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Racial Differences in the Impact of Adolescent Depression on Families in TADS

ALFIEE M. BRELAND-NOBLE
Georgetown University Medical Center, ab2892@georgetown.edu

Camelia A. Harb
Georgetown University Medical Center, cah261@georgetown.edu

Kepher H. Makambi
Georgetown University, khm33@georgetown.edu

Michele J. Wong
University of California, Los Angeles, michelewong.j@gmail.com

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Cover Page Footnote

Additional authors who contributed to this report are members of the Treatment for Adolescents with Depression Study (TADS) Team. TADS was coordinated by the Department of Psychiatry and Behavioral Sciences and the Duke Clinical Research Institute at Duke University Medical Center in collaboration with the National Institute of Mental Health (NIMH), Rockville, Maryland. The Coordinating Center principal collaborators were John March, Susan Silva, Stephen Petrycki, John Curry, Karen Wells, John Fairbank, Barbara Burns, Marisa Domino, and Steven McNulty. The NIMH principal collaborators are Benedetto Vitiello and Joanne Severe. Principal Investigators and Co-investigators from the thirteen sites were: Carolinas Medical Center: Charles Casat, Jeanette Kolker; Case Western Reserve University: Norah Feeny, Robert Findling, Sheridan Stull, Susan Baab; Children’s Hospital of Philadelphia: Elizabeth Weller, Michele Robins, Ronald Weller, Naushad Jessani; Columbia University: Bruce Waslick, Michael Sweeney, Lisa Kentgen, Rachel Kandel; Johns Hopkins University: John Walkup, Golda Ginsburg, Elizabeth Kastelik, Hyung Koo; University of Nebraska: Christopher Kratochvil, Diane May, Randy LaGrone, Martin Harrington; New York University: Anne Marie Albano, Glenn Hirsch, Tracey Knibbs, Emlyn Capili; Northwestern University: Mark Reinecke, Bennett Leventhal, Catherine Nageotte, Gregory Rogers; University of Cincinnati: Sanjeev Pathak, Floyd Sallee, Elizabeth Cottingham, Jennifer Wells; University of Oregon: Paul Rohde, Anne Simons, James Grimm, Katholiki Hadjiyannakis; University of Texas, Southwestern: Graham Emslie, Beth Kennard, Carroll Hughes, Maryse Ruberu; Wayne State University, Nili Benazon, David Rosenberg, Michael Butkus, Marla Bartoi.

Abstract

This manuscript examines racial differences in the impact of adolescent depression between White, African American, and Latino families. Findings are from the *Treatment for Adolescents with Depression Study* (TADS), a multi-site clinical research study evaluating the efficacy of CBT and Fluoxetine for treating adolescents with major depressive disorder. Primary caretakers of 439 adolescents with depression were interviewed. Results demonstrated that compared to White families, African American and Latino families were more likely to report increased feelings of tiredness or anergia ($p<.05$) and more physical health problems ($p<.01$) associated with caring for a depressed teen. The conclusion suggests the need for a better understanding of depression in people and families of color and offers recommendations for further research.

Keywords: race, adolescent depression, family impact, TADS

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Introduction

Depression is a pervasive and costly mental health concern for individuals, families, caregivers, and society (Costello, Swendsen, Rose, & Dierker, 2008; Lynch & Clarke, 2006; Patton et al., 2014; Thapar, Collishaw, Pine, & Thapar, 2012). The World Health Organization (WHO) classifies depression as a priority condition. It is the fourth leading contributor to the global burden of disease (ahead of cancer and cardiovascular disease), affecting more than 350 million people worldwide through decreased quality of life (WHO, 2012). Prevalence rates for major depressive disorder are estimated at 11% in adolescence (Center for Behavioral Health Survey Quality, 2015; Substance Abuse and Mental Health Services Administration, 2014). Additionally, these rates are associated with negative long-term functional and psychiatric outcomes, including impairment in school, work, interpersonal relationships, physical health, and overall quality of life (Brook, Stimmel, Zhang, & Brook, 2008; Chan, Kelly, & Toumbourou, 2013; Gladstone, Beardslee, & O'Connor, 2011; Horwood et al., 2010; Kelly, Chan, Mason, & Williams, 2015; Thapar et al., 2012; Vitiello et al., 2011).

Depression Across Racial Groups

Research examining racial differences in prevalence rates of depression are often equivocal, with some studies reporting higher rates of depression among non-White youth (Moon & Rao, 2010; Van Voorhees et al., 2008) and others indicating greater rates among White youth (Saluja et al., 2004). However, research has also demonstrated that after controlling for socioeconomic indicators, no differences exist in the prevalence of depressive symptoms or affective disorders across racial groups (Doi, Roberts, Takeuchi, & Suzuki, 2001; Rushton, Forcier, & Schectman, 2002). Nonetheless, among youth of color, Latino youth are reported to have the highest rates of depression, with the exception of American Indian youth, as well as the highest rates of suicidal ideation, plans, and attempts (Kann et al., 2014; National Center for Health Statistics, 2012; Saluja et al., 2004).

Regardless of prevalence rates, the development and expression of depressive symptoms is greatly heterogeneous across races (Costello et al., 2008). Studies examining the chronic and recurring course of depression have demonstrated that only one third of adolescents achieve remission after receiving combined treatments of antidepressants and Cognitive Behavioral Therapy (Curry et al., 2011; Kennard et al., 2006). Furthermore, evidence illustrates that those diagnosed in their early adolescent years go on to experience more severe symptoms as adults (Barksdale et al., 2010; Merikangas et al., 2010).

Despite research highlighting adolescence as a critical developmental period for identifying high-risk individuals and preventing the incidence of depressive illness, the majority of adolescents with major depressive disorder do not receive disorder-specific treatment (Avenevoli, Swendsen, He, Burstein, & Merikangas, 2015). Although efficacious treatments are available, an examination of behavioral health treatment in primary care settings found that of the 50% of adolescents in primary care settings who screened positive for a mental health concern and were referred for mental health services, 33% refused the referral and fewer than 20% of those with a positive screen received any type of follow up from a medical professional (Hacker et al., 2014). Additionally, these trajectories for treatment referral and utilization vary greatly across racial/ethnic groups (Costello et al., 2008), with the greatest discrepancies found among youth of color (Avenevoli et al., 2015; Olfson, Gameroff, Marcus, & Waslick, 2003).

Overall, White youth are more likely to receive “appropriate” diagnoses for their presenting symptoms compared to youth of color who often receive diagnoses for conduct and behavior disorders (Breland-Noble, 2016; Mak & Rosenblatt, 2002; Nguyen, Huang, Arganza, & Liao, 2007; Yeh et al., 2002). Nguyen et al. (2007) found that youth of color (i.e., Black, Latino, Asian, and Native Hawaiian) were less likely to receive similar diagnoses compared to their White peers, with race and ethnicity having a significant effect on the diagnosis given. As an example, the authors note that Black and Native Hawaiian youth were more likely than White youth to receive a diagnosis for a disruptive behavioral disorder. Latino and Native Hawaiian youth were also less likely than White youth to be diagnosed with depression or dysthymia (Nguyen et al., 2007).

Impact of Adolescent Depression

Youth of color also face disparities, compared with their White peers, in the burden experienced as a result of mental illness and in treatment received for depression (Breland-Noble, 2004; Breland-Noble, Bell, Burriss, & AAKOMA Project Adult Advisory Board, 2011; U.S. Department of Health and Human Services, 2001). Not only are youth of color significantly less likely to receive appropriate diagnoses and treatment referrals for depression compared to their White peers, but they are also less likely to have equal access to prescription medications, treatments from mental health specialists or medical providers, and mental health treatments in an outpatient setting (Alegria, Vallas, & Pumariega, 2010; Alexandre, Martins, & Richard, 2009; Costello, He, Sampson, Kessler, & Merikangas, 2014; Cummings, Ponce, & Mays, 2010; Cummings, Wen, & Druss, 2011; Garland et al., 2005; Nguyen et al., 2007; Olfson et al., 2003; Wu et al., 2001). Furthermore, in juvenile delinquency cases, African American youth are less likely to be referred to mental health related services compared to White youth in cases where mental health issues are highlighted (Breda, 2003; Dannerbeck & Jiahui, 2009).

Concerning the impact of adolescent depression on families, research suggests that adolescent depression can significantly impact family relationships and interpersonal harmony (Tan & Rey, 2005). In particular, a positive correlation is noted between reported intensity of adolescent depressed mood and levels of family conflict and parental rejection (Kelly et al., 2016). This finding supports other longitudinal research on young adolescent samples showing a reciprocal relationship between marital conflict and adolescent depressed mood (Cui et al., 2007) and the association between mothers' anger and subsequent adolescent internalizing behaviors (Hofer et al., 2013).

The development of a family member's depressive symptoms also increases the likelihood of intra-familial interpersonal conflict, which is implicated in the bidirectional relationship between family climate and depressive symptoms (Garber & Cole, 2010; Hammen, 2006; Hammen, 2009). Parenting stress and distress increase in response to child behavior problems and the demands of mental illness care (Gross, Shaw, & Moilanen, 2008a), which in turn influence the parenting context. This can include stressful life events, social support, and relationship tension (Cui, Donnellan, & Conger, 2007; Östberg, Hagekull, & Hagelin, 2007). These effects may be particularly prominent during periods of developmental stress or transition (Gross, Shaw, Moilanen, Dishion, & Wilson, 2008b), and consequently, adolescence may be a period of particular vulnerability for already stressed families (Gross et al., 2009).

Research indicates that a caregiver's ability to identify depression in a child or adolescent impacts the relationship between illness severity and family function. Unfortunately, identification of an internalizing illness like depression can be impeded by poor adolescent–parent communication, parental depression, or coexisting psychiatric or substance abuse disorders in the adolescent (Breland-Noble & Weller, 2012). According to the National Survey of Children's Health (Blanchard, Gurka, & Blackman, 2006), parents of adolescents with emotional problems generally report less emotional closeness and less ability to cope with the demands of parenthood as compared with parents of children without problems. Taken together, these findings provide evidence for the bidirectional effects of adolescent depressive symptoms on parenting.

However, there is a dearth of literature surrounding the discussion of the impacts of adolescent depressive symptoms on families of color. In communities of color, caring for a loved one with a mental illness has been reported as physically and mentally exhausting and as a time-consuming undertaking with significant impacts on caregivers and families (Breland-Noble, Al-Mateen, & Singh). Among participant samples of East Asian, South Asian, and Southeast Asian descent, caregiving for a family member with a mental illness has been shown to affect a family's socioeconomic status, daily routines, family and extended family relationships, physical mobility and, as might be expected, the use of mental health services and other health services (Chang et al., 2016; Wong, Lam, Chan, & Chan, 2012). Cultural stigmas associated with mental illness, combined with cultural norms pertaining to responsibility for care in the home and community, may also impede the development of supportive services (Kokanovic, Petersen, & Klimidis, 2006).

Current Study Aims and Hypotheses

This study seeks to fill this gap in the literature on the impacts of adolescent depression within non-White families by examining and describing the bidirectional impacts of adolescent depression on parenting, interpersonal relationships, and psychological well-being. Using data from the National Institute of Mental Health (NIMH) funded *Treatment for Adolescents with Depression Study* (TADS Team, 2003; 2005b), authors present findings that describe the impact of living with a depressed adolescent on diverse families prior to the initiation of study treatment in the TADS. The *Treatment for Adolescents with Depression Study* (TADS) was a multi-site clinical research study examining the short- and long-term effectiveness of psychotherapy and an antidepressant medication (Fluoxetine), alone and in combination, for treating depression in adolescents ages 12 to 17 across thirteen academic and community clinics. The baseline and end of treatment results are published elsewhere (March et al., 2004; March et al., 2007; TADS Team, 2003; 2005a; 2005b).

Based on the current literature on adolescent depression and its impact on families, it was expected that certain contextual factors including family ethnicity, severity of depression symptoms, and socioeconomic indicators (e.g. income) were associated with levels of perceived impact. Furthermore, given that White families are more likely to recognize the signs of depression and receive congruent diagnoses and appropriate treatment referrals (Alegría et al., 2015; Nguyen et al., 2007), it was hypothesized that White families in this sample would report a greater impact of adolescent depression compared to African American and Latino families (i.e., as a result of greater awareness of the illness).

Method

Design

In brief, TADS was a randomized, multicenter clinical trial across 13 U.S. based academic and community sites designed to evaluate the efficacy of receiving 12-weeks of: (1) Cognitive-Behavioral Therapy (CBT) alone; (2) Fluoxetine alone; or (3) CBT with Fluoxetine, for treating adolescents (ages 12 to 17 years) with major depressive disorder (MDD). A fourth placebo group was also included. Assessments were completed at baseline, week 6, and week 12. Detailed descriptions of the rationale, design, methods, and sample characteristics are published separately (TADS Team, 2003; 2005a; 2005b). For the purpose of this manuscript, data collected at baseline was used to evaluate the proposed hypotheses.

Participants

The mean age at baseline of the 439 adolescent participants was 14.6 years (*SD*=1.5). The sample was 54.4% female and 73.8% White (see Table 1). The majority (98%) of participants were moderately to severely depressed at the time of randomization, with a mean *Child Depression Rating Scale-Revised* (CDRS-R) raw score of 60.14 (*SD*=10.26; TADS Team, 2005).

Table 1: Participant Demographics by Race

	Race		
	Non-white (n=115)	White (n=324)	Total sample (n=439)
Gender*			
Male	54 (47.0%)	146 (45.1%)	200 (46%)
Female	61 (53.0%)	178 (54.9%)	239 (54%)
Age (years)**	14.62	14.61	14.62
Depression (mean, SD)***	60.21 (9.96)	60.06 (10.55)	60.14 (10.26)

*Gender: n (%)
**Mean age reported
***Raw scores on the Children’s Depression Rating Scale-Revised *m*(SD)

Protocol and procedures were approved by local Institutional Review Boards. Written parental consent and participant assent were obtained for all participants. The study also utilized a certificate of confidentiality related to patient participation, data collection, and storage.

Measures

A variety of measures were used at baseline prior to randomization to an assigned treatment. The complete description of all measures used in the original TADS study can be found elsewhere (TADS Team, 2003; 2005a; 2005b); for the purpose of this manuscript, this section will only describe assessments included in analyses. All adolescent assessment measures chosen for this analysis have been used previously with African Americans and other youth of color (Angold, 1989; Angold et al., 2002; Deas-Nesmith, Campbell, & Brady, 1998; Kaufman et al., 1997; Morrison, Goli, Van Wagoner, Brown, & Khan, 2002; Poznanski & Mokros, 1996).

Demographics. Demographic information was gathered at time of consent and included adolescent age, maternal age, ethnicity, number of caregivers in the home, and maternal education. For caregiver variables, maternal information was used since it provided the most non-missing values (maternal age, n=374 [95.9%]; maternal education, *n*=378 [96.9%]). Number of caregivers in the home was divided into two categories: one or more than one. Ethnic categories used for this analysis include Caucasian, African American, Latino, and Other.

Family impact. The *Child and Adolescent Impact Assessment* (CAIA; Angold, Patrick, Burns, & Costello, 1996), is a structured parent interview that assesses the perception of impact experienced by a caregiver of a child suffering from mental health illnesses and/or substance abuse. The CAIA is administered by trained assessors and completed with the caregiver(s) present at the baseline visit. Assessment items on the CAIA assess the impact of the adolescent's depression on the family across various areas such as income, familial and nonfamilial relationships, and personal and social activities. Items also assess levels of stigma, attributions about the cause of the depression, and psychological adjustment and well-being in response to a child's depression. In the current sample, the coefficient alpha for the scale was 0.88.

Depression severity and impairment. Independent Evaluators also completed two measures of adolescent depression, the *Clinical Global Impression–Severity Scale* (CGI-S; Guy, 1976) and the *Children's Depression Rating Scale* - *Revised* (CDRS-R; Poznanski & Mokros, 1996). The CGI-S is a 7-point clinician rating of depression severity. Inter-rater reliability for the

CGI-S at baseline in TADS was acceptable with an ICC of 0.79. The CDRS-R is a 17-item clinician-rated measure of depression severity with each item rated on a scale of one to five or one to seven. Inter-rater reliability on the CDRS-R at TADS baseline was high (*ICC*=0 .95). The raw total scores for the CDRS-R and CGI-S used in this analysis were based on the synthesis of information from interviews with the adolescent and the parent and referenced the week prior to the baseline assessment time.

Overall functioning. The adolescent's overall functioning was assessed by the Independent Evaluator using the *Children's Global Assessment Scale* (CGAS; Shaffer et al., 1983), a 100-point scale measuring overall functioning in the past week. The CGAS has good inter-rater reliability (*ICC*=0.84) and good to excellent test–retest reliability (*ICC*=0.69 – 0.95).

***Depression*.** Caregivers completed the *Beck Depression Inventory-II* (BDI-II; Beck, Steer, & Brown, 1996), which assesses depressive symptoms over the prior week. The BDI-II (Beck et al., 1996) has high internal consistency (α = .92), test-retest reliability (r = .93), and correlates highly with clinician ratings of depression. If both caregivers completed the BDI-II, the mother's report was used for analysis as mothers represented the majority of respondents (87%).

Data Analysis

Descriptive statistics were calculated to summarize participant demographics by race, including age, gender, ethnicity, and severity of depression as measured by the CDRS-R (see Table 1). Frequencies and percentages were provided in the table to summarize categorical data while means and standard deviations were provided to summarize continuous variables. Results were categorized and presented as two racial groups: 1) Youth of Color (African-American, Latino, and Other) and 2) White.

Thirty-two family and adolescent demographic and clinical characteristics were examined to determine possible predictors of family impact. Variables examined in this analysis included baseline adolescent, caregiver, and family demographic and clinical characteristics. Adolescent variables examined included age (Brannan & Heflinger, 2006), gender, depression severity (Angold et al., 1998), substance use (Brannan & Heflinger, 2006), overall functioning, psychiatric comorbidities, and service use (Angold et al., 1998; Brannan & Heflinger, 2006; Sayal, 2004). Caregiver and family variables examined were ethnicity (Coon et al., 2004; McCabe, Yeh, Lau, Garland, & Hough, 2003; White, Townsend, & Stephens, 2000), caregiver education level (Brannan & Heflinger, 2006), and family income (Montoro-Rodriguez, Kosloski, & Montgomery, 2003).

Analysis examined correlational relationships between depression prevalence, impact of depression, and racial group. Independent t-tests examining differences between racial groups on depression prevalence and impact of depression on the family were also run. Linear regression was used to further evaluate the role of race in the cumulative impact of adolescent depression on the family. Finally, a chi-squared analysis was run to examine racial differences of proportions on specific impact related outcomes for families with a depressed teen.

Results

Correlation and T-test

The primary questions focused on racial differences in depression prevalence and impacts on families. Regarding depression prevalence in this sample, there were no significant differences in mean depression levels between White adolescents and African American and Latino adolescents. No significant differences were found in impact of adolescent depression on the family between White families and African American and Latino families (*t-test*, p>.05).

Linear Regression

To further evaluate the association between race and depression, linear regression was carried out, adjusting for the covariates of age, gender, income, and mother's education level. From this analysis, it was found that race was not a significant predictor of adolescent depression prevalence (β=-0.167, p=0.88).

Associations between depression and income and depression and mother's education level were also examined and compared across race (Whites vs. Non-White). Interestingly, no statistically significant association between depression and socioeconomic status was found among Whites, (p>0.05). However, among African Americans and Latinos, mother's education was significantly, negatively associated with depression with higher prevalence rates associated with lower education levels of mothers (r=-0.19, p<0.05; see Table 2).

Table 2: Association between depression, income, mother's education across race

	Variable*	
	Income (> or = $50,000 vs. <$50, 000)	Mother's education level (less than high school – advanced degree)
Race		
Non-White	0.77	**0.03**
White	0.86	0.28

*results of analyses displayed as p values

Chi-Square Analysis

Additional chi-square tests were included to examine racial differences (of proportions) on outcomes related to having a depressed teen. Statistically significant differences were found across races (Whites vs. African Americans and Latinos) on the psychological adjustment outcomes of 1) tiredness or anergia (see Table 3) and 2) other physical health problems (see

Table 4).

Table 3: Racial Differences on Variables of Psychological Adjustment – Tiredness or Anergia

	Race		
	Non-White (n=113)	White (n=315)	*p*-value
No tiredness attributed to child's problems	45 (39.8%)	128 (40.6%)	0.04
Yes, some tiredness related to child's condition	46 (4.08%)	152 (48.3%)	
Tiredness affecting ability to function	21 (18.6%)	31 (9.8%)	
Unknown	1 (0.8%)	4 (1.3%)	

Table 4: Racial Differences on Variable of Psychological Adjustment – Other Physical Health Problems

	Race		
	Non-White (n=113)	White (n=315)	*p*-value
No other physical health problems attributed to child's problems	84 (74.3%)	265 (84.2%)	0.007
Yes, other physical health problems related to child's condition	22 (19.5%)	36 (11.4%)	
Physical health problems affecting ability to function normally	4 (3.5%)	2 (0.6%)	
Unknown	3 (2.7%)	12 (3.8%)	

First, a greater proportion of African American and Latino families reported tiredness affecting their ability to function normally as a result of having a depressed teen. White families, on the other hand, were more likely to report some tiredness related to their child's condition. Second, African American and Latino families were also more likely to report experiencing "other physical health problems related to their child's condition" and "physical health problems affecting the ability to function normally".

Discussion

The findings of this study demonstrated little difference in reported rates of depression between White youth and African American and Latino youth. Our findings are supported by current literature demonstrating little to no differences in depression prevalence rates across racial groups (Doi et al., 2001; Rushton, Forcier, & Schectman, 2002; SAMHSA, 2015a). Our findings also demonstrated that overall, many of the expected impacts of having a depressed teen in the home vary little across racial groups suggesting that adolescent depression is equally burdensome on families of all races. Given prior research suggesting that depressive illness is more readily recognized in White adolescents (Nguyen et al., 2007), we had hypothesized that the White families in our sample would report a greater impact of adolescent depression compared to African American and Latino families (i.e. as a result of correctly identifying depression in their teen). However, contrary to our hypothesis, African American and Latino families were more likely to report increased feelings of tiredness or anergia ($p<.05$) and more physical health problems ($p<.01$) associated with caring for a depressed teen compared to White families.

These findings are not surprising given that adolescent depression is positively correlated with levels of family conflict and can be affected by negative familial experiences such as marital difficulties and parental anger (Cui et al., 2007; Hofer et al., 2013; Kelly et al., 2016; Tan & Rey, 2005). Research has also demonstrated the bidirectionality between depressive symptoms in children and resulting parenting stress and distress (Gross, Shaw, & Moilanen, 2008a; Hammen, 2009). For families of color, caring for a family member with a mental illness has been associated with mental and physical exhaustion (Breland-Noble et al., 2016). Furthermore, cultural stigmas associated with mental illness that are pervasive in many cultures may also impede the use of services that may alleviate the associated burden on family members (Kokanovic, Petersen, & Klimidis, 2006).

Our finding that African American and Latino families reported greater levels of tiredness and therefore greater difficulty in their ability to function on a day-to-day basis, speaks to the far-reaching impact of adolescent depression on caregivers. Prior research around adolescent depression among youth of color describes the steps most often taken in seeking care and demonstrates how the perception of mental illness within the family can create barriers to care. For example, it was found that caregivers and authority figures of African American depressed youth experienced an added burden of racism and discrimination that was exacerbated by the acknowledgement or presence of depression (Breland-Noble & Weller, 2012). Against these culturally encapsulated struggles, dealing with mental illness is often seen as an added punitive burden (Fortuna, Alegria, & Gao, 2010). In Latino youth, racial discrimination is reported to be positively associated with depression (Tummala-Narra & Claudius, 2013), making it reasonable to expect a greater burden of disease on individuals exposed to discriminatory-related life stressors.

Our findings further indicate that African American and Latino families are more likely to report experiencing other physical health issues associated with living with a depressed adolescent. Specifically, African American and Latino families were more likely to report experiencing physical health concerns associated with caring for a depressed teen compared to White families. We surmise that African American and Latino families face difficult choices regarding prioritization of care when faced with multiple health issues along with caring for an adolescent with depression. As depression (and mental illness overall) is highly stigmatized among people of color, it is possible that the mental health care of a teenager is not prioritized when faced with multiple other physical health concerns.

As discussed previously, youth of color also face disparities in treatments received for depression (Breland-Noble, 2004; Breland-Noble et al., 2011; U.S. Department of Health and Human Services, 2001). Compared to White youth, youth of color are less likely to receive appropriate diagnoses and treatment referrals and are less likely to have equal access to prescription medications, mental health specialists and providers, and outpatient treatments (Alegria et al., 2010; Alexandre et al., 2009; Costello et al., 2014; Cummings et al., 2010; Cummings et al., 2011; Garland et al., 2005; Nguyen et al., 2007; Olfson et al., 2003; Wu et al., 2001). In addition, given the well-established and disproportionate burden of disease on people of color compared to Whites in the U.S. across a myriad of physical health indicators (Alegría, Green, McLaughlin, & Loder, 2015; Breland-Noble et al., 2016), it is unsurprising that in our study African American and Latino families reported a greater burden of physical disease and/or health concerns.

Limitations

Although this paper has focused on the broad differences between racial groups concerning factors that may affect adolescent depression and its effect on families, it is important to remember that there is a great deal of diversity within these groups (i.e. African Americans vs. Latinos). One explanation for the resulting lack of differences between racial groups could be failure to properly examine and account for the cultural nuances that may exist between members of the same racial group.

Additionally, it was surprising to note that there were very few differences associated with the impacts of adolescent depression between White families and African American and

Latino families. We suspect that the low sample size of African American and Latino youth compared to White youth may have affected the findings. This is consistent with most literature around depressive illness (intervention and prevention focused) where few youth of color are recruited and retained in large-scale studies (Zhou et al., 2015).

Future Directions

As mentioned above, our results may reflect cultural differences that exist between subsets of a specific racial group. For example, though considered part of the ethnic category of "Latino", cultural differences exist between individuals from Mexico and different South American countries. Future research should focus more on the disaggregation of racial groups and on understanding how each group can be associated with different patterns of depression and the cultural differences that may impact the family as well as the differences that may increase or decrease the likelihood of seeking help or support.

Numerous studies have measured the impact of parental depression and other psychiatric disorders on their children; however, little research has focused on the effect of adolescent depression on the family. Furthermore, there has been even less focus on the experience of depression by adolescents of color and the resulting impact on caregivers and family members. For example, is there a risk of future psychological issues and potential abusive behavior associated with the negative effects of adolescent depression on the family and other social relationships?

The psychological burdens described by parents as a result of their children's depression (e.g. tiredness and increased physical health issues) are also worthy of more attention. Further study could address how the perception of burden develops in response to (and potentially alongside) a child's experience of depression. For example, how does the parent/family adjust to problems associated with their child's depression over time? Does this perceived level of burden encourage a caregiver to more readily seek services for the child and or the family? Furthermore, what coping mechanisms are used by the caregiver and does race play a role in how a family ultimately copes with adolescent depression? By examining these questions, research can help further elucidate the racial differences that exist in the experience and treatment of adolescent depression.

Conclusion

It was expected that White families would report greater impact of adolescent depression compared to African American and Latino families as they are more likely to recognize the signs of depression, receive appropriate diagnoses, and be properly referred for treatments and medications (Alegría et al., 2015; Nguyen et al., 2007). The findings of this study instead demonstrated that compared to White families, African American and Latino families were more likely to report increased feelings of tiredness or anergia ($p<.05$) and more physical health problems ($p<.01$) associated with caring for a depressed teen. Though our original hypothesis was incorrect, these findings were not surprising given the documented general impact of adolescent depression on caregivers and families.

As previously discussed, the burden of care for families of color in appropriately attending to the needs of adolescents with depression goes beyond the added strain on daily routines, familial relationships, the use of health services, and the family's socioeconomic status. Many families of color also must attend to concerns of cultural stigma and traditional norms associated with mental illness, familial responsibilities, and the use of supportive services (Chang et al., 2016; Kokanovic et al., 2006; Wong et al., 2012). While this study sought to examine the familial effects of adolescent depression, there is still extensive work to be done to better understand racial differences in the impact of adolescent depression. Overall, further investigation into these wide range of topics will allow for better provision of care and may potentially aid in diminishing the service provision gap between races for adolescent depression.

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