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Mental Health Diagnostic Considerations in Racial/Ethnic Minority Youth

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Abstract

Misdiagnoses of racial/ethnic minority youth's mental health problems can potentially contribute to inappropriate mental health care. Therefore, we conducted a systematic review that focuses on current theory and empirical research in an attempt to answer the following two questions: 1) What evidence exists that supports or contradicts the idea that racial/ethnic minority youth's mental health problems are misdiagnosed? 2) What are the sources of misdiagnoses? Articles were reviewed from 1967 to 2014 using PsychINFO, PubMed, and GoogleScholar. Search terms included "race", "ethnicity", "minority", "culture", "children", "youth", "adolescents", "mental health", "psychopathology", "diagnosis", "misdiagnosis", "miscategorization", "underdiagnosis", and "overdiagnosis". Seventy-two articles and book chapters met criteria and were included in this review. Overall, evidence was found that supports the possibility of misdiagnosis of ethnic minority youth's emotional and behavioral problems. However, the evidence is limited such that it cannot be determined whether racial/ethnic differences are due to differences in psychopathology, mental health biases, and/or inaccurate diagnoses. Cultural and contextual factors that may influence misdiagnosis as well as recommendations for research and practice are discussed.

Keywords

Mental health diagnosis; racial/ethnic minority youth; disparities; culture; assessment; mental health care; psychotherapy

Introduction

Researchers have called for the need to improve diagnostic accuracy and validity of assessment tools for many years (Alegria, Vallas, & Pumariega, 2010; Lewis-Fernandez and Diaz, 2002; Pottick, Kirk, Hsieh, & Tian, 2007; Yeh, McCabe, Hurlburt, Hough, Hazen et al., 2002). According to the Cultural Formulation Model (Lewis-Fernandez and Diaz, 2002), diagnostic accuracy plays an important role in culturally sensitive clinical evaluation and assessment. This is particularly important for racial/ethnic minority children because their

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Declaration of Interest

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population is expected to increase in the next 25 years. Furthermore, research indicates that ethnic minority children continue to receive poorer quality of care for their mental health problems compared to their non-Hispanic Caucasian counterparts (Kataoka, Zhang, & Wells, 2002; Kuno & Rothbard, 2005; Miranda & Cooper, 2004; National Institutes of Mental Health, 2001; U.S. Department of Health and Human Services, 2001; U.S. Public Health Service, 2000). A potential contributor to racial/ethnic disparities in mental health care may be difficulties and uncertainty in diagnostic assessment of racial/ethnic minority youth, which may result in possible misdiagnoses of their emotional and behavioral problems (Lewczyk, Garland, Hurlburt, Gearity, & Hough, 2003; Lopez & Guarnaccia, 2000; Strakowski, Hawkins, Keck Jr., McElroy, West et al., 1997). Misdiagnosis could be problematic because it could lead to ineffective or inappropriate care (Malgady, 1996). However, despite the clinical importance of providing accurate diagnoses, empirical evidence of misdiagnosis and its correlates remains scarce.

The issue of misdiagnoses may be further complicated in psychotherapy for youth in particular since parents often play a crucial role in the reporting of their child's mental health problems. In general, parents are involved in many aspects of service utilization, such as problem recognition and facilitation of improvement during treatment (Cauce, Paradise, Domenech-Rodriguez, Cochran, Shea et al., 2002; Kazdin, 1989). Specifically, it has been found that mothers are key stakeholders in the identification and definition of their child's mental health problems (Burns, Costello, Angold, Tweed, Stangl et al., 1995; Combs-Orme, Chernoff, & Kager, 1991). However, cultural factors, such as symptom presentation and idioms of distress, among others, may influence how parents recognize and report their problems, which may influence diagnoses. Additionally, research has shown that there is underutilization of mental health care among several racial/ethnic minority groups across the lifespan (Cook, McGuire, & Miranda, 2007; Cook, Zuvekas, Carson, Wayne, Vesper et al., 2014; Garland, Lau, Yeh, McCabe, Hough et al., 2005). This underutilization of psychological services by adults may result in underutilization of psychological services by youth.

We present a review of current literature that may elucidate racial/ethnic differences in diagnosis and seeks to answer the question of whether there is evidence of misdiagnosis (i.e. miscategorization, underdiagnosis, overdiagnosis) of youth mental health problems in racial/ethnic minority populations. In addition, this review presents theoretical and empirical evidence of various cultural factors that may help to explain possible racial/ethnic disparities or misdiagnoses. More specifically, this review discusses how different conceptualizations of mental illness can lead to variations in the perception of distress thresholds, the experience, expression, and reporting of psychopathology. We also aim to describe problems with current diagnostic and assessment procedures, and client/parent-therapist agreement on youth problems.

Method

We reviewed articles and book chapters published from 1967 to 2014 and identified through PsycINFO, PubMed, and GoogleScholar search engines. Search terms included "race", "ethnicity", "minority", "culture", "children", "youth", "adolescents", "mental health",

“psychopathology”, “diagnosis”, “misdiagnosis”, “miscategorization”, “underdiagnosis”, and “overdiagnosis”. Inclusion criteria included articles and book chapters written in the English language, that presented research relevant to racial/ethnic differences in the diagnosis or identification of mental health problems or psychopathology in a racial/ethnic minority group, and that examined factors potentially contributing to misdiagnosis. Articles and book chapters were excluded if they did not include children, youth, or adolescents in their sample. Out of 149 articles and book chapters, 72 met criteria and were included in this review.

Results

Is There Evidence of Misdiagnosis of Racial/ethnic Minority Youth Mental Health Problems?

While there is evidence that the issue of misdiagnosis is not specific to just racial/ethnic minority but is applicable to all youth across various disorders, including attention deficit hyperactivity disorder (ADHD), bipolar disorder, and psychotic disorders (Dang, Warrington, Tung, Baker, & Pan, 2007; Olson & Pacheco, 2005; Reimher & McClellan, 2004), various studies have supported the notion that there are ethnic disparities in the diagnosis of ethnic minority youth’s psychological problems. Research presented in this area is separated into prevalence studies, studies on diagnosis in treatment settings, and studies examining symptomatology and functioning.

Prevalence Studies

Although few in number, there are some larger epidemiological studies that have examined how the prevalence of psychiatric diagnoses of children vary by race/ethnicity. Cuffe, Moone, and McKeown (2005) examined the prevalence of ADHD in a diverse sample of children ages 4 to 17 and found that Hispanic children were less likely than White children to have a diagnosis of ADHD based on parent-report on the Strengths and Difficulties Questionnaire. In a sample of diverse youth ages 11 to 17 years old in the Houston metropolitan area, African Americans had a lower prevalence of mood disorders and substance use disorders than European Americans, based on questionnaires, the Diagnostic Interview Schedule for Children-IV, and the Children’s Global Assessment Scale (Roberts, Roberts, & Xing, 2006). In this same study, European American youth had the highest prevalence of substance abuse disorders compared to African American and Mexican American youth (Roberts et al., 2006). Other studies found no differences in the overall prevalence of psychiatric disorders between American Indian and White youth (Costello, Farmer, Angold, Burns, & Erkanli, 1997) and between African American and White youth (Angold, Erkanli, Farmer, Fairbank, Burns et al., 2002). Likewise, in a study of non-treated, low socio-economic status (SES) children in inner-city neighborhoods of the Netherlands, no differences were found in the prevalence of psychiatric disorders between native and immigrant children (Zwirs, Burger, Schulpen, Wiznitzer, Fedder et al., 2007). It is possible that instrument bias and parental misinterpretation, minimization, or exaggeration of symptoms may explain the inconsistency of findings.

Studies Examining Diagnoses in Treatment Settings

Although most of the studies on racial/ethnic differences in the prevalence of youth psychological disorders seem to suggest that there were few or no differences, studies of youth in mental health service using sectors, such as inpatient and outpatient treatment settings, may indicate more racial/ethnic variations in diagnosis. Patterns of diagnosis are presented by racial/ethnic group.

Non-Hispanic White youth—A representative sample of almost 8,000 adolescents (ages 12–17 years) who experienced at least one major depressive episode in the previous year found that African Americans, Hispanics and Asians were significantly less likely to receive treatment for major depression than non-Hispanic Whites (Cummings & Druss, 2011). Rates after adjusting for relevant demographics (such as family income and insurance status) indicated that 40% of non-Hispanic White adolescents received depression treatment compared to 32% of African American, 31% of Hispanic, and 19% of Asian American adolescents (Cummings & Druss, 2011). Moreover, this same study found that these minority groups were also less likely to receive medication to treat their major depression or be seen by a mental health or medical treatment provider compared to their non-Hispanic White counterparts (Cummings & Druss, 2011). A nationally representative sample of almost 6,500 adolescents (ages 13 to 18 years old) found similar results, in that African American and Hispanic youth were less likely to receive treatment for anxiety and mood disorders compared to non-Hispanic White youth (Merikangas, He, Burstein, Swanson, Avenevoli et al., 2010). However, it is possible that this may be related to a lack of parental consent or proximity to treatment or difficulty accessing treatment rather than a function of clinician bias or misdiagnosis. For internalizing disorders, non-Hispanic White youth are more likely to receive mental health services compared to ethnic minority youth (Gudino, Lau, Yeh, McCabe, & Hough, 2008). In a series of problem-based vignettes, a survey study found that mental health professionals (psychiatrists, social workers, psychologists) were more likely to assign a diagnosis to a non-Hispanic White youth as compared to African American or Hispanic youth (Pottick et al., 2007).

African American youth—Prevalence of psychological diagnoses in African American youth varies across diagnoses. After controlling for age, gender, functional impairment, and prior service use, African American youth in mental health services were less likely to be diagnosed with ADHD or a mood disorder compared to non-Hispanic White youth (Yeh et al., 2002), although it is possible that fewer African American youth with these disorders were referred to the clinic. After controlling for socioeconomic status, age, gender, and functional impairment, African American youth were more likely than non-Hispanic White youth to be diagnosed with disruptive behavior disorder and conduct related problems (Nguyen, Huang, Arganza, & Liao, 2007). African American youth are shown to be more frequently diagnosed by their clinicians with conduct disorder and psychotic disorders and less often diagnosed with mood, anxiety, adjustment, and substance abuse disorders (Fabrega, Ulrich, & Mezzich, 1993; Kilgus, Pumariega, & Cuffe, 1995; Mak & Rosenblatt, 2002), however it is unclear about whether they were actually more seriously ill at the time of the referral. Similarly, in psychiatric inpatient settings, African American male adolescents were more frequently diagnosed with schizophrenic spectrum disorders while

non-Hispanic White adolescents were more often diagnosed with alcohol abuse, major depression, and bipolar disorder (Delbello, Lopez-Larson, Soutullo, & Strakowski, 2001; Muroff, Edelsohn, Joe, & Ford, 2008; Patel, Delbello, & Strakowski, 2006; Tolmac & Hodes, 2004). Mandell, Ittenbach, Levy, and Pinto-Martin (2007) found a delay in diagnosis of autism for African American children as they were less likely than White children to receive an autism diagnosis at their first specialty care visit. In addition, they were more likely to be diagnosed with adjustment disorder and conduct disorder than to be diagnosed with ADHD. No differences were reported in symptom presentation and diagnosis of social phobia between African American and non-Hispanic White children (White & Farrell, 2006). It is possible, however, that parents may have been less forthcoming, informed, or prepared with relevant information at the visits.

Hispanic youth—Hispanic youth were more likely than non-Hispanic White youth to be diagnosed by their clinicians with adjustment disorders, anxiety disorders, depression or dysthymia, disruptive behavior disorders, substance use disorders, and psychotic disorders, and less likely to be diagnosed with ADHD than non-Hispanic White youth (Nguyen et al., 2007; Yeh et al., 2002). Somewhat different results were found in another study where clinicians were more likely to diagnose Hispanic youth with disruptive behavioral disorder and substance abuse disorder and less likely to diagnose them with ADHD, anxiety disorders, and mood disorders (Mak & Rosenblatt, 2002). In a national sample of children and youth who used inpatient services, more Hispanic children and pre-adolescents (age 6–12 years) were diagnosed with psychosis than non-Hispanic White, African American, Asian Pacific Islander, American Indian, and Alaskan Native youth. In contrast, Hispanic adolescents (age 13–17 years) had fewer psychiatric disorder diagnoses overall than any of the other ethnic groups (Leal, 2005). Hispanic adolescents presenting at emergency services were more likely to receive diagnoses of psychotic or behavioral disorders than non-Hispanic White adolescents (Muroff et al., 2008), although it is possible that they were more ill before presenting to emergency services. In a state-wide publicly funded service system, minority children (which included Hispanic children) were 38% more likely to receive diagnoses of oppositional defiant disorder compared to non-Hispanic White children, after controlling for other variables such as age and gender (Heflinger & Humphreys, 2008).

Asian American/Pacific Islander youth—Compared to non-Hispanic White, African American, Hispanic, and Native American youth, Asian American youth had a lower chance of receiving an ADHD diagnosis from clinicians but a greater chance of receiving disruptive behavioral disorder, substance abuse disorders, and psychotic disorders diagnoses (Mak & Rosenblatt, 2002). Asian American children were less likely than non-Asian Americans (Whites, African American, Hispanic, Native Hawaiians, and Native Americans) to be diagnosed by clinicians with depression and ADHD and more likely to be diagnosed with anxiety and adjustment disorder (Nguyen, Arganza, Huang, Liao, Nguyen et al., 2004; Yeh et al. 2002). Native Hawaiian youth were more likely than non-Hispanic White youth to be diagnosed with disruptive behavior disorder and conduct related problems and less likely to be diagnosed with depression or dysthymia (Nguyen et al., 2007).

American Indian youth—American Indian youth were less likely to be diagnosed with anxiety disorders and more likely to be diagnosed with ADHD and substance use disorders than non-Hispanic White youth (Shaffer, Fisher, Dulcan, Davies, Piacentini et al., 1996). Native American youth were also shown to have higher substance abuse rates than European American youth (Costello, Farmer, & Angold, 1999). Few studies have examined diagnoses of American Indian youth compared to other ethnic groups and studies that examine this population often do not find differences because the sample size is too small to detect differences (Mak & Rosenblatt, 2002).

Summary and Understanding of Patterns of Racial/ethnic Disparities in Diagnosis

Although most of the findings in racial/ethnic differences in the diagnosis of minority youth are varied, some themes or patterns are indicated by the studies in this review. Prevalence studies show relatively few racial/ethnic differences in the patterns of disorders, but diagnoses in treatment settings seem to indicate more racial/ethnic disparities. African American youth tend to be more frequently diagnosed with psychotic and disruptive behavioral disorders and less likely to be diagnosed with mood and substance abuse disorders. Hispanic youth appear to generally be more often diagnosed with disruptive behavior and substance abuse disorders and less frequently diagnosed with ADHD. Asian American/Pacific Islander youth had mixed patterns of diagnoses, but studies seemed to show a lower likelihood of ADHD. Not enough research is available for Native American youth to draw any broad conclusions. The inconsistencies in the findings may be due to a variety of factors such as treatment setting, treatment-seeking behaviors, variety of diagnoses, criteria used for diagnosis, and differences in the control variables.

Based on the studies currently available in the literature, is not yet clear whether these disparities represent true differences in psychopathology, variations in the manifestation of disorders, misdiagnosis, differences in help-seeking and referral patterns, or billing procedures. Few studies have attempted to disentangle the racial/ethnic disparities in diagnoses and systematically investigate potential misdiagnosis. Delbello et al. (2001) suggested that variations in the likelihood of certain diagnoses between African American and non-Hispanic White youth may be due to misdiagnosis, but did not directly assess for the misdiagnosis. Mak and Rosenblatt (2002) found inconsistencies between Hispanic American children's symptomatology based on the Child Behavior Check List (CBCL) and functioning based on their scores on the Child and Adolescent Functional Assessment Scale with their diagnoses assigned by clinicians. The authors purported that this discrepancy may indicate that clinician diagnoses were culturally biased. Furthermore, based on analysis of the research presented thus far, there was a discrepancy between racial/ethnic differences delineated in the prevalence studies and studies on diagnoses in treatment settings. Prevalence studies, often based on research diagnoses which may have more rigorous and stringent diagnostic criteria, found few racial/ethnic differences, but diagnoses in clinical settings, where the criteria are less well-defined and vary across treatment setting, indicated more differences. This discrepancy may add to evidence supporting the possibility of misdiagnosis in treatment settings.

Although the actual causes of racial disparities in diagnosis are inconclusive at this point, potential misdiagnosis of youth problems is problematic because it could mean that their mental health needs are unmet or that they are receiving inappropriate care. Furthermore, misdiagnosis may imply that there is incongruence between how racial/ethnic minority children and their parents express and report their presenting problems and what is diagnosed by clinicians. This could have negative implications for treatment in that racial/ethnic minority children may not be receiving appropriate and effective intervention (Malgady, 1996). Therefore, it is critical to elucidate, understand, and attempt to correct any sources of misdiagnosis that may exist.

What Are the Possible Sources of Bias that Contribute to Misdiagnosis?

Some sources of misdiagnoses that affect youth from all racial/ethnic groups include variations or bias in clinician judgments and assessment and diagnostic tools (Youngstrom, Meyers, Youngstrom, Calabrese, & Findling, 2006), and disagreement among multiple informants (e.g. child, parent, therapist) that may further complicate diagnoses (Hawley & Weisz, 2003; Yeh & Weisz, 2001).

DSM and categorization of disorders—Some researchers and scholars purport that the previous nosological system for mental disorders based on the Diagnostic Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) was based on models of conceptualizing and classifying mental illness that may not thoroughly accommodate cultural factors that may influence diagnosis (Canino & Alegria, 2008; Cauce et al., 2002; Lopez & Guarnaccia, 2000). In addition, although some individuals from different cultures may meet criteria for the same diagnosis, there are cultural differences in the relationship between symptoms and disorders (Alegria & McQuire, 2003). For instance, non-Hispanic White patients were more likely to endorse the symptom of “two years or more depressed or sad most days”, which meant that this symptom is informative about the presence of depression for non-Hispanic Whites. In contrast, endorsement of “sad and blue” is a more powerful predictor of depression for African Americans and Hispanics. This study illustrates that DSM-IV criteria may not take into account that certain symptoms of depression may weigh differently across different cultural groups, even though the ultimate diagnosis is the same (Alegria & McQuire, 2003).

While the DSM-IV-TR lacked important information about how cultural factors influence causal mechanisms in diagnosis mental health disorders, the most current DSM (5th edition) has attempted to improve on the cultural sensitivity by adding information related to cross-cultural variations in the presentation of mental illnesses (American Psychiatric Association, 2013). Although no embedded in the diagnostic criteria, DSM-5 includes a cultural formulation interview to assist clinicians in assessing for cultural factors that may influence presentation of symptoms and distress (American Psychiatric Association, 2013). It is doubtful that cultural formation interview and the added cultural sensitivity components within DSM-5 by themselves will have much influence on clinical diagnoses and the receipt of mental health services in ethnic/racial minority youth. The difference maker is more likely to be culturally competent clinicians.

Furthermore, evidence suggests that ethnic minorities may use folk mental health classification systems that are distinct from mainstream diagnostic categories (Good & Delvecchio-Good, 1982; Kleinman, 1988), such as “fright-illness” “heart-distress” “Ataque de nervios” (Guarnaccia, Lewis-Fernandez, & Marano, 2003), and “neurasthenia” (Zheng, Lin, Takeuchi, Kurasaki, Wang et al., 1997; Takeuchi, Chung, Lin, Shen, Kurasaki et al., 1998). Different cultures have been shown to have their own idioms of distress/specific illness categories (Nichter, 1981; Good & Delvecchio-Good, 1982) and it is conceivable that American psychologists’ conceptualization of youth’s problems may be incongruent with or may not fully accommodate ethnic minority children and parents’ perceptions of their problems under current nosological systems. For instance, *taijin kyofusho* (TKS), a Japanese culture-bound syndrome that seems to resemble social phobia, is often miscategorized as social anxiety disorder (SAD) due to similar symptom presentations but they are qualitatively different in terms of cause of the fear (Stein & Matsunaga, 2001). TKS originates from fear of disrupting social harmony through embarrassing or offending others whereas in SAD, there is a greater fear of embarrassing the self (Maeda and Nathan, 1999; Tarumi, Ichimiya, Yamada, Umesue, & Kuroki, 2004). Therefore, although two individuals may appear to have the same symptoms, the experience of the disorder and its functional impact may be distinct due to different etiological pathways. Using the top-down, universalist approach to diagnosis, without taking into account the individual’s sociocultural context may lead to errors in diagnosis. This underscores the critical importance of a comprehensive, holistic, and biopsychosocial formulation in understanding the patient.

Equivalence of assessment measures—A number of studies provide evidence suggesting that assessment instruments for youth psychopathology may be biased or lack cultural equivalence (Leung & Wong, 2003; Okazaki & Sue, 1995, 2000). For instance, the factor structure of the Behavior Problem Index was not equivalent across the ethnic groups of African American, Hispanic, and non-Hispanic White children (Spencer, Fitch, Grogan-Kaylor, & McBeath, 2005). Lambert, Rowan, Lyubansky, and Russ (2002) examined whether African American parents’ report of their child’s problems matched with items on the CBCL and found that approximately 20 types of problems that parents reported were not on the CBCL. In addition, less than 1% of the parents reported child problems that matched more than 57 of the 118 CBCL items. The authors suggest that these findings indicate that the CBCL does not fully represent African American parents’ perceptions of clinically relevant problem behaviors of their children. Findings also revealed that in general, the problems that were not covered on the CBCL tended to be behavior problems that impacted the social environment. This perhaps highlights the collectivistic values that are more central to African American culture versus the individualistic values of European American culture. In a cross-national comparison of psychopathology syndromes of CBCL for adolescents in Thailand and the United States, researchers found poor agreement in syndrome comparisons and found that there were some syndromes such as delayed maturation, indirect aggression and/or delinquency, and sex problems in boys that were more pertinent with Thai adolescents (Weisz, Weiss, Suwanlert, & Chaiyasit, 2006). It was suggested that syndromes derived in the U.S. may not apply to populations in other countries. Hillemeier, Foster, Heinrichs, Heier and colleagues (2007) examined the measurement equivalence of using the Diagnostic Interview Schedule for Children (DISC) to diagnosis ADHD for African

American and non-Hispanic White children. Using parent report on the DISC, 7 out of the 37 items of DISC for ADHD have differential functioning between African American and non-Hispanic White parents. Non-Hispanic White parents were more likely to endorse those items, given similar underlying levels of hyperactivity. These findings suggest that parent report of youth symptoms on the DISC may yield different results across racial groups, given similar underlying needs for treatment. Researchers suggest that semantic equivalence is important to consider, particularly in the translations of instruments because seemingly exact translations of words may contain different cultural meanings (Marsella & Kaplan, 2002; Manson, 2000). Clearly, there is a need for more assessments to be analyzed for differences across racial/ethnic minority groups.

However, not all instances of the use of assessment measures yielded evidence of bias or lack of equivalence. Roessner, Becker, Rothenberger, Rohde, and Banaschewski (2007) found similar discriminating validity of the Child Behavior Checklist (CBCL) Attention Problem Scale across a Brazilian sample and German sample of children diagnosed with ADHD. The Youth Self-Report and Short Form Assessment for Children demonstrated factor structure equivalence across racial/ethnic groups of Hispanic, non-Hispanic White, African American, and Asian American youth (O'Keefe, Mennen, & Lane, 2006; Tyson & Glisson, 2005).

Disagreement among clinicians, parents, and other informants—Thorough clinical diagnosis of youth emotional and behavioral problems involves gathering information from multiple sources (Lau, Garland, Yeh, McCabe, Wood et al., 2004). This can provide a more complete picture of the youth's symptomatology and functioning across various contexts and situations, such as home and school. This may be particularly important for racial/ethnic minority youth because their behavior may vary across different environments (Kanawaza, White, & Hampson, 2007). However, having multiple informants can also pose a challenge for clinicians because oftentimes, there is disagreement between different informants (Lau et al., 2004). In addition, parent's recognition and experience of their target problems were often discordant with those of their child (Hawley & Weisz, 2003). Compared to European American children, teachers of African American children rated the child as having more problem behaviors than according to parent-reports, which could imply that African American children's behaviors differ between home and school or that teachers differ from parents on expectations or interpretations of African American children's behavior (Minsky, Petti, Gara, Vega, Lu et al., 2006). These differences between multiple informants and stakeholders may further convolute the diagnostic picture, particularly if there are differences in perceived functional impairment across cultures.

Clinicians frequently depend on parental reports in their assessment of the youths' presenting problems. However, parents may not always employ a symptom-focused approach and thus, their perceptions of their child's problems are often incongruent with those of clinicians who may focus more on diagnosis of disease (Pottick, Lerman, & Micchelli, 1992). Even though they were ethnically matched, Dominican mothers and clinicians disagreed on the etiology of child problems and expectations for and course of treatment for children's ADHD (Arcia, Sanchez-LaCay, & Fernandez, 2002). Parents and clinicians disagreed on child's problems based on CBCL in population of Dutch immigrants

such that clinicians tended to identified more problems than parents (Reijneveld, Harland, Brugman, Verhulst, & Verloove-Vanhorick, 2005). Culturally-based differences between clinicians and parents may also contribute to discrepancies in diagnosis (Lau et al., 2004). Nguyen et al. (2007) found that although clinicians were more likely to diagnose African American and Native Hawaiian children with disruptive behavioral disorders, their parents did not significantly rate their children higher on externalizing behaviors on the CBCL. This may indicate possible clinician bias or different cultural perspectives on youth problems and what behaviors are considered problematic.

Clinician bias—Clinician biases and stereotypes about different groups or lack of knowledge of possible differences in symptom presentation by minorities compared to non-Hispanic Whites may also result in inaccurate or missed diagnoses (Porter, Garcia, Jackson, & Valdez, 1997; Smedley, Stith, & Nelson, 2003). It has been shown that clinicians tend to place unequal emphasis on symptoms of clinical significance across different ethnic groups (Neighbors, Trierweiler, Ford, & Muroff, 2003). Mackin, Targum, Kalili, Rom, Young et al. (2006) suggested cultural bias in the interpretation of manic symptoms in their study of clinician ratings of patients with bipolar disorder using the Young Mania Rating Scale (YMRS). There were significant differences in mean ratings on 10 out of 11 items of YMRS, particularly on items pertaining to mood elevation, irritability, thought content, and disruptive-aggressive behavior. In general Indian clinicians rated patients as more ill than American clinicians and UK clinicians saw them as less bipolar than American clinicians. Clinicians might be using their own cultural frame of reference and not interpreting youth behavior in the context of the youths' cultural norms, which may lead to misdiagnosis (Minsky et al., 2006). It is important to note that misdiagnosis by mental health professionals due to cultural biases or stereotypes may over or under-estimate pathology and impairment, as diagnostic assessment errors in either direction create unique yet equally problematic challenges. This may help to explain why African American and Native Hawaiian youth were more frequently diagnosed with disruptive behavior disorders (Nguyen et al., 2007), given that clinician's own cultural frame of reference may over interpret behaviors as problematic which could thereby lead to misdiagnosis and higher rates of reported disorders among certain racial/ethnic groups (Nguyen et al., 2007).

What are the Possible Cultural Factors that Contribute to Misdiagnosis?

Conceptualization of Mental Illness—Although there are challenges to diagnoses and evidence of misdiagnosis that are common to all youth, the chances of misdiagnosis may be exacerbated among racial/ethnic minority youth due to cultural factors that may be more relevant in minority populations. Cultural factors and processes that may play a crucial role in contributing to misdiagnosis among racial/ethnic minority youth, including cultural variations in conceptualization of mental illness, and differences in the experience, expression, reporting of psychopathology.

Illness versus disease model—Kleinman, Eisenberg, and Good (1978) proposed differences between the explanatory models of patients and those of clinicians. Patients' explanatory models are based on their experience of illness and the negative impact on their physical and psychosocial function. Illness is socially and culturally constructed because the

labeling, perception, meaning, consequences, and communication of illness are dependent upon sociocultural beliefs about illness. Thus, patients' explanatory models would focus less on pathology, but more about the causes of their illness (e.g. uncomfortable bodily sensations), why they started when they did, others' (e.g. family and friends) reactions and conceptualization of them feeling "ill", and the functional impact of the illness. In contrast, Kleinman and colleagues (1978) suggest that clinicians' explanatory models are based on the concept of disease (abnormalities or malfunctioning of psychological processes or symptoms) and emphasize searching for a cure instead of healing or simply managing the illness. Like patients' explanatory models, clinicians' models are also culturally influenced, most likely by the biomedical approach to pathology. Focusing on disease and symptoms neglects the sociocultural factors that make up the illness experience of patients. Without understanding the sociocultural context in which the symptoms occur, it can be difficult to accurately identify the etiology of the illness and understand what may be maintaining it. This may therefore lead to inaccurate assessment of patient's problems, resulting in misdiagnosis.

Holistic view versus duality of mind and body—There is a general consensus among scholars that some cultures may endorse a more holistic view of psychopathology (non-separation of mind, body, and spirit) whereas other views of mental illness may endorse the duality of mind and body (Kung & Lu, 2008). Factor analysis of a depression scale found that Chinese Americans tend to not differentiate between somatic symptoms and psychological distress symptoms (Ying, 1988). Furthermore, individuals view psychopathology as a result of physiological causes, they are less likely to endorse mental or emotional causes (Kung, 2001). Chinese American adults who were diagnosed with anxiety or depressive disorders were less likely to seek professional help while those who somaticized their distress were more likely to seek help. This suggests that they perceive physiological symptoms of psychological distress to be mental illness. In addition, somatic complaints may be more culturally acceptable than psychological distress (Kung & Lu, 2008). As such, individuals are less likely to identify mental illness because when the body is thought to mediate the relationship between internal emotional psychological processes and the social environment (Kleinman & Kleinman, 1991).

Individualism and collectivism—Psychopathology can also be conceptualized along cultural dimensions of self-construal, particularly individualism and collectivism. Persons from Western cultures tend to place emphasis on the self and autonomy whereas non-Western cultures emphasize more interconnectedness with others, such as family (Triandis, 1995). In individualistic cultures, the etiology, experience, and expression of psychopathology have more to do with the self (e.g. "I feel sad"). In collectivistic cultures, the mental illness experience may involve the perceptions and evaluations of others in their social environment and its impact on others. Parents' cultural values and rearing practices may influence the experience and expression of their child's emotions and behavior. For example, the values of *chaio shun* (teaching children culturally appropriate behavior) and *guan* (caring, concern, control) are central to Chinese parenting and emphasize pro-social behavior, relational sensitivity, awareness, and responsibility. Thus, Chinese American children's behaviors and psychological symptoms may be shaped by what is acceptable or

discouraged within their cultural context, which may influence symptom presentation and diagnoses that reflect those symptoms.

These models of variations in the conceptualization of mental illness can be applied as overarching themes in the following discussion of specific sources for misdiagnosis of youth psychopathology.

Cultural Influences on the Experience and Expression of Mental Illness

Distress thresholds—Some researchers have suggested that culture and ethnicity may play a role in whether individuals perceive certain problems to be mental health related or pathological in the first place (Fabrega et al., 1993; Sue, 1994). It is probable that cultural factors may underlie ethnic differences in problem recognition, conceptualization and severity (Cauce et al., 2002; Lecrubier, 2001). There may be different “distress thresholds” in problem detection or variations in what are considered undesirable, intolerable, or abnormal (Cantwell, Lewinsohn, Rohde, & Seeley, 1997; Jensen & Watanabe, 1999; Weisz & Weiss, 1991). For instance, minority parents are more likely to identify their child’s emotional/behavioral problems as non-mental health related than non-Hispanic White parents, not identify them as problems at all (USDHHS, 2001), or believe they will improve with time (Weisz, Suwanlert, Chaiyasit, Weiss, Walter et al., 1988). Along similar lines, when Lau et al. (2004) found that non-Hispanic White (NHW) parents reported more internalizing and externalizing problems than their children as compared to racial/ethnic minority parents (Asian Pacific Islander, African American, Hispanic), the authors suggested that their findings may indicate that non-Hispanic White parents have a lower threshold for youth emotional and behavioral problems, non-Hispanic White parents are more aware of their child’s psychopathology because they are better educated about various disorders and their symptoms, or that their conceptualization of mental health is more aligned with Western views of mental health as compared to racial/ethnic minority parents. In comparison to non-Hispanic White parents, African American, Asian American, and Native Hawaiian parents reported fewer internalizing behavior problems (Nguyen et al., 2007). It is possible that parents from non-Western cultures teach and expect harmony and humility within the group and therefore are less tolerant of disruptive behaviors that draw attention to the self (Markus & Kitayama, 1991). Likewise, the detection rate (sensitivity) of their child’s externalizing behaviors was higher among Western parents than among non-Western parents in the Netherlands (Zwirs, Burger, Schulpen, & Buitelaar, 2006). Caribbean Latina mothers of young children with disruptive behavior disorders interpreted hyperactive and restless behavior, but not children’s fears, as indications of anxiety (Arcia, Castillo, & Fernandez, 2004). Furthermore, in minority families, parents are often under more burden and stress, and therefore, less likely to notice distress, anger, frustration, and hopelessness in their children (Brannan, Heflinger, & Bickman, 1997). These factors may be problematic because families may be less likely to seek services in the mental health sector if they do not believe their child’s emotional/behavioral problems are mental health related (Cauce et al., 2002).

The help-seeking literature may also provide some insight into what parents consider to be severe or pathological enough to warrant treatment. Some parents perceive ADHD behaviors as part of normal development and thus do not believe they warrant treatment (Maniadaki,

Sonuga-Barke, Kakouros, & Karaba, 2006). In a help-seeking Puerto Rican community sample, parents were more likely to seek therapy for their children's mental health problems if one of the three conditions were met—impairment of the child, parental burden, or school problems. However, a child meeting criteria for a psychiatric diagnosis alone did not necessarily compel parents to use services (Alegria, Canino, Lai, Ramirez, Chavez et al., 2004). It is possible that fewer Hispanic adolescents have psychiatric diagnoses because they are not seeking care for their mental health problems, particularly psychosis, primarily due to stigmatization (Leal, 2005). This could mean that when they do seek help, their problems may be so severe that their symptoms first present as psychosis or disruptive behavior disorder, even though the underlying problems may be depression or anxiety.

In fact, research has shown that ethnic minorities do not seek mental health treatment until problems are severe (Burns et al., 2004; Crane, Ngai, Larson, & Hafen, 2005; Garland, Landsverk, & Lau, 2003). Thus, cultural differences in what parents perceive to be emotional or behavioral problems as well as the severity of those problems may lead to misdiagnoses or misinterpretation of symptoms.

Racial/ethnic differences in symptomatology and functioning—Several studies have shown that the experience of mental illness may vary across racial/ethnic groups. Hispanic females

Expression and reporting of mental illness—The variability in the experience of illness may imply that there may be cultural differences in the expression of illness as well. Culture may play a role in what emotions or behaviors are sanctioned or discouraged. It is suggested that the level of stigmatization of symptoms or syndromes may dictate how mental health problems are expressed (Krueger, Chentsova-Dutton, Markon, Goldberg, & Ormel, 2003). For instance, Japanese Americans reported lower levels of positive affect than European Americans (Kanawaza et al., 2007). The researchers purport that these results could be explained by the Japanese American's collectivistic self-construal that encourages the inhibition of positive affect in order to maintain group harmony. In an epidemiological study of mental health of children in Puerto Rico, 9% of children in the community sample and 26% of children in the clinical sample had a reported history of an *ataques de nervios*, a culture bound syndrome in Hispanic cultures with symptoms similar to panic attack (Guarnaccia, Martinez, Ramirez, & Canino, 2005). This may suggest that even though Puerto Rico is largely influenced by American culture, cultural syndromes such as *ataque de nervios* are prevalent in Puerto Rican children and may not only be an acceptable form of expressing emotional distress but is possibly encouraged or expected (e.g. as a way of displaying caring) (Guarnaccia et al., 2005; Oquendo, 1994).

Additionally, studies have found that non-Western individuals and ethnic minorities living in Western societies experience and express distress through somatic symptoms more than European Americans (Kirmayer & Young, 1998; Uba, 1994). In a study examining anxiety reporting, Mexican and Mexican American children reported more physiological symptoms relative to European American children (Varela, Vernberg, Sanchez-Sosa, Riveros, Mitchell et al., 2004). The investigators suggest that it may be due to cultural processes such as Mexican parents being more likely than European American parents to interpret ambiguous

symptoms as somatic and non-anxious (Varela et al., 2004). Thus, parental perceptions of problems could shape how their children's experiences are expressed. For a sample of Mexican American adolescent girls, cultural affiliation interacted with self-esteem when predicting internalizing symptoms (McDonald, McCabe, Yeh, Lau, Garland et al., 2005). Studies of minority women's expression of depression tend to have a pattern of somatization, a greater link between their psychological symptoms and their health problems, spirituality, and use of idioms of distress, such as the Korean *hwa-byung*, to represent bodily distress and interpersonal or social problems (Brown, Abe-Kim, & Barrio, 2003; Kirmayer, 2001; Lin, Lau, Yamamoto, Zheng, Kim et al., 1992; Pang, 1990). In sum, the cultural context may dictate which emotions and behaviors are acceptable and how they may be expressed.

Discussion

The purpose of this review is to consolidate literature on racial/ethnic disparities on diagnoses of youth mental health problems and analyze whether there is enough conclusive evidence to warrant misdiagnoses. In addition, a discussion of processes and cultural factors that may contribute to misdiagnosis was presented. Overall, the literature seems to suggest the possibility of misdiagnosis of ethnic minority youth's emotional and behavioral problems. However, not enough evidence is available to parse out racial/ethnic differences due to true differences in psychopathology compared to misdiagnoses because of bias or inaccurate diagnoses. Furthermore, a variety of cultural factors may help to explain why there might be misdiagnosis - from broad themes in different models and expressions of mental illness to the limitations of diagnostic and assessment procedures to the incongruence among multiple informants. Although some progress has been made to better understand how culture may impact diagnoses, more effort and research is needed in this field to address the issue of misdiagnosis. Additionally, in the conduct of this review, we noted that the majority of the studies included in the review were published before 1967 or after 1990. The dearth of literature available on this topic between 1967 and 1990 may have been a reflection of the field of psychological research of those times. After 1990, there began a surge of interest in the field of racial/ethnic minority research, possibly related to the Surgeon General's Report on racial/ethnic disparities in health and mental health care. This likely increased research funding and interest in this field, creating a greater availability of studies in the late 1990's and 2000's. In more recent years, the number of papers and book chapters on this topic has once again diminished. Thus, we believe that this review is timely for continuing to maintain current awareness of diagnostic issues for racial/ethnic minority youth in the mental health field.

Discrepancies in Perceptions

In order to bridge the differences in diagnoses and perceptions of mental illness between youth, parent, and therapist, training of clinicians should include greater emphasis on cultural competence and taking an ecological approach to understanding psychopathology. This also includes training on methods to improve assessment specificity, sensitivity, reliability, and validity as highlighted in the work by Kirk (2004) on ways to improve accurate diagnoses in youth psychopathology. Previous literature has proposed various

means for increasing the cultural competence of mental health services. These strategies include treatment that takes into account the client's cultural values, traditions, expectations for positive change, and expectations of the counseling experience; awareness of cultural differences in the manifestation of disorders; culture-specific parallel programs; scientific mindedness (forming and testing hypotheses instead of making assumptions about clients); dynamic sizing (appropriately generalizing and individualizing); and culture-specific expertise (having specific knowledge of and skills to work with different cultural groups) (Fischer, Jome, & Atkinson, 1998; Pope-Davis, Liu, Toporek, & Brittan-Powell, 2001; Sue, Fujino, Hu, Li, Takeuchi et al., 1991; Sue, 1998; Takeuchi, Mokuau, & Chun, 1992). In addition, some researchers have argued for bridging patient-provider worldviews, including explanatory models (i.e. beliefs about causes of problems, reasons for symptom onset, pathophysiology, course of illness, and treatment goals) or client-therapist cognitive match on problem perception and treatment goals (Lewis-Fernandez & Diaz, 2002; Zane, Sue, Chang, Huang, Huang et al., 2005). Thus, clinicians can be further trained on how to bring together the perspectives from different stakeholders in treatment and view psychopathology through the lenses of parent and child as well as helping them understand the clinician's point of view. This would help clinicians to better distinguish true psychopathology from symptoms or disorders that may seem problematic but are actually normal, expected, or benign within the cultural context of the youth and/or parent. These approaches to bridging the perspectives of youth, parent, and therapist may lead to greater consensus on diagnoses.

Since parents play an important role in psychotherapy for youth, a successful outcome of this training would be that clinicians and parents would be able to work collaboratively and agree on diagnoses, thereby fostering more parental engagement and involvement in treatment (Lewis-Fernandez & Diaz, 2002). Parental involvement has been found to be associated with positive treatment outcomes in youth psychotherapy (Budd, Madison, Itzkowitz, & George, 1986; Charlop-Christy & Carpenter, 2000; Harrison, McKay, & Bannon, 2004; McKay, Pennington, Lynn, & McCadam, 2001; Short, 1984). Furthermore, if parents and youth are more engaged, there may be increased likelihood that there will be greater treatment retention and satisfaction with treatment. In general, training in cultural competency would lead to a greater accuracy of diagnoses and more appropriate treatment for youth.

Explanatory Models

As suggested by the literature reviewed, it is necessary to consider variations in the expression and experience of mental illness or symptoms (Yeh et al., 2002) so that diagnoses reflect the diversity and variation in symptom presentation and manifestation of illnesses. Taking into account the possibility that racial/ethnic minority parents may perceive, assess, and report their child's problems in ways different from how clinicians interpret symptoms may encourage clinicians to employ more cultural sensitivity when making diagnoses. Increasing parent-therapist agreement on the child's problems may result in greater consensus on the expectations, goals, and course of treatment for the child, and increased parental engagement, which may then lead to better treatment outcomes and reduced likelihood for dropout (Acosta, Yamamoto, Evans, & Skilbeck, 1983; Brown et al., 2003; Kleinman, Eisenberg, & Good, 1978; Lewis-Fernandez & Diaz, 2002; Kupst & Shulman,

1979; Minnis, Kelly, Bradby, Oglethorpe, Raine et al., 2003; Morrissey-Kane & Prinz, 1999).

In order to increase parent-therapist agreement on youth problems, some researchers have argued for bridging patient-provider worldviews, including explanatory models (i.e. beliefs about causes of problems, reasons for symptom onset, pathophysiology, course of illness, and treatment goals) or client-therapist cognitive match on problem perception and treatment goals (Lewis-Fernandez & Diaz, 2002; Zane et al., 2005). Kleinman et al. (1978) suggested eliciting clients' socially and culturally constructed experience of illness and its functional impact to identifying the symptoms that are most salient to their experience of the illness. This could improve understanding of the disorder from the client's point of view. In youth psychotherapy, parents are part of the child's social world and play an important role in recognizing youth problems and determining whether they constitute mental illness (Weisz, McCarty, Eastman et al., 1997). Involving racial/ethnic minority parents in their child's treatment would provide the clinician the opportunity to understand the parents' explanatory models about their child's emotional or behavioral problems. This may help to provide a socio-cultural context in which to interpret the child's psychopathology and reduce the likelihood of clinician bias and misdiagnosis. Involving parents in treatment by understanding their explanatory models can better improve quality and accuracy of diagnosis, assessment, and treatment.

Suggestions for Future Research

As stated earlier, most of the studies on racial/ethnic disparities in diagnoses do not adequately disentangle true differences from misdiagnosis (underdiagnosis, overdiagnosis, miscategorization) and various forms of bias (e.g., cultural bias of assessment measures). Furthermore, it is recommended that future research be more consistent in controlling for and examining other variables that may influence racial/ethnic differences in diagnosis, such as acculturation, immigrant and refugee status, the racial/ethnic breakdown of the patient's social environment, SES, treatment milieu, and billing issues. Similar to race/ethnicity, acculturation may influence the experience and expression of psychopathology and can account for some of the heterogeneity within various ethnic groups (Uba, 1994). Intra-group factors such as immigration and refugee status, trauma experience, and acculturative stress may impact symptom experience, expression, and diagnosis (Furnham & Malik, 1994; Mallinckrodt, Shiegoka, & Suzuki, 2005; Oppedal, Roysamb, & Heyerdahl, 2005; Phan & Silove, 1997; Stevens & Vollebergh, 2008; Titzmann, Raabe, & Silbereisen, 2008; Uehara, Takeuchi, & Smukler, 1994). Compared to Mexican American and Puerto Rican mothers, Mexican mothers, assumed to be less acculturated, were less likely to perceive ADHD behaviors as normal (Schmitz & Velez, 2003). Acculturative stress (distress resulting from the process of acculturation) is more consistently associated with youth psychiatric symptoms than acculturation itself after controlling for nativity, maternal education, child gender, stressful life events and parental psychopathology (Duarte, Bird, Shrout, Wu, Lewis-Fernandez et al., 2008). Although some studies did not find an association between SES and psychiatric diagnoses of minority youth (Roberts et al., 2006; Zwirs et al., 2007), others argue that the effects of SES often overlap with race/ethnicity and should be parceled out during analyses (Kendall & Hatton, 2002; Mash & Dozois, 2003). Treatment milieu may

also impact diagnoses as Kaizar, Chisholm, Seltman, Greenhouse, & Kelleher (2006), after controlling for race and sociodemographics, found that children who visited hospital-based clinics were more likely to receive diagnoses of depression than those who visited office-based providers and low income children were twice as likely to visit hospitals than office-based clinics for mental health care. Reimbursement and billing procedures are also important to consider because clinicians may assign diagnoses not necessarily based on diagnostic criteria but to meet needs for financing of services (Minsky et al., 2006). Due to some evidence of lack of measurement equivalence of assessment measures, more research is needed to develop measures that reduce cultural bias in the assessment of youth psychopathology, or that have cross-cultural validity and are able to detect psychopathology constructs of interest across cultures (Anderson & Mayes, 2010). Finally, diagnostic procedures in treatment are usually continual and dynamic processes and treatment disparities may also impact the assessment process. Thus, it would be interesting to examine diagnoses longitudinally to see whether diagnoses change over time, how, and why.

There is a clear need for cultural sensitivity in order to accurately assess, diagnose, and treat ethnic/minority youth. Research studies should consider race and ethnicity as crucial factors when designing studies and should make greater efforts to recruit from underrepresented populations (Anderson & Mayes, 2010). Moreover, longitudinal epidemiological research should do utilize valid, cross-culturally sensitive measures to assess prevalence rates across a variety of research and clinic settings throughout both rural and urban areas, though this may likely be confounded based on who presents for treatment, endorses psychopathology symptoms, and even who agrees to participate in a research study. Although the field has called for additional research in understanding disparities in internalizing disorders among racial and ethnic minority youth (Anderson & Mayes, 2010), minimal progress has been achieved in the five year interim. As future research becomes available, it will become clearer whether the differences found across ethnic/racial groups are genuine differences in diagnosis prevalence, or the consequences of misdiagnosis.

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