

To determine whether a common optimal number of MDRS-22 latent profiles could be identified, a series of enumeration tests was conducted for each group, starting with a one-profile model and extending through an eight-profile model. Each test used the same approach: with MDRS-22 factor score means freely estimated for each profile, a k-profile model was compared to a k-1 profile model using the Lo-Mendell-Rubin likelihood ratio test (LRT). When significant, LRT identified the *k*-profile model as a significant improvement over the *k*-1 profile model. GFIs

were examined for each model, with smaller values indicating a better fit (Table 4). Examination LRTs for both groups yielded significant results for two profiles, AA LRT = 948.63, $p = 0.002$; EA LRT = 546.96, $p < 0.001$; and three profiles, AA LRT = 234.66, $p = 0.047$; EA, LRT =

Table 4

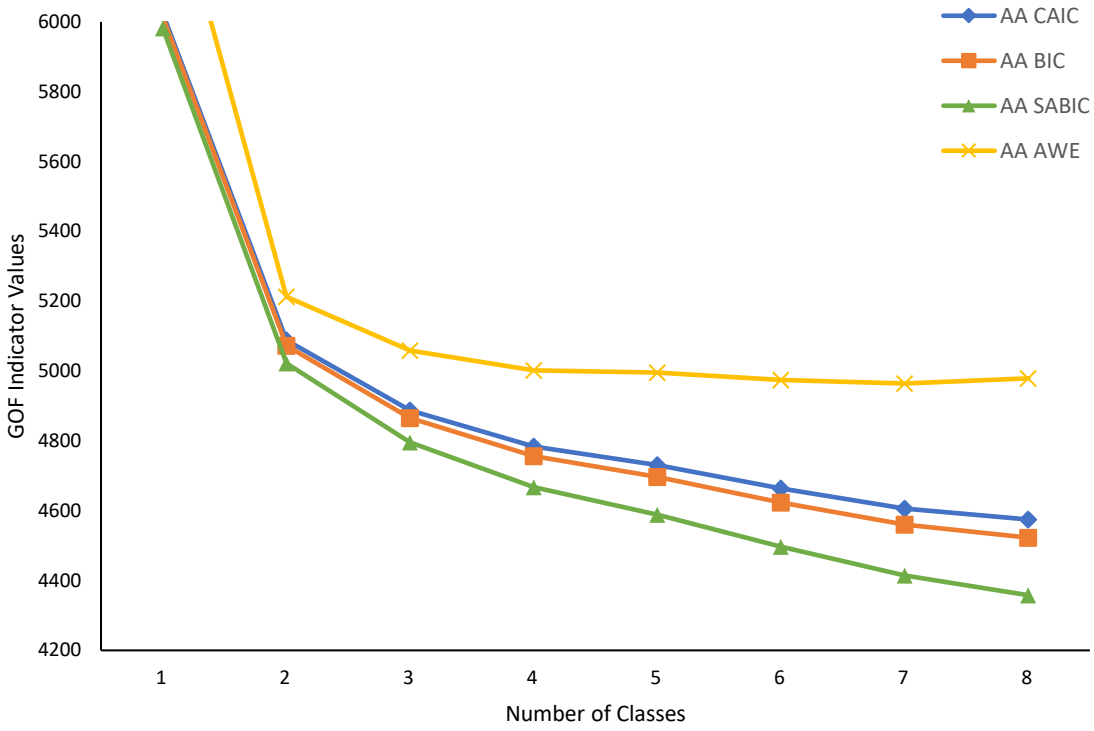
Results of Similarity Analysis

Model	*k*	LL	CAIC	BIC	SABIC	AWE	LRT	LRT *p*	Entropy
African American	1	-2,977.986	6023.78	6,013.780	5982.060	6501.590	*	*	*
	2	-2,489.993	5088.48	5,072.478	5021.727	5212.970	948.634	0.002	0.96
	3	**-2,369.279**	**4887.73**	**4,865.734**	**4795.953**	**5058.911**	**234.664**	**0.047**	**0.91**
	4	-2,297.210	4784.28	4,756.281	4667.468	5002.142	140.098	0.685	0.91
	5	-2,250.082	4730.71	4,696.709	4588.865	4995.255	91.614	0.259	0.88
	6	-2,196.139	4663.51	4,623.508	4496.632	4974.737	104.864	0.147	0.94
	7	-2,147.272	4606.46	4,560.458	4414.551	4964.372	94.995	0.495	0.91
	8	-2,111.170	4574.94	4,522.939	4358.000	4979.537	70.180	0.020	0.92
European American	1	-2,731.549	5530.75	5,520.750	5489.032	5608.402	*	*	*
	2	-2,450.163	5008.57	4,992.569	4941.820	5132.812	546.960	0.000	0.98
	3	**-2,336.865**	**4822.56**	**4,800.564**	**4730.785**	**4993.398**	**220.228**	**0.002**	**0.90**
	4	-2,259.583	4708.59	4,680.591	4591.781	4926.017	150.222	0.361	0.90
	5	-2,183.675	4597.37	4,563.366	4455.525	4861.383	147.551	0.042	0.92
	6	-2,135.944	4542.50	4,502.496	4375.623	4853.103	92.780	0.301	0.95
	7	-2,077.568	4466.34	4,420.335	4274.432	4823.534	113.472	0.170	0.95
	8	-2,044.396	4440.58	4,388.582	4223.648	4844.372	64.480	0.460	0.90
Configural	3	-5151.818	10639.610	10594.61	10451.74	11020.590	*	*	0.941
Structural	3	-5223.951	10671.890	10641.89	10546.64	10925.870	*	*	0.930

** = Not applicable. LL = model log likelihood, BIC = Bayesian Information Criterion, CAIC = Consistent Akaike Information Criteria, SABIC = Sample-Adjusted BIC, AWE = Average Weight of Evidence (AWE), LRT = Lo, Mendell, and Rubin likelihood ratio test.*

Figure 3

Goodness of Fit Indicator Values by Number of Classes: African American Men



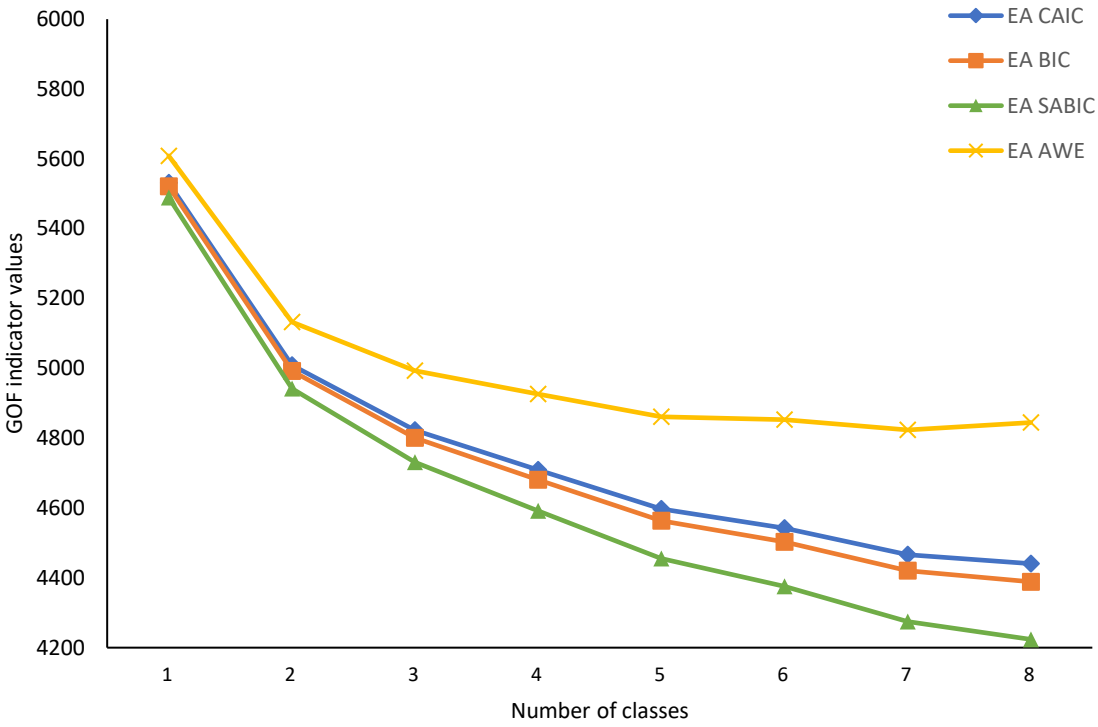
CAIC = Consistent Akaike Information Criteria, BIC = Bayesian Information Criterion, SABIC = Sample-Adjusted BIC, AWE = Average Weight of Evidence (AWE)

220.24, $p = 0.002$. LRTs were not, however, significant for a four-profile model, AA LRT = 140.10, $p = 0.66$; EA LRT = 150.22, $p = 0.36$, constituting evidence for three as an optimal number of profiles in each group. Rates of decrease for CAIC, BIC, SABIC and AWE fit indicators also appeared to plateau at more than three classes (Table 4), as can be seen in "elbow" graphs (Figures 3-4) which plot these values against the number of profiles for each group (Nylund-Gibson & Choi, 2018). Additionally, entropy values indicated that profile separation accuracy remained good for the three-profile model (E = .91). Further support for a three-profile model was provided by Rice, Oliffe, et al. (2018) in their examination of MDRS-22 latent profiles among Canadian men. Based on these considerations, the three-profile solution

was retained for both samples, supporting configural similarity for the model across Black/African American and White/European American men.

Figure 4

Goodness of Fit Indicator Values by Number of Classes: European American Men



CAIC = Consistent Akaike Information Criteria, BIC = Bayesian Information Criterion, SABIC = Sample-Adjusted BIC, AWE = Average Weight of Evidence (AWE).

Structural Similarity

A multigroup, three-class model was then estimated to serve as a baseline model of configural similarity, CAIC = 10639.61, BIC = 10594.61, SABIC = 10451.74. Within-profile means were constrained to be equal across groups to produce a more constrained model, and the GFIs were compared. Morin et al. suggest that similarity is supported when any two of three indicators—the CAIC, BIC and SABIC—decrease in comparison with the previous (i.e. less constrained) model. However, as shown in Table 4, fit indices did not decrease, CAIC=

10671.89, BIC = 10641.89, SABIC = 10546.64, indicating that group means were significantly different and supporting rejection of the null hypothesis of structural similarity. Because both configural and structural similarity are prerequisite for subsequent similarity testing, analysis of profile invariance was concluded.

MDRS-22 Profiles

Although the LPA was concluded for lack of structural similarity, configural similarity was demonstrated with three MDRS-22 profiles detected for each group. Morin et al. suggest in such a case that further analysis should be conducted by group. Because scalar invariance was supported for all four scales, it was possible to examine profile similarities and differences across the two groups using profile membership based on posterior probabilities.

The first and largest profiles (Figures 5 & 6), representing the majority of participants in each group (AA 60.8%, EA 66.8%), were characterized as asymptomatic due to low internalizing and externalizing depression symptom t-scores (PHQ-8: AA *M* = 45.30, *SD* = 7.75; EA *M* = 46.13, *SD* = 7.22; MDRS-22: AA *M* = 45.84, *SD* = 4.42; EA *M* = 44.11, *SD* = 4.68) as well low WHODAS-SF scores. A second, smaller pair (Figures 5 & 7), AA 22.53%, EA 20.06%, were characterized as mixed-symptom profiles due to their elevated internalizing and externalizing depression scores (PHQ-8: AA *M* = 55.31, *SD* = 8.74; EA *M* = 56.95, *SD* = 9.39; MDRS-22: AA *M* = 56.77, *SD* = 3.91; EA *M* = 55.68, *SD* = 3.94) and elevated WHODAS-SF scores. The third and smallest profiles (Figures 5 & 8), AA 16.67%, EA 13.17%, characterized as high-externalizing, were distinguished by moderately elevated internalizing symptoms (PHQ-8: AA *M* = 60.07, *SD* = 9.66; EA *M* = 58.92, *SD* = 9.69), but significantly higher externalizing symptoms, particularly for African American men (MDRS-22: AA *M* = 70.32, *SD* = 6.45; EA *M* = 62.22, *SD* = 7.98). Examination of MDRS-22 subscale symptoms revealed that high

externalizing profile members in both groups exhibited substantially elevated scores on drug use. They differed, however, on alcohol use, risk-taking/anger/aggression and somatic symptoms scores, with African American men scoring substantially higher than European American men on each of these latter subscales. PHQ-8, MDRS-22, WHODAS-SF, and MRNI-SF total scores and MDRS-22 subscale scores are plotted as *t*-scores in Figures 6-8.

The original hypothesis that the MDRS-22 would show at least metric invariance, was supported. The hypothesis that subgroup profiles would show similarity was partially supported in that configural invariance was demonstrated. However, structural similarity, a prerequisite of full similarity, was not supported, precluding testing of predictive and explanatory similarity (Morin et al., 2016).

Discussion

The current study was designed to extend research on men's externalizing depression to diverse US populations, specifically African American and European American men. The study's analytical strategy was twofold: 1) conduct a confirmatory factor analysis of the MDRS-22 to investigate support for measurement invariance across the two groups, and 2) conduct a latent profile analysis to examine the existence, commonality, similarities, and differences in externalizing depression symptom subgroups among African American and European American men. Three other scales were also included in the study: the PHQ-9/8 to assess conventional depression levels among participants; the MRNI-SF to examine levels of commitment to traditional masculine ideology; and the WHODAS-SF to examine participants' degree of functioning or functional impairment. The MI of each of these scales was assessed to enable the

LPA to be conducted and to allow comparison of scale and subscale scores across the two groups.

Measurement Invariance

Results of the MDRS-22 MI analysis supported scalar invariance for a modified five - factor model across the two groups. Subsuming configural and metric invariance, scalar invariance suggests that AA and EA men share a common set of concepts and beliefs with regard to depression, respond to MDRS-22 items comparably and, when possessed of the same level of a latent depression variable, produce essentially the same manifest scores regardless of group membership. Scalar invariance provides a necessary basis for comparing manifest and latent scores across groups and ensures that statistically significant differences in group means are due to participant differences rather than scale properties.

The modification of the MDRS-22 during the MI analysis process also yielded potentially useful information regarding the functioning of the scale among AA and EA participants. Although the risk-taking (RT) factor correlated with anger and aggression (AG) in previous studies with Australian and Canadian samples, r = .62-.68 (e.g. Rice et al., 2018), the degree of correlation among current samples was high enough, r = .85-.92, to suggest modifying the original MDRS-22 model. Combining AG and RT into a single factor (AR) yielded a five-factor model with a good fit for both AA and EA samples at baseline as well as configural, metric and scalar invariance (Table 3). The results of this modification suggest that participants in both groups may share a common conceptual overlap of anger and aggression with risk-taking that is significantly less salient for previous, i.e. Canadian and Australian, samples. Perhaps relatedly, a recent study of a highly rated aggression scale found significant non-invariance across countries and cultures (Gallardo-Pujol et al., 2019).

Results of the remaining MI analyses supported hypotheses of scalar invariance for the WHODAS-SF, and for reduced models of the PHQ-9/8 and the MRNI-SF. The PHQ-9 was reduced to the PHQ-8 by dropping item 9 (thoughts of death/self-harm),which has been recognized as possibly problematic given its potential to promote false positive results for depression and suicidality (Dube et al., 2010; Na et al., 2018; Razykov et al., 2012a). The MRNI-SF was modified by eliminating the Restrictive Emotionality (RE) factor, which had been previously identified as having low model-based reliability (McDermott et al., 2017). While masculinity researchers have provided strong evidence of emotional restriction or avoidance of vulnerable emotions as an essential aspect of traditional masculine ideology (Levant et al., 2006; O'Neil, 2008, 2013; Pleck, 1981, 1995) its current association with masculinity-related constructs may be undergoing attenuation. Discussion of the attenuation of unemotionality has not been widely reflected in the quantitative literature, but sociological and qualitative studies over the last decade (e.g. Baker & Hotek, 2011; Gee, 2014; Ripley, 2018) have noted the progressive emergence of more inclusive masculinities that reflect values such as homosociality, tactility, and emotional openness. Such attenuation may also be related to the low loadings of the MDRS-22 emotional suppression (ES) subfactor on externalizing depression risk ($\lambda = .57$, current study; $\lambda = .65$, Rice et al., 2017). ES is consistently among the lowest loading of the all MDRS-22 sub-factors.

The finding of MDRS-22 scalar invariance has implications for the interpretation of mean differences in MDRS-22 scores. Means for African American men were higher on all factors except somatic symptoms, indicating that AA men in the current sample exhibited higher externalizing symptom levels than EA men. Additionally, their mean MRNI-SF and WHODAS-SF scores were higher than for EA men. This pattern of increased scores is in keeping with

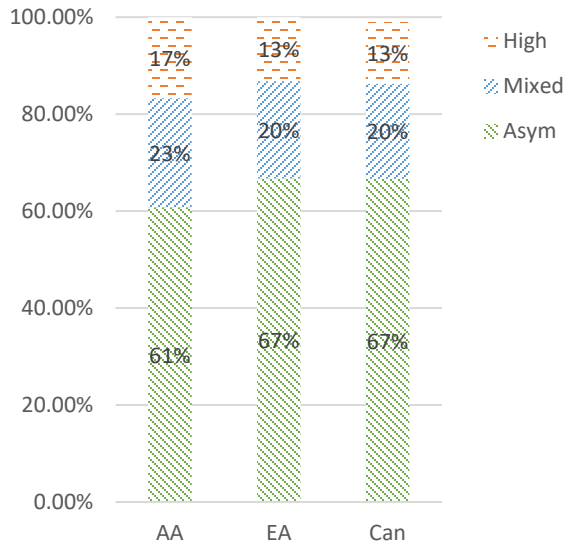
previous research showing correlations between greater endorsement of traditional masculine role norms and negative psychosocial outcomes (e.g. Gerdes & Levant, 2018; O'Neil, 2008).

Latent Profile Analysis

The finding of scalar measurement invariance for the MDRS-22 provides an important basis for further research on men's externalizing depression among diverse US populations as exemplified by the current study's LPA. Results of the LPA found support for configural similarity (Morin et al., 2016) across the two sample groups, suggesting that three MDRS-22 profiles exist in each group: a large, asymptomatic profile, a smaller mixed-symptom profile, and a small high-externalizing profile (Figure 5). The test of structural similarity was not supported

Figure 5

Profile Sizes: AA and EA Samples Compared with Canadian Sample (Rice et al., 2018)



for these profiles however, indicating that profile members differed significantly by group on factor levels. Despite sharing some parallel aspects (Figures 5-8), these profiles differ from those found among a sample of Canadian men (Rice et al., 2018). The conditioning of profile membership on PHQ-9 scores for Canadian men may contribute to the profile differences.

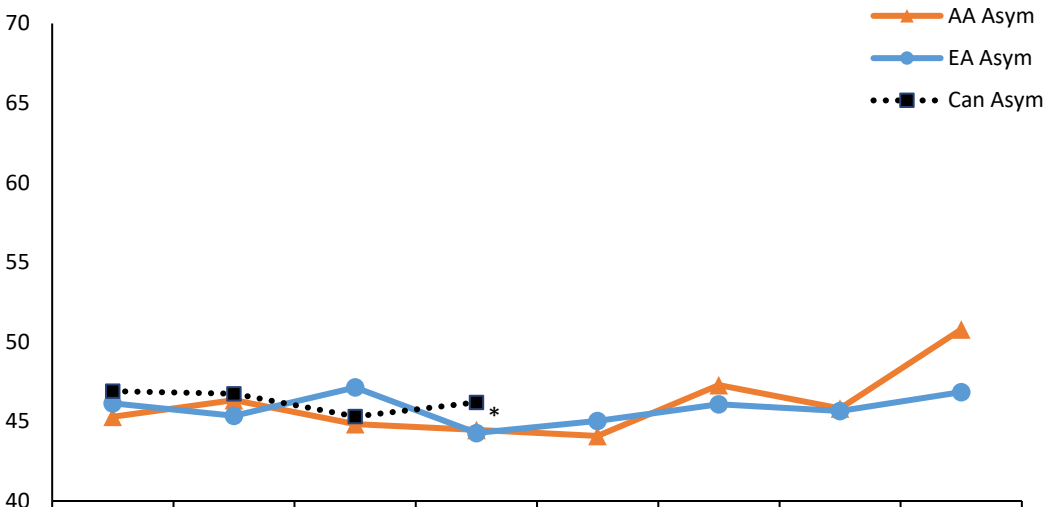
Nonetheless, profile differences between the two studies bring the generalizability of results into questions and suggest the importance of replicating the current research.

Comparison of AA and EA Men

Asymptomatic Subgroups. The two asymptomatic subgroups encompass the majority of both AA (60.8%) and EA (66.8%) (Figure 5) participants. Membership in these subgroups was characterized by parallel patterns of mean PHQ-8, WHODAS-SF and MDRS-22 scale scores as well as mean MDRS-22 subscale scores, all of which were below group means (Figure 6).

Figure 6

MDRS-22 Asymptomatic Profiles for AA, EA and Canadian Men



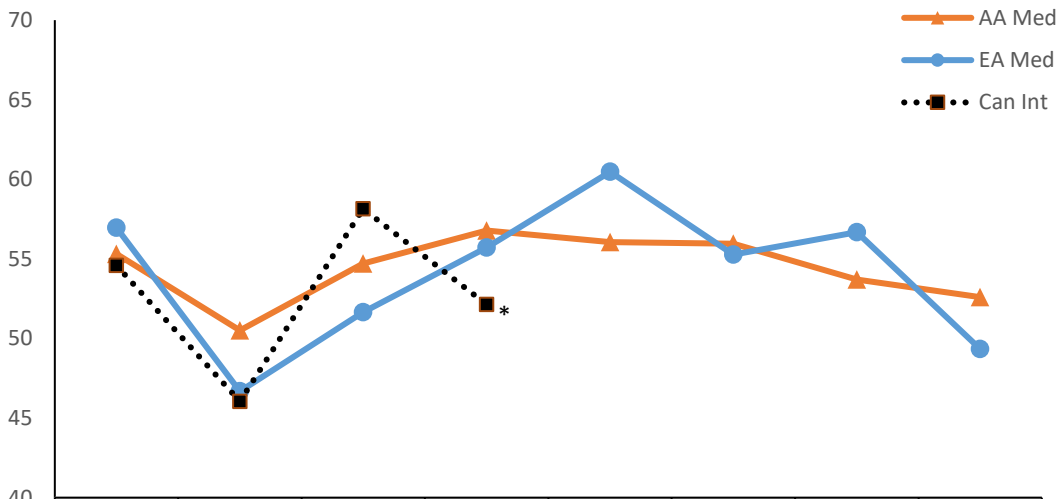
	PHQ8	Drug	Alch	RAA	Soma	Emot	WHOD	MRNI
AA Asym	45	46	45	44	44	47	46	51
EA Asym	46	45	47	44	45	46	46	47
Can Asym	47	47	45	46 *				

**Risk, anger and aggression scores for Canadian samples in this figure are the average of the risk-taking behavior (M = 46.68) and the anger and aggression (M = 45.73) subscales reported for this profile (Rice et al., 2018). They are intended for illustrative rather than analytical purposes.*

Mixed Symptom Subgroups. The second set of subgroups, comprising a minority of both AA (22.5%) and EA (20.1%) (Figure 5) participants, also exhibited parallel patterns of mean scale and subscale scores. Members in these subgroups were characterized by moderately elevated internalizing and externalizing depression symptoms (Figure 7) including conventional depression; alcohol use; risk, anger, and aggression; somatic symptoms; and emotional suppression. Degree of functional impairment was also elevated for participants with these profiles. Drug use was somewhat elevated for AA men, but not for EA men.

Figure 7

MDRS-22 Mixed Symptom Profiles for AA, EA and Canadian Men



	PHQ8	Drug	Alch	RAA	Soma	Emot	WHOD	MRNI
AA Med	55	51	55	57	56	56	54	53
EA Med	57	47	52	56	60	55	57	49
Can Int	55	46	58	52 *				

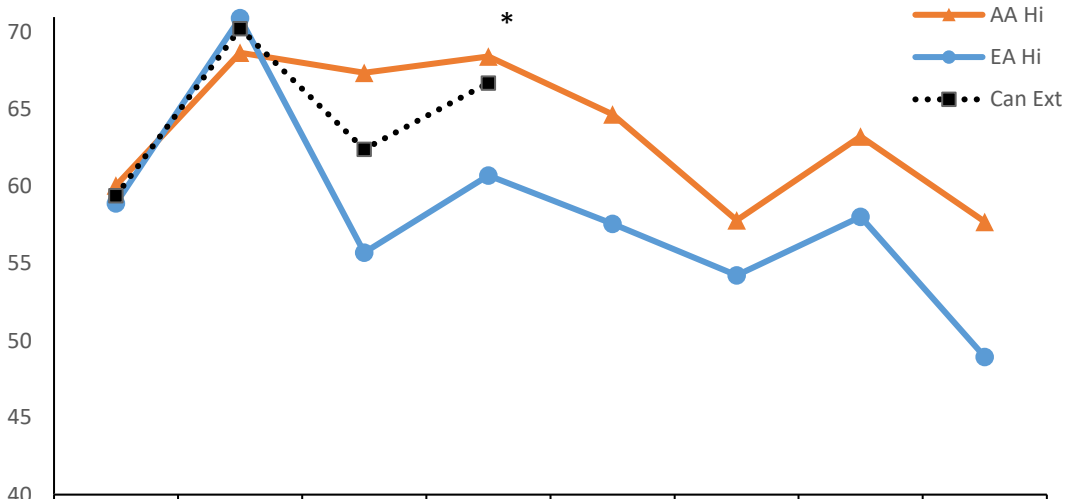
** Risk, anger and aggression scores for Canadian samples in this figure are the average of the risk-taking behavior (M = 52.89) and the anger and aggression (M = 51.57) subscales reported for this profile (Rice et al., 2018). They are intended for illustrative rather than analytical purposes.*

High Symptoms Subgroups. A third set of profiles made up the smallest proportion of both AA (16.7%) and EA (13.2%) samples (Figure 5). These high symptom subgroups were

characterized by drug use scores approximately two standard deviations above the group mean, as well as elevated conventional depression scores similar to those found in the mixed symptom subgroups (Figure 8). AA and EA men with this profile differed substantially, however, with regard to other scores. When compared to their counterparts, AA men exhibited substantially

Figure 8

MDRS-22 High Externalizing Symptom Profiles for AA, EA and Canadian Men



	PHQ8	Drug	Alch	RAA	Soma	Emot	WHOD	MRNI
AA Hi	60	69	67	68	65	58	63	58
EA Hi	59	71	56	61	58	54	58	49
Can Ext	59	70	62	67 *				

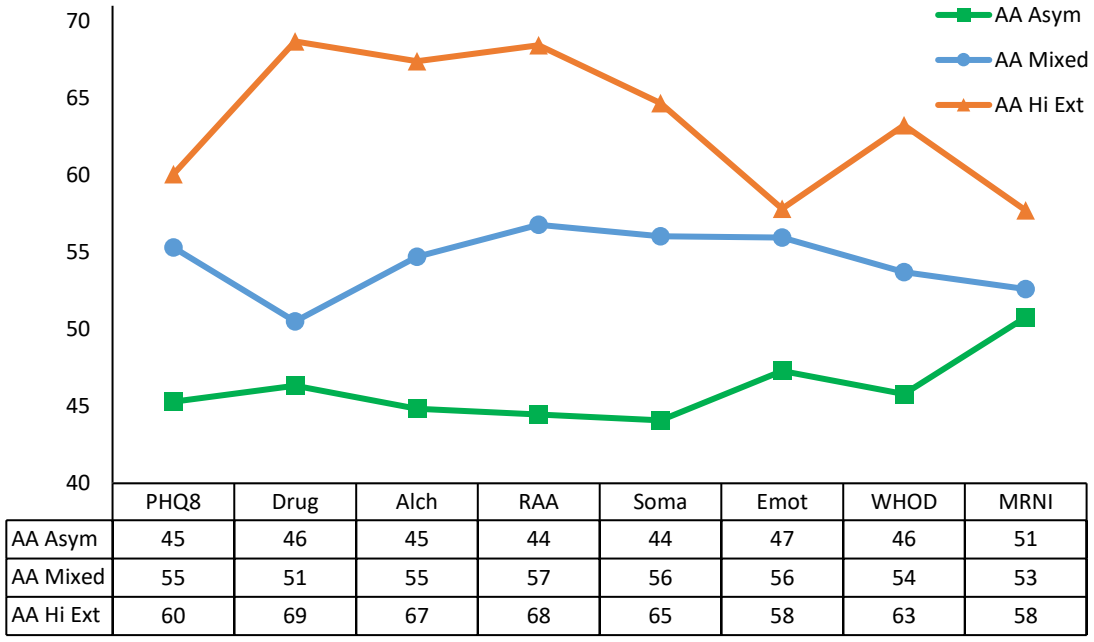
** Risk, anger and aggression scores for Canadian samples in this figure are the average of the risk-taking behavior (M = 63.21) and the anger and aggression (M = 70.24) subscales reported for this profile by Rice and colleagues (2018). They are intended for illustrative rather than analytical purposes.*

higher alcohol use, risk, anger, and aggression, somatic symptoms, and functional impairment. In contrast, EA men with this profile exhibited a pattern of these scores that more closely resembled the mixed internalizing profiles.

Within-Group Patterns. Among EA men (Figure 10), the two higher-scoring depression profiles showed parallel patterns of mixed, moderately elevated internalizing and externalizing

Figure 9

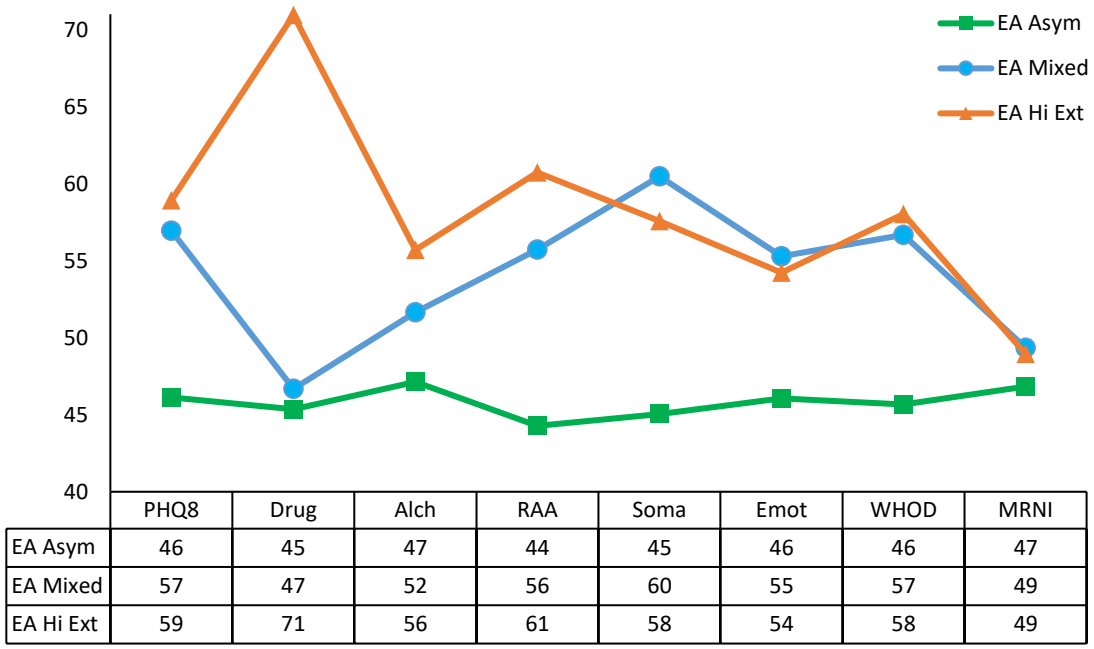
MDRS-22 Symptom Profiles for AA Men



	PHQ8	Drug	Alch	RAA	Soma	Emot	WHOD	MRNI
AA Asym	45	46	45	44	44	47	46	51
AA Mixed	55	51	55	57	56	56	54	53
AA Hi Ext	60	69	67	68	65	58	63	58

Figure 10

MDRS-22 Symptom Profiles for EA Men



	PHQ8	Drug	Alch	RAA	Soma	Emot	WHOD	MRNI
EA Asym	46	45	47	44	45	46	46	47
EA Mixed	57	47	52	56	60	55	57	49
EA Hi Ext	59	71	56	61	58	54	58	49

symptoms, differentiated only by a high level of drug use among the smaller subgroup. Among AA men (Figure 9), a single mixed depression profile characterized by moderately elevated internalizing and externalizing symptoms much like the EA profiles was found. Additionally, a distinctive high externalizing profile, characterized by moderately elevated internalizing but high externalizing symptoms, was observed. The differences between symptom patterns among two highest scoring AA and EA subgroups is distinctly unlike the largely parallel symptom patterns seen among the moderately elevated and asymptomatic subgroups. They suggest that a subset of AA men may experience, express or cope with depression through a pattern of consistently high externalizing symptoms that is in contrast to the mixed patterns of internalizing and externalizing exhibited by EA men. This externalizing pattern is consistent with theory and research connecting depression, and particularly externalizing depression, with rigid conformity to traditional masculine norms (Genuchi, 2018; Nadeau et al., 2016). Likewise, comparatively lower TMI scores exhibited by high-profile EA men may be connected to their lower non-drug externalizing depression scores.

MRNI-SF Score Patterns. While most profiles were not consistently or clearly differentiated by MRNI-SF scores, two patterns are worthy of note. First, mean MRNI-SF scores were consistently higher for African American men. Indeed, all AA MRNI-SF profile means were higher than the highest EA mean. Additionally, while mean MRNI-SF scores for EA men varied little by profile (*m* = 47, 49, and 49 for asymptomatic, mixed, and high externalizing profiles respectively), high-profile AA men showed substantially higher mean MRNI-SF scores (*m* = 51, 53, and 58 respectively). These patterns suggest that TMI may be more salient for AA men, and particularly for high-externalizing-profile AA men, than for their White counterparts. Such a suggestion is in keeping with research that shows higher levels of commitment to

traditional masculine norms and TMI among African American men (Griffith et al., 2012; Nadeau et al., 2016; Vogel et al., 2011). It also aligns with research associating higher MDRS scores and greater conformity to masculine norms among Australian men (Rice, 2011). In a separate study, Rice and colleagues observed that high-TMI Australian men "are at particular risk of higher scores on externalising symptoms…and externalising symptoms may be the most pertinent to their clinical presentation" (2013, pp. 956-957).

Comparison of US and Canadian Men

The profiles found in the current study reflect commonalities and some differences with a set of analogous profiles observed among a single large (n = 1000) homogenous sample of Canadian men in a recent LPA study by Rice and colleagues (2018). That study was based only on PHQ-9 scores and MDRS-22 alcohol, drug use, anger/aggression, and risk-taking subscales, and no fit or similarity analysis was undertaken. Despite these differences, Canadian men exhibited three profiles with proportions (66.7%, 19.6%, and 12.7%) much like those found in the current study (Figure 5). The Canadian subgroups included an asymptomatic profile, an internalizing depression profile with alcohol involvement comparable to AA and EA mixed internalizing profiles, and a high externalizing symptoms profile. Although limited to four datapoints, the Canadian asymptomatic and internalizing depression profiles appear similar to the asymptomatic and mixed symptoms profiles found in the current study. Canadian and US high externalizing profiles (Figure 8) also show similarities in conventional depression and drug use levels. However, Canadian men show levels of alcohol use and risk, anger and aggression more consistent with AA than EA men.

An aspect of the Canadian findings not replicated in the current study is the association between high-externalizing-profile membership and suicidality. Although small as a proportion

of the sample, high externalizing profile Canadian men were significantly more likely to report recent suicide plans or attempts than other participants. It is possible that high-externalizing profile US men would exhibit similar associations, however the only item focused on suicidality, the PHQ-9 item 9, was dropped during the measurement invariance process.

Strengths and Limitations

The current study has several limitations. It is subject to the limitations of self-report measures as the data represent self-perceptions of depression symptoms and functioning and are less reflective of observed or actual characteristics. MTurk participants, including those in this sample, tend to be significantly younger, more educated, and less affluent than the population at large (Chandler & Shapiro, 2016), which may detract from the study's generalizability. Selection may have been biased by the use of paid participants and by the presentation of the study in prompts and introductions. Research has suggested that some men carry substantial stigma around topics such as mental health and depression (Cook & Wang, 2010; Oliffe et al., 2016; Wang et al., 2007). Despite the use of neutral language and concealing the research topic prior to survey completion, such stigma may have affected participation. However, when participants were given the opportunity to remove their data from the study after its topic was revealed, only one person did so. An additional potential limitation is that, as Morin and colleagues note, the profile similarity approach used here incorporates a degree of subjectivity, that its statistical properties "remain under-documented at best" (2016, p. 249), and that variations in degree of statistical power with sample, scale and profile characteristics remain undetermined.

Despite its limitations, the current study provides evidence of the MI of the MDRS-22 across samples of AA and EA men. It also used the formal statistical process provided by Morin and colleagues (2016) to examine the existence and similarity of MDRS-22 externalizing

depression symptom subgroups among African American and European American men. Doing so provided further support for externalizing depression as a mixed internalizing/externalizing syndrome (Rabinowitz & Cochran, 2008; Rutz et al., 1995). Additionally, the study contributes substantially to the empirical research literature regarding AA men's depression.

The results presented above also have implications for research, practice, and training with regard to men's depression. The current study replicates and extends research showing that many men's depression is characterized by both internalizing and externalizing symptoms. Such research highlights the need for scholars and clinicians to incorporate a broader conceptualization of men's depression (Rice, Kealy, et al., 2018) than that indexed by existing DSM depression criteria. This is particularly the case given the demonstrated relationship between externalizing depression symptom patterns like those found in the current study and suicidality (e.g. Kealy et al., 2018; Rice, Oliffe, et al., 2018; Rice, Ogrodniczuk, et al., 2018). Such a relationship suggests the need to improve clinical screening for at-risk men (Smith, Mouzon, & Elliott, 2018) and to provide working clinicians with up-to-date training, current research and best practices in identifying, diagnosing and treating men with depression and substance use issues (APA, 2018a).

Results of the current study also emphasize the importance of examining within-group differences in men's mental health in general (Rosenfeld & Mouzon, 2013) and depression in particular (Smith & Mouzon, 2018). Research focusing solely on sex differences fails to reveal significant and varying patterns of men's externalizing depression and substance use that occur at the intersections of gender, race, and mental health (Hyde, 2005). The results of the current study, on the other hand, suggest that patterns of substance use and depression differ

substantially for African American and European American men and involve externalizing as well as internalizing symptoms.

Additionally, the results of the current study highlight the need for trainee clinicians to develop competence in gender-sensitive clinical models (Kaslow, 2004) and "a deeper knowledge of how gender issues intersect with a client's presenting concerns" (Owen et al., 2009, p. 456). If upcoming clinicians are to address differences in men's depression patterns appropriately, clinical training should incorporate knowledge of multiple masculinities, current research on men's externalizing depression and the influence of male role norms on symptom expression (O'Neil & Renzulli, 2013; Seidler et al., 2018).

Future studies

Future beneficial research on externalizing depression would include the replication and extension of the current study to examine MDRS-22 invariance and latent profiles among other groups, including Asian American, Latinx and gender non-conforming populations as well as women. Examination of the scale's age invariance and associated latent profiles would be useful as well. Study outcomes identifying significant differences in MDRS-22 scores by age (e.g. Price et al., 2018; Rice et al., 2017) and decreased endorsement of TMI among older men (e.g. Heath, 2005; O'Neil, 2008; Wester et al., 2005) support the need for such research. However, no study has yet examined the age invariance of any common measure of masculinity ideology, including the MRNI-SF used in the current study (Thompson & Bennett, 2015). Recent development of the Aging Men's Masculinity Ideologies Inventory (Levant et al., 2020) provides a positive sign in this regard. The use of multiple indicators, multiple causes (MIMIC) models, also described as CFA with covariates (Brown, 2015), could provide an efficient and economical means of examining such invariance in existing scales.

Longitudinal studies would provide greater understanding of the role externalizing depression symptoms play in the development of conventional depression. Additionally, research leading to the clinical use of a scale like the MDRS-22 as a depression screener could begin to illuminate and ameliorate the under-diagnosis of men's depression and comparatively high rates of suicide. Additionally, research on the incidence, correlates, moderators and mediators of externalizing depression could improve understanding of discrepancies in rates of depression across sex, gender, race and ethnicity.

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