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Adolescent views of mental illness stigma: An intersectional lens

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Abstract

Objectives: Differences in mental illness (MI) stigma among adolescents were examined cross-sectionally across race, ethnicity, and gender to identify target populations and cultural considerations for future anti-stigma efforts. *Design:* An ethnically and socioeconomically diverse sample of sixth-graders (N=667; Mean Age=11.5) self-completed assessments of their MI-related knowledge, positive attitudes, and behaviors towards peers with MI and adolescent vignettes described as experiencing bipolar (Julia) and social anxiety (David) symptoms. Self-reported race, ethnicity, and gender were combined to generate six intersectional composite variables: Latino boys, Latina girls, non-Latina/o (NL) black boys, NL-black girls, NL-white boys, and NL-white girls—referent. Linear regression models adjusting for personal and family factors examined differences in stigma using separate and composite race, ethnicity, and gender variables. *Results*: In main effects models, boys and Latina/o adolescents reported greater stigma for some outcomes than girls and NL-white adolescents, respectively. However, intersectional analyses revealed unique patterns. NL-black boys reported less knowledge/positive attitudes than NL-black and white girls. NL-black and Latino boys reported greater avoidance/discomfort than NL-white girls. Moreover, NL-black girls and boys and Latina/o girls and boys wanted more social separation from peers with mental illness than NL-white girls; NL-black boys also reported more separation than NL-white boys, NL-black girls, and Latina girls. Finally, NL-black boys and Latina girls wanted more distance from David than NL-white and black girls. *Conclusions:* Vital for informing future anti-stigma interventions, this study generates new knowledge about how differences in views about MI exist across racial and ethnic identity, and how gender intersects with these perceptions.

Public Policy Relevance

Even as the need for mental health care among youth is rising, mental illness stigma can significantly impede access to that care. Our research with middle-school aged students shows that the intersections of race, ethnicity, and gender affect how young adolescents perceive mental illness in others. By identifying differences in mental illness stigma, including mental health literacy and desired separation from persons with mental illness, in diverse student populations, we can better understand the mechanisms of stigma within each of those groups and better inform future anti-stigma interventions that address disparities in mental illness stigma.

Mental health services are underutilized among adolescents in the United States (U.S.) (Merikangas, He, & Brody, 2010), particularly among members of racial and ethnic minority groups and boys (Cummings & Druss, 2011). Despite demonstrating severe impairment and/or a need for treatment, these disparities persist among adolescent populations and are not fully explained by economic/financial barriers to mental health care alone (Alegria, Vallas, & Pumariega, 2010; Merikangas et al., 2010). Furthermore, the burden of mental health problems has steadily increased over time with 22% of adolescents in the U.S. having a mental disorder with severe impairment (Bor, Dean, Najman, & Hayatbakhsh, 2014; Merikangas et al., 2011; Merikangas, Nakamura, & Kessler, 2009; Olfson, Druss, & Marcus, 2015; Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015). Suicide completion also remains a leading cause of death among adolescents, with rates rising in the U.S. (Kann et al., 2014; Stone et al., 2018). Latina girls, in particular, have consistently higher rates of suicide-related behavior (e.g., suicide attempt) compared to their peers (Zayas, Lester, Cabassa, & Fortuna, 2005). Untreated mental illness in adolescence can result in social, behavioral, and academic problems, worsening of symptoms or impairment, other health comorbidities, suicide-related behaviors, and adult onset of chronic disease (Birmaher, Brent, & Benson, 1998; Centers for Disease Control and Prevention, 2018; Gunstad et al., 2006; Weissman et al., 1999). This study examines how mental illness stigma, a common and significant barrier to mental health services (Clement et al., 2015), varies across race, ethnicity, and gender in young adolescents (11-13 years old).

To better understand mental health service utilization disparities, researchers have studied how mental illness stigma affects service use patterns. In general, mental illness stigma is a significant barrier to treatment seeking and service utilization for all race, ethnic, and gender groups (Corrigan, 2004). Stigma disadvantages people with mental illness with respect to many

important life circumstances, thereby hindering recovery, employment, income, social network ties, quality of life, mastery, self-esteem, depressive symptoms, and access to and quality of medical and mental health services (Druss & Bornemann, 2010; Link, Castille, & Stuber, 2008; Link, Struening, Rahav, Phelan, & Nuttbrock, 1997; Perlick et al., 2007; Perlick et al., 2001; Rosenfield, 1997; Serafini et al., 2011; Sirey et al., 2001; Wright, Gonfrein, & Owens, 2000). In response to mental illness stigma, public anti-stigma interventions have been wide-spread, of public interest, and successful in their implementation and effectiveness, as reported in a meta-analysis of mental illness anti-stigma interventions (Corrigan, Morris, Michaels, Rafacz, & Rusch, 2012). However, the meta-analysis summary also shed light on a significant shortcoming in the mental illness stigma intervention literature. Across the 79 included studies among 38,364 research participants from 14 different countries, only 5.6% and 6.1% of the studies included Latino/Latino-American participants and Asian/Asian-American participants, respectively; overall the studies included 21.1% African/African-American participants compared to 61.1% European/European-American participants. Further, less than 1% included children under 12 years old while 59% included women and girls. Although the age-specific participants were not reported across race, ethnicity, and/or gender, together the sociodemographic pool of participants in the collection of 79 studies suggests a lack of ethnic diversity in young populations in stigma intervention research particularly among young boys of color. Understanding mental illness stigma during adolescence is important as adolescence is a critical developmental period in the life course when stigmatizing attitudes and behaviors can become cemented. Identification of sociodemographic group differences across race, ethnicity, and gender in mental illness stigma during adolescence can also point to populations that may need targeted, early intervention that could inform and render more effective future mental illness anti-stigma efforts. Further

attending to population differences will help avoid a "one size fits all" approach exclusively and thereby help reduce racial, ethnic, and gender disparities in mental health treatment seeking.

The extant research on disparities in mental illness stigma attitudes and behaviors have primarily focused on examining the effects of race, ethnicity, and gender separately, one variable at a time. Among adult samples, previous research suggests variation by race and ethnicity where some racial/ethnic minority groups such as Latinas/os and African-Americans hold greater mental illness stigma despite contrasting evidence that suggests these groups also have better or equal mental health literacy compared to non-Latina/o white adults (Alvidrez, 1999; Anglin, Alberti, Link, & Phelan, 2008; Anglin, Link, & Phelan, 2006; Corrigan & Watson, 2007; Gary, 2005; Interian, Martinez, Guarnaccia, Vega, & Escobar, 2007; Whaley, 1997). With respect to gender, studies have shown that adult men more often than women hold stigmatizing attitudes and behaviors about mental illness (Anglin et al., 2006; Farina, 1981; Perry et al., 2007); consequently, men also seek mental health treatment less often (Eagly & Crowley, 1986; Gonzalez et al., 2005; Mackenzie, Gekoski, & Knox, 2006; Wang et al., 2005). Moreover, experimental studies that randomize the gender of vignette characters described as having different types of mental illness show that public beliefs about the kinds of mental health issues that men and women are able to experience are gendered based on social stereotypes (Wirth & Bodenhausen, 2009). Yet, this existing research has mostly centered on adults, examining race, ethnicity, and gender separately, with limited emphasis on younger populations. Failure to examine young populations limits our understanding of how race, ethnicity, and gender differences in perceptions about mental illness may exist at young ages.

Using an intersectional framework to examine mental illness stigma can help researchers better understand how views of mental illness can vary according to a person's social identity. In

an intersectional framework, the combinations of race, ethnicity, and gender (e.g., non-Latino

black boys, Latina girls, non-Latino white boys, etc.) are deemed important to understanding

health disparities as these intersections help identify the unique experiences and social processes

that differentially impact the lives and health of individuals (Bauer, 2014; Crenshaw, 1989). In

terms of mental health, unique socio-cultural experiences, and often differential social processes,

across social identities of race, ethnicity, and gender can determine the development of mental

illness attitudes and behaviors in adolescence. In other words, identifying, and being socially

treated, as a youth of color, and how gender intersects with that experience, can potentially shape

stigmatizing mental illness attitudes and behaviors early on in adolescence when stigmatizing

attitudes begin to develop. Prior research supports intersectional mechanisms influencing mental

illness attitudes and behaviors. For example, adults who confront prejudice and discrimination

because of their group affiliation chose not to use mental health treatment when it was needed in

order to avoid a second stigmatized label of mental illness and its negative consequences (Gary,

2005). Thus, these stigmatizing experiences may be pronounced particularly among people of

color. Moreover, higher rates of suicidal behavior among Latina girls compared to Latino boys

and non-Latina white girls suggests that Latina girls may develop knowledge and attitudes about

mental illness that delay help-seeking early when symptoms develop (Zayas et al., 2005). In sum,

the formation of social identity is a context-specific developmental process (Bauer, 2014) that

may inform how perceptions about mental illness are developed differently across gender, race,

and ethnic social identities.

  Among adolescents, most research in mental illness stigma has been limited to studies

that employ qualitative research methods and focus on youth in treatment. Studies suggest that

racial and ethnic minority youth compared to non-Latino white youth are less willing to disclose

their mental health status to peers (Corrigan et al., 2016), receive more negative reactions from peers when seeking out mental health services (Chandra & Minkovitz, 2006; Lindsey, Joe, & Nebbitt, 2010), and hold greater self-stigma and receive stigma from their family and peer relationships (Elkington et al., 2012). Girls in treatment also receive less "unwarranted assumptions, distrust, avoidance, pity, and gossip" from peers (Moses, 2010). One quantitative study among a geographically diverse sample of middle school students in the U.S. found about equal mental illness knowledge and positive attitudes across race and ethnicity (Wahl, Susin, Lax, Kaplan, & Zatina, 2012). Whether intersectional race, ethnic, and gender social identity in adolescence contributes to attitudes and behaviors regarding mental illness has, to our knowledge, not been explored.

Our study builds on this literature by providing an intersectional approach to understanding mental illness stigma disparities in a community sample of sixth-grade students. Specifically, our goal is to better understand mental illness stigma across race, ethnicity, and gender in early adolescence by not only examining the independent effects of these social identities but also across their intersections. An intersectional approach to examining mental illness stigma can identify any underlying groups of individuals that may have their own distinct perspectives about mental illness. This analytical and conceptual approach is particularly useful for identifying target populations for future anti-stigma intervention and for creating equity in research participation in future studies examining mental illness stigma.

Drawing from the extant adult literature, we hypothesize that boys and adolescent members of racial and ethnic minority groups hold more negative attitudes about mental health treatment as these attitudes play a role in blocking the use of services. The overall limited ethnic and gender representation among participants in anti-stigma intervention studies also suggests

that we would find disadvantages in mental illness knowledge and positive attitudes among boys and members of racial and ethnic minority groups, particularly Latina/o adolescents, as anti-stigma efforts reach these populations less often. Finally, we posit that non-Latino black boys and Latino boys particularly avoid and separate themselves from mental illness. As both male gender and being black/brown are socially and institutionally stereotyped as "prone to violence" (Williams & Williams-Morris, 2000), non-Latino black and Latino boys subject to this stereotype and consequential discrimination may be more inclined to avoid a mental illness label that is similarly stereotyped as violent and dangerous. These hypotheses are tested across a range of mental illness stigma outcome measures including youth's responses towards people with mental illness in general and with respect to adolescent vignettes described as experiencing symptoms of bipolar and social anxiety disorders. Our evaluation includes an ethnically and socioeconomically diverse adolescent community sample at the start of their sixth-grade academic year.

Method

Data for analysis come from the baseline (pretest) assessment of the Texas Stigma Study (2011-2015), a longitudinal study evaluating the impact of three mental illness anti-stigma interventions. The selection of participants, design, and procedures of the stigma study are described in detail elsewhere (Painter et al., 2016). Briefly, 14 school administrators in an urban city in Texas agreed to participate in an anti-stigma intervention study following our invitation. Using a fully-crossed 2x2x2 factorial controlled design, each school's sixth-grade class was randomized to receive none, one, or a combination of three anti-stigma interventions: (1) a teacher-led curriculum; (2) contact with two young adults with mental illness who shared their experience; and (3) materials with anti-stigma messaging. Both parents/guardians and students

gave active assent and consent for participation after receiving information about the study.

Students were not included in the study without signed forms. Students and parents/guardians

received a modest monetary incentive for returning signed forms and completing the study

questionnaires. Assessments were administered on laptop computers and offered in English or

Spanish; all students chose the English survey. The study was approved by the Institutional

Review Boards of Columbia University Medical Center and MHMR of Tarrant County, the

county's local mental health authority.

Study Sample

A total of 1260 sixth-graders received a study packet and invitation to participate. Of

those who responded to the invitation (n=882), 751 (85%) agreed to participate in the study and

completed the survey at baseline. The study sample is representative of the classroom aggregate

demographic across age, race, ethnicity, gender, and socioeconomic status; therefore, there is

little evidence of non-response bias at baseline. Participants with missing data regarding the

assessment of race, ethnicity, and gender were excluded (<2%; n=14) as well as adolescents

identifying as a member of a race/ethnic group other than Hispanic/Latino, non-Latino white,

and non-Latino black (9.5%, n=70) yielding a total analytic sample size of 667 adolescents. The

"other race/ethnic group" category was too small and heterogeneous for adequate analysis and

interpretation; this category included adolescents who identified as Asian American, Pacific

Islander, Native American, or mixed-race.

Among the 667 adolescents in the analytic sample, the mean age at baseline was 11.5

years and more than half were girls (Table 1). The sample is ethnically diverse (49% Latina/o,

26% non-Latina/o white, and 25% non-Latina/o black; 65% preferred using English language at

home), as well as socioeconomically—69% come from a household with income of $50,000 or less, and about 42% had a parent/guardian educational attainment of a high school diploma or less. In 2011-12, Texas public schools reported that Latina/o students accounted for the largest percentage of total enrollment (51%), followed by non-Latina/o white (31%) and African American (13%) students (Texas Education Agency, 2012). In 2011, the national household income median was $50,502, comparable to the Texas household income median of $49,392 (Noss, 2012).

Measures

Mental Illness Stigma Outcomes

Using Link and Phelan's conceptualization of stigma of five interrelated components (Link & Phelan, 2013)—labeling, stereotyping, separation, status loss, and discrimination—four measures assessed the stereotyping, or undesirable characteristics and negative stereotypes applied to labeled persons, and the separation, or the sense of separation between groups ("us" versus "them"), components. Measures were adapted from existing instruments that were developed for measuring mental illness stigma among children and adolescents (Adler & Wahl, 1998). For this study, mental illness stigma composite scales were pilot-tested with an ethnically diverse group of youths in the target age range and developed using exploratory factor analyses, as previously reported (Painter et al., 2016). Results showed that the data best fit four different stigma scales; overall mean scores were calculated where higher scores indicate increased levels of the named construct. Internal consistency reliability of the scales was adequate to excellent for the overall sample and within gender, race, ethnicity, and socioeconomic status groups (alphas=0.63-0.89).

First, assessments of mental health knowledge and attitudes examine the pervasiveness of

mental illness stereotypes (e.g., mental illness as a weakness) as cognitive knowledge structures in the general public (21-items; alpha=0.78). Items assessing knowledge/positive attitudes included 'People with mental illnesses tend to be violent and dangerous' and 'It would be embarrassing to have a mental illness' (1=Strongly Agree to 5=Strongly Disagree). Another measure of stereotypes included a stigma awareness and action scale which assessed behaviors indicating sensitivity to mental illness stigma and taking anti-stigma action (6-items; alpha=0.63), such as, 'I heard people use slang terms about mental illness like 'psycho', 'crazy', or 'looney' to put people down' (1=Occurred in past month, 0=Did not). The separation and discrimination components of stigma were assessed using a social distance scale and a measure of avoidance and discomfort of people with mental illness. Social distance—the degree to which adolescents are willing to interact with a peer with mental illness in different social and school-based activities (e.g., work on a class project with a peer with a mental illness; 1=Definitely No to 4=Definitely Yes)—was assessed by six items (alpha=0.89) (Link, Yang, Phelan, & Collins, 2004). Additionally, six items assessed whether the participant avoided persons with mental health problems in the last six-months (1=Yes, 0=No; alpha=0.63). Higher scores suggest greater social distance and avoidance/discomfort.

Three stigma measures assessed similar attitudes and behaviors towards two adolescent vignette characters described as meeting Diagnostic and Statistical Manual of Mental Disorders, IV (American Psychiatric Association, 2000) criteria for bipolar disorder (Julia) and social anxiety disorder (David) (Painter et al., 2016). After each vignette, participants responded to whether they believed Julia/David was a bad person (1=Yes, 0=No) and whether their condition would improve with treatment (1=Yes, 0=No). Vignette-based social distance was assessed for each character by four items similar to those reported above (1=Definitely No to 4=Definitely

Yes; alpha=0.92). Although hypothetical, the use of vignettes in stigma research is common and methodologically advantageous as this method delivers a clearly specified stimulus for measuring participant reactions (Link et al., 2004).

Intersectional Race, Ethnicity, and Gender Identity Variables

Race and ethnicity was self-reported in response to a single question in the survey (Latina/o, non-Latina/o black, and non-Latina/o white). Similarly, gender was self-reported (female—referent, male). Race, ethnicity, and gender were combined to generate composite race, ethnicity, and gender variables of six intersectional identities: Latino boys, Latina girls, non-Latino black boys, non-Latina black girls, non-Latino white boys, and non-Latina white girls—referent). In this way, we are able to co-examine race and ethnicity with gender.

Covariates

Analyses controlled for poverty status of the adolescent which was assessed using four indicators: 1) household income (1=Less than $20,000, 0=$20,000 or more—referent); 2) overcrowding in housing using the ratio of number of people in the household and number of rooms for sleep (1=Over-crowded, 0=Not over-crowded—referent); 3) parent/guardian educational attainment (1=Less than high school degree, 0=High School diploma or more education—referent); and 4) parent/guardian employment status (1=Not employed, 0=Employed, student, retired, or homemaker—referent). We summed the dichotomous scores in household income, overcrowding, and parent/guardian educational attainment and employment status to indicate overall likelihood of poverty (0 to 4). As no differences were found between the higher-ordered categories when running analyses, for model parsimony, we created an overall binary poverty status score (1=High likelihood of living in poverty, 0=Low to no likelihood of living in poverty).

In addition, familiarity with mental illness was assessed using an adapted version of the Level of Contact Report (Corrigan, Green, Lundin, Kubiak, & Penn, 2001). Adolescents were asked about personal interaction with individuals who have a mental illness in six contexts: seeing a mentally ill person on television (least contact); having a coworker, friend, or relative with a mental illness; living with someone who has a mental illness; and whether the adolescent has a mental illness (most contact). Combined item responses created a ranked familiarity score that indicated the most intimate level of contact reported, from 0 ('I have never observed a person with mental illness') to 7 ('I have a severe mental illness').

Data Analysis

Differences by race, ethnicity, and gender in mental illness-stigma were examined using a series of linear regression models for each stigma outcome variable at baseline. First, we examined the independent effects (main effects) of race/ethnicity and gender independently on the stigma outcomes, controlling for the covariates previously described. Then, we used composite race, ethnicity, and gender variables to examine bivariate associations between intersectional groups for each stigma outcome. Covariates were then entered into the models singly with the intersectional groups to examine whether regression coefficients for the intersectional groups changed with the addition of each covariate. We tested for potential interactions between intersectional groups and covariates (e.g., poverty status and familiarity with mental illness) in the fully adjusted models and none were statistically significant.

Multiple comparison tests were conducted to assess differences in the stigma outcomes across all intersectional categories. Only statistically significant differences are reported in the text and tables. Multiple comparison tests showed that differences across intersectional groups were almost always significant when comparing all groups to non-Latina white girls. Thus, non-

Latina white girls was the chosen referent group in all linear regression models. In the text, we report a few instances when significant differences occurred between intersectional groups other than comparing to non-Latina white girls. *P*-values <0.05 were considered statistically significant. Stata SE 14.2 was used for all analyses.

Results

Main Effects of Race/Ethnicity and Gender on Mental Illness Stigma. Race/ethnic and gender differences in mental illness stigma were observed in the main effects analyses where race/ethnicity and gender were included in the statistical model as separate variables. Net of the control variables, there were no differences in mental illness knowledge and positive attitudes and mental health awareness and action (Table 2). Main effects models did reveal that boys reported higher social distance and avoidance/discomfort towards persons with mental illness than girls (Table 2; p<0.01). Youth identifying as non-Latina/o black and Latina/o also reported wanting significantly greater social distance towards peers with mental illness than non-Latina/o white youth (p<0.001).

In terms of main effects analyses assessing responses towards 'Julia' (i.e., character with bipolar disorder) (Table 3), boys were more likely than girls to view her as a bad person (p<0.05) and to want social distance from her (p<0.01) net of covariates. Compared to non-Latina/o white youth, those identifying as non-Latina/o black and Latina/o were less likely to believe Julia would improve with treatment (Table 3). Latina/o youth desired greater social distance from her compared to non-Latina/o white youth as well (p<0.01).

Patterns for the outcomes from the character with social anxiety disorder, 'David', were similar as those found for 'Julia' (Table 3). Boys were more likely than girls to view him as a bad person (p<0.01) and to want social distance from him (p<0.05) net of controls. Also,

compared to non-Latina/o white youth, Latina/o youth were more likely to believe David was a bad person (p<0.05) and to want greater social distance from him (p<0.01).

Mental Illness Stigma Using Intersectional Race/Ethnicity and Gender Variables. Main effects analyses failed to show "hidden" intersectional differences between groups that emerged when examining composite variables of race, ethnicity, and gender. Table 4 presents results from the multivariate models examining differences by composite variables of race, ethnic, and gender identity in mental illness stigma. Regarding the outcomes assessing mental illness stereotypes (Table 4), net of control variables, non-Latino black boys reported less mental illness knowledge and positive attitudes compared to non-Latina white girls (p<0.01), as well as compared to non-Latina black girls (p<0.05). No other statistically significant differences were found.

With respect to desired social distance towards peers with mental illness, one of our measures of the stigma separation and discrimination component, non-Latina black girls (p<0.05), non-Latino black boys (p<0.001), Latina girls (p<0.01), and Latino boys (p<0.001) all reported a greater desire for social distance compared to non-Latina white girls (Table 4); non-Latino black boys also reported greater social distance compared to non-Latino white boys (p<0.01), non-Latina black girls (p<0.05), and Latina girls (p<0.05). These patterns were replicated for avoidance and discomfort among non-Latino black boys and Latino boys compared to non-Latina white girls (p<0.05). No intersectional differences were found with respect to mental illness awareness and action.

Table 5 presents intersectional differences in vignette-based mental illness stigma observed in sixth-grade. In response to the character 'Julia' described as having bipolar disorder, non-Latino black boys more frequently believed that Julia was a bad person than non-Latina white girls, net of covariates (p<0.01); this pattern was also found for non-Latino white boys and

Latina/o boys and girls, though not statistically significant. No statistically significant differences were found between non-Latina black girls compared to non-Latina white girls. Whether Julia would improve with treatment, non-Latino white boys believed so more often than non-Latina white girls ($p<0.05$) as well as compared to Latina/o girls and boys and non-Latino black boys ($p<0.01$) in multiple comparison tests. No other significant differences were found across the other groups. Net of controls, all groups except for non-Latina black girls reported significantly higher desired social distance to Julia compared to non-Latina white girls.

Findings in the outcomes corresponding to the character 'David,' described as having social anxiety disorder, were similar to the Julia findings, with some slight differences (Table 5). Non-Latino black boys and Latina/o girls and boys more frequently believed that David was a bad person compared to non-Latina white girls in sixth-grade net of covariates; this pattern was also found for non-Latino white boys and non-Latina black girls though not significant. Like social distance to Julia, non-Latino black boys and Latina/o girls and boys compared to non-Latina white girls reported more desired social distance to David net of covariates; non-Latino black boys and Latina girls also reported statistically significantly more social distance towards David compared to non-Latina black girls ($p<0.05$). No intersectional differences were observed concerning the belief that David would improve with treatment using non-Latina white girls as the referent group; however, non-Latino black boys were significantly less likely to believe in David's improvement with treatment compared to non-Latino white boys and Latino boys ($p<0.05$).

Discussion

Employing an intersectional approach using composite variables of race, ethnicity, and gender identified unique patterns in mental illness stigma that were not otherwise revealed,

particularly among non-Latino black boys and Latina/o girls and boys. Further, the magnitude of disadvantage varied between intersectional identities for specific stigma outcomes, suggesting that intersectional approaches better elucidate the complex patterns that emerge. In terms of overall mental health literacy, we find that non-Latino black boys are less proficient in general knowledge and positive attitudes regarding mental illness compared to non-Latina white girls and non-Latina black girls. This pattern compared to non-Latina white girls was replicated in outcomes related to the vignette characters with a mental health condition: non-Latino black boys more often believed that both characters experiencing bipolar and social anxiety disorders were bad people and not likely to improve with treatment. This pattern is concerning as the age of onset for bipolar and anxiety disorders can begin during adolescence (Kessler, Rubinow, Holmes, Abelson, & Zhao, 1997). Non-Latino black boys experiencing symptoms of mental illness, particularly bipolar and anxiety disorders, may be especially impacted by mental illness stigma as a barrier to help-seeking and receiving treatment, and recovery following a diagnosis. Boys in general also hold less mental health literacy during this particular period of adolescent development as main effects analyses revealed boys were more likely than girls to believe that the vignette characters were bad people. This pattern, also found in adult men, has detrimental persistence (Gonzalez et al., 2005). Of note, non-Latino white boys in sixth-grade more often believed Julia would improve with treatment than non-Latina white girls, Latina/o girls and boys, and non-Latino black boys. Other relevant patterns include how non-Latina black girls demonstrated similar mental health knowledge and awareness as non-Latina white girls in sixth-grade. Overall the evidence of intersectional differences in mental health knowledge and positive attitudes suggests specific target populations and cultural considerations, as well as a critical time in early adolescence, for introducing interventions aimed at improving these outcomes.

More striking are the findings concerning desired social distance from people with mental illness, including the vignette characters, across race, ethnicity, and gender. Adolescents who identify with a racial and ethnic minority group (i.e., non-Latina/o black girls and boys, and Latina/o girls and boys) were more likely to desire social distance from peers with a mental illness. Non-Latino black boys in particular reported greater social distance compared to non-Latino white girls and boys, and non-Latino black and Latina girls—a finding that reinforces how mental illness stigma may in particular block the use of services for groups that are more likely to face prejudice and discrimination. Moreover non-Latino black and Latino boys, but not non-Latino white boys, reported significantly greater avoidance and discomfort about mental illness than non-Latina white girls in sixth-grade which suggests that boys of color may particularly benefit from targeted, tailored, anti-stigma intervention.

These social separation patterns towards peers with mental illness were replicated in the outcomes pertaining to vignette characters. All intersectional groups, with the exception of non-Latina black girls, were more likely to desire separation from Julia (bipolar disorder) compared to non-Latina white girls in sixth-grade. Regarding David (anxiety disorder), non-Latino black boys and Latina/o girls and boys were more likely to report greater social distance in sixth-grade. Overall the evidence suggests that the stigma component of desired separation is more pronounced for boys, particularly non-Latino black and Latino boys, as well as for Latina girls. These findings replicate in an adolescent sample how adult members of sociodemographic groups that are vulnerable to receiving prejudice and discrimination may seek to avoid another stigmatized label of mental illness (Gary, 2005).

The race, ethnic, and gender patterns we find in mental illness stigma mirrors the literature among adults indicating that mental illness-related stigma crystalizes early in life and

persists into adulthood, including disparities in views about mental illness across intersectional groups. The evidence examining gender differences generally supports previous findings of greater stigma among boys and that these attitudes develop at younger ages and last as adults. However, the findings with respect to Latina girls preferring greater separation towards mental illness and believing the character with anxiety symptoms is a bad person merits further investigation especially considering the disproportionate risk of depressive-anxiety symptoms and suicide attempt among Latina girls (Zayas et al., 2005). Addressing these attitudes in younger populations and assessing why some race, ethnic, and gender groups differ in their views regarding mental illness can help improve equity in the use of mental health services. Together, the evidence supports the critical need to tailor anti-stigma messages to at-risk adolescent populations of mental illness stigma and/or ensure that public anti-stigma messages reach adolescents across race, ethnicity, and gender.

Several limitations warrant discussion. First, the study aimed to test differences in mental illness-related stigma by a categorical assessment of self-identified race, ethnicity, and gender. Other factors related to race and ethnicity and mental illness-related stigma were not examined such as level of trust in mental health services or potential adverse experiences (e.g. law enforcement) during a mental health crisis. In addition, we did not assess other social identities that would be particularly relevant to certain race/ethnic groups, such as immigration status to tease apart differences between US-born and foreign-born Latinas/os and black immigrant and African-American adolescents. Socioeconomic status is also a status, but was only treated as a covariate. Given the findings of this report, it would be important for future research to assess factors that may help explain the underlying mechanisms that contribute to the observable difference in views about mental illness across race, ethnicity, and gender as well as factors that

assess meaningful variation within race and ethnic groups with respect to mental illness stigma (Torres et al., 2018). Nevertheless, this study provided a comprehensive battery of stigma outcome measures that assessed the kinds of knowledge, attitudes, and beliefs that are thought to facilitate or impede help-seeking for a mental health problem in an ethnically diverse, young sample. Second, a large majority of the Latina/o group (91%) identified as Mexican/Mexican-American and therefore generalizations to other Latina/o groups cannot be made. Third, the extent of embeddedness in terms of social identity was not examined, although race, ethnicity, and gender were self-identified indicating that the chosen category was self-selected as the most salient for the participant among this sample of adolescents. As gender falls along a continuum, all participants were given an 'other' and 'fill-in-the-blank' response category in the demographic questionnaire; all adolescents in this sample responded as 'male' or 'female' at the sixth-grade time point. Finally, as this study is cross-sectional, we were unable to examine the mechanisms that lead to these disparities in mental illness stigma. Despite these limitations, this study provided an opportunity to extend our understanding about race, ethnicity, and gender in relation to mental illness knowledge, attitudes, and behaviors. To our knowledge, our study is the first to quantitatively examine race, ethnic, and gender differences in stigma among adolescents in the school context by examining both stigma towards people with mental illness and about vignette characters described as having mental illness.

 Knowledge regarding racial, ethnic, and gender differences in mental illness stigma is important for understanding how these differences contribute, at least in part, to mental health care disparities for adolescents. Assessing adolescents' mental health knowledge, attitudes, and behaviors can elucidate specific barriers in the help-seeking process for specific groups of adolescents and ultimately, in their mental health service utilization. Interventions aimed at

reducing stigma and promoting mental health service use among school-aged populations should take into account these race, ethnicity, and gender patterns in mental illness stigma as greater stigma for boys in general, and non-Latino black boys and Latina/o girls and boys in particular, may serve as an impediment to receiving services. School-based anti-stigma interventions have been shown to successfully reduce stigma in the short-term and may potentially also narrow disparities in access to treatment (Painter et al., 2016) and address bullying behaviors (DuPont-Reyes et al., 2018). Future research in mental illness stigma that considers intersectional influences may deepen our understanding regarding these patterns and point to specific ways in which anti-stigma interventions can tailor content and/or reach underserved adolescent populations to reduce disparities that disadvantage some groups. Future research should also examine whether mental illness anti-stigma efforts has reached a diverse range of intersectional identities among young populations to evaluate whether mental health services are being promoted to underserved youth and at an age when mental health issues develop. Mental health service providers and programs may also find these findings useful as they seek to understand reluctance to seek or to remain in treatment among young, diverse populations. Understanding how members of racial and ethnic minority groups differ in their views of mental illness, and how gender intersects with these perceptions, can help us better grasp how mental illness stigma impedes use of mental health services in underserved populations and through specific mechanisms.

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Tables

Table 1. Sixth-grade sample characteristics by self-reported race, ethnic, and gender identity; Texas Stigma Study, 2011-2012

	Full Sample	Non-Latina white girls	Non-Latino white boys	Non-Latina black girls	Non-Latino black boys	Latina girls	Latino boys
	N=667	n=92	n=81	n=94	n=74	n=176	n=150
Female, % (n)	54.30 (362)	n/a	n/a	n/a	n/a	n/a	n/a
Non-English preference at home*, % (n)	28.85 (191)	1.10 (1)	0.00 (0)	3.23 (3)	8.22 (6)	57.14 (100)	54.00 (81)
Household income <$50,000*, % (n)	69.36 (403)	34.57 (28)	39.44 (28)	81.71 (67)	73.85 (48)	82.55 (123)	81.95 (109)
Parent/guardian H.S. diploma or less*, % (n)	42.25 (248)	16.87 (14)	12.86 (9)	29.63 (24)	26.87 (18)	66.23 (102)	61.36 (81)
Familiarity with mental illness (0-6)*, mean (SD)	2.50 (1.81)	2.63 (1.88)	2.96 (1.77)	2.64 (1.68)	3.10 (1.96)	2.22 (1.77)	2.13 (1.70)

NOTE: "H.S." denotes high school. *$p<0.05$ for statistically significant difference across sociodemographic groups.

Table 2. Differences across race, ethnicity, and gender in the sixth grade sample from linear regression models assessing knowledge, attitudes, and behaviors about mental illness; Texas Stigma Study, 2011-2012

	Knowledge & Positive Attitudes (1-5)		Awareness & Action (0-1)		Social Distance (1-4)		Avoidance & Discomfort (0-1)	
	F=4.12 (5,603)**		F=26.79 (5,601)***		F=17.71 (5,602)***		F=2.49 (5,600)*	
	B [95% CI]							
Gender								
Female	ref.		ref.		ref.		ref.	
Male	-0.04	[-0.10, 0.01]	0.01	[-0.04, 0.06]	0.18**	[0.06, 0.29]	0.06**	[0.02, 0.10]
Race/ethnic identity								
Non-Latina/o white	ref.		ref.		ref.		ref.	
Non-Latina/o black	-0.07	[-0.15, 0.01]	-0.01	[-0.07, 0.06]	0.35***	[0.19, 0.51]	0.04	[-0.02, 0.09]
Latina/o	-0.06	[-0.12, 0.01]	-0.04	[-0.10, 0.02]	0.28***	[0.13, 0.42]	0.02	[-0.03, 0.07]
High likelihood of poverty	-0.04	[-0.10, 0.02]	<0.01	[-0.05, 0.05]	0.06	[-0.06, 0.18]	0.02	[-0.03, 0.06]
Familiarity with mental illness	0.03**	[0.01, 0.04]	0.07***	[0.06, 0.09]	-0.11***	[-0.15, -0.08]	0.01	[-0.01, 0.02]
_cons	3.54***	[3.47, 3.61]	0.23***	[0.16, 0.29]	2.09***	[1.94, 2.25]	0.17***	[0.12, 0.22]

NOTE: Female and non-Latina/o white race/ethnic identity, and not likely living in poverty are the omitted referent categories. All models adjust for gender identity, race/ethnic identity, poverty status, and familiarity with mental illness. *p<0.05, **p<0.01, ***p<0.001

Table 3. Differences across race, ethnicity, and gender in the sixth grade sample from linear regression models in vignette-based outcomes assessing knowledge, attitudes, and behaviors about a vignette character's mental health condition; Texas Stigma Study, 2011-2012

	"Julia" Vignette [described with bipolar symptoms] Outcomes					
	Bad Person (0-1)		Improve with Treatment (0-1)		Social Distance (1-4)	
	F=2.15 (5,595)		F=1.87 (5,587)		F=7.25 (5,570)***	
	B [95% CI]					
Gender						
Female	ref.		ref.		ref.	
Male	0.14*	[0.01, 0.27]	0.01	[-0.10, 0.13]	0.20**	[0.07, 0.32]
Race/ethnic identity						
Non-Latina/o white	ref.		ref.		ref.	
Non-Latina/o black	0.08	[-0.10, 0.26]	-0.22**	[-0.38, -0.06]	0.09	[-0.10, 0.27]
Latina/o	0.10	[-0.06, 0.26]	-0.17*	[-0.31, -0.02]	0.22**	[0.06, 0.38]
High likelihood of poverty	0.13	[-0.01, 0.26]	0.07	[-0.05, 0.19]	-0.05	[-0.19, 0.08]
Familiarity with mental illness	-0.01*	[-0.04, 0.03]	-0.02	[-0.05, 0.01]	-0.07***	[-0.11, -0.04]
_cons	0.50***	[0.33, 0.67]	2.11***	[1.96, 2.26]	2.27***	[2.10, 2.44]
	"David" Vignette [described with social anxiety symptoms] Outcomes					
	Bad Person (0-1)		Improve with Treatment (0-1)		Social Distance (1-4)	
	F=4.72 (5,589)***		F=2.18 (5,588)		F=4.30 (5,566)***	
	B [95% CI]					
Gender						
Female	ref.		ref.		ref.	
Male	0.21**	[0.09, 0.33]	0.09	[-0.05, 0.22]	0.13*	[0.01, 0.25]
Race/ethnic identity						
Non-Latina/o white	ref.		ref.		ref.	
Non-Latina/o black	0.16	[-0.01, 0.34]	-0.16	[-0.34, 0.03]	0.16	[-0.02, 0.33]
Latina/o	0.17*	[0.02, 0.32]	0.06	[-0.11, 0.23]	0.22**	[0.07, 0.37]
High likelihood of poverty	0.14*	[0.01, 0.27]	0.09	[-0.05, 0.24]	-0.01	[-0.14, 0.12]
Familiarity with mental illness	<0.01	[-0.03, 0.04]	-0.01	[-0.05, 0.03]	-0.05*	[-0.08, -0.01]
_cons	0.37***	[0.21, 0.53]	1.77***	[1.59, 1.95]	1.80***	[1.64, 1.97]

NOTE: Female and non-Latina/o white race/ethnic identity, and not likely living in poverty are the omitted referent categories. All models adjust for gender identity, race/ethnic identity, poverty status, and familiarity with mental illness. *p<0.05, **p<0.01, ***p<0.001

Table 4. Differences across intersectional groups in the sixth grade sample from linear regression models assessing knowledge, attitudes, and behaviors about mental illness; Texas Stigma Study, 2011-2012

	Knowledge & Positive Attitudes (1-5)		Awareness & Action (0-1)		Social Distance (1-4)		Avoidance & Discomfort (0-1)	
	F=4.11 (7,601)***		F=19.79 (7,599)***		F=13.33 (7,600)***		F=1.95 (10,653)***	
	B [95% CI]							
Intersectional group								
Non-Latina white girls	ref.		ref.		ref.		ref.	
Non-Latino white boys	-0.03	[-0.14, 0.07]	0.03	[-0.06, 0.12]	0.16	[-0.06, 0.38]	0.05	[-0.02, 0.12]
Non-Latina black girls	-0.01	[-0.11, 0.09]	0.04	[-0.05, 0.13]	0.25*	[0.03, 0.46]	0.03	[-0.04, 0.10]
Non-Latino black boys	-0.18**[a]	[-0.29, -0.07]	-0.03	[-0.13, 0.06]	0.63***[b]	[0.40, 0.86]	0.10*	[0.02, 0.18]
Latina girls	-0.08	[-0.17, 0.02]	-0.05	[-0.13, 0.03]	0.31**	[0.12, 0.50]	0.02	[-0.04, 0.08]
Latino boys	-0.06	[-0.15, 0.03]	-0.01	[-0.09, 0.07]	0.39***	[0.20, 0.59]	0.07*	[0.01, 0.14]
High likelihood of poverty	-0.04	[-0.10, 0.02]	<0.01	[-0.05, 0.05]	0.06	[-0.06, 0.19]	0.02	[-0.03, 0.06]
Familiarity with mental illness	0.03**	[0.01, 0.04]	0.07***	[0.06, 0.09]	-0.12***	[-0.15, -0.08]	0.01	[-0.01, 0.02]
_cons	3.53***	[3.45, 3.61]	0.22***	[0.15, 0.29]	2.11***	[1.93, 2.28]	0.17***	[0.11, 0.23]

NOTE: Non-Latina white girls, and not likely living in poverty are the omitted referent categories. All models adjust for intersectional variables, poverty status, and familiarity with mental illness. *p<0.05, **p<0.01, ***p<0.001, [a]p<0.05 compared to non-Latina black girls, [b]p<0.05 compared to non-Latino white boys, non-Latina black girls, and Latina girls.

Table 5. Differences across intersectional groups in the sixth grade sample from linear regression models assessing knowledge, attitudes, and behaviors about a vignette character's mental health condition; Texas Stigma Study, 2011-2012

	"Julia" Vignette [described with bipolar symptoms] Outcomes					
	Bad Person (0-1)		**Improve with Treatment (0-1)**		**Social Distance (1-4)**	
	F=1.96 (8,591)*		F=2.99 (8,583)**		F=5.18 (8,567)***	
	B [95% CI]					
Intersectional group						
Non-Latina white girls	ref.		ref.		ref.	
Non-Latino white boys	0.18	[-0.07, 0.43]	0.27*[a]	[0.05, 0.49]	0.38**	[0.13, 0.63]
Non-Latina black girls	-0.01	[-0.24, 0.24]	-0.02	[-0.24, 0.20]	0.14	[-0.11, 0.38]
Non-Latino black boys	0.37**	[0.11, 0.62]	-0.19	[-0.42, 0.04]	0.42**	[0.16, 0.68]
Latina girls	0.18	[-0.05, 0.41]	-0.12	[-0.33, 0.19]	0.38**	[0.14, 0.61]
Latino boys	0.20	[-0.04, 0.43]	-0.16	[-0.37, 0.05]	0.42***	[0.19, 0.66]
High likelihood of poverty	0.13	[-0.01, 0.27]	0.02	[-0.11, 0.14]	-0.06	[-0.21, 0.08]
Familiarity with mental illness	-0.01*	[-0.04, 0.03]	-0.02	[-0.05, 0.01]	-0.08***	[-0.11, -0.04]
_cons	0.49***	[0.30, 0.69]	1.98***	[1.81, 2.15]	2.19***	[2.00, 2.39]
	"David" Vignette [described with social anxiety symptoms] Outcomes					
	Bad Person (0-1)		**Improve with Treatment (0-1)**		**Social Distance (1-4)**	
	F=3.02 (8,585)***		F=2.05 (8,584)*		F=4.89 (8,563)***	
	B [95% CI]					
Intersectional group						
Non-Latina white girls	ref.		ref.		ref.	
Non-Latino white boys	0.23	[-0.01, 0.47]	0.24	[-0.03, 0.50]	0.21	[-0.03, 0.44]
Non-Latina black girls	0.17	[-0.06, 0.40]	0.04	[-0.22, 0.29]	0.03	[-0.20, 0.26]
Non-Latino black boys	0.39**	[0.15, 0.64]	-0.15[b]	[-0.42, 0.12]	0.54***[c]	[0.30, 0.79]
Latina girls	0.22*	[<0.01, 0.44]	0.10	[-0.14, 0.35]	0.37**[c]	[0.16, 0.59]
Latino boys	0.41***	[0.18, 0.63]	0.25	[-0.01, 0.50]	0.27*	[0.05, 0.49]
High likelihood of poverty	0.15*	[0.02, 0.29]	0.08	[-0.07, 0.23]	-0.01	[-0.14, 0.13]
Familiarity with mental illness	<0.01	[-0.03, 0.04]	-0.01	[-0.04, 0.03]	-0.05**	[-0.09, -0.02]
_cons	0.36**	[0.17, 0.54]	1.70***	[1.49, 1.90]	1.78***	[1.60, 1.97]

NOTE: Non-Latina white girls, and not likely living in poverty are the omitted referent categories. All models adjust for intersectional variables, poverty status, and familiarity with mental illness. *p<0.05, **p<0.01, ***p<0.001, [a]p<0.05 compared to non-Latina black boys, Latina girls, and Latino boys, [b]p<0.05 compared to non-Latino white boys and Latino boys, [c]p<0.05 compared to non-Latina black girls.