

THE MEDIATING ROLE OF DISCRIMINATION IN THE RELATIONSHIP BETWEEN
MARGINALIZED IDENTITIES AND MENTAL HEALTH OUTCOMES IN CHILDREN

by

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ABSTRACT

The Mediating Role of Discrimination in the Relationship between Marginalized Identities and Mental Health Outcomes in Children

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Stigmatization and discrimination are prevalent experiences for racial/ethnic minorities (REM), sexual and gender minorities (SGM), and those with high body weight and are significant stressors that have been linked to a variety of negative mental health consequences. These relationships are robust among adults, but there remains a need to better understand these constructs longitudinally starting in childhood. Therefore, the current study assessed longitudinal associations between minority identity, perceived discrimination based on multiple attributes, and mental health outcomes among children utilizing data from the Adolescent Brain Cognitive Development Study. Participants who completed the ABCD Youth Discrimination Measure and the KSADS in full were included in the current study. Demographic characteristics were assessed at baseline, discrimination was assessed at 1-year follow-up, and mental health outcomes were measured at 2-year follow-up. A series of logistic regressions were conducted to investigate the relationships between minority status (REM status, SGM status,

nationality, and weight status), perceived discrimination (race/ethnicity/color, perceived sexual orientation, country of origin, and weight), and mental health outcomes (mood disorders, eating disorders, suicidal ideation, and suicidal behavior). All analyses adjusted for age, race, sex, diagnosis at baseline, and BMIz was included when assessing eating disorder outcomes. Given the number of models run, p-values for *a*, *b*, and *c*' paths were adjusted using the Benjamini-Hochberg method, familywise for each mediation model. There were 11,878 participants included at baseline (*M*_{age}= 9.9y, 47.8% female, 52.5% non-Hispanic White, 1.6% probable SGM, 32% with overweight/obesity). Perceived discrimination based on weight was the most common form reported by participants (*n* = 654, 6.1%), followed by race/ethnicity/color (*n* = 472, 4.5%), perceived sexual orientation (*n* = 408, 3.9%), and nationality (*n* = 177, 1.6%). Race was significant in the model predicting mood disorders (*p* = .02). The relationship between REM status and mood disorders was mediated by racial discrimination such that the relationship between REM status and the odds of a mood disorder was partially accounted for by the presence of racial discrimination (*a*, *p* < .003; *b*, OR: 2.05, CI: 1.28 – 3.30; *c*, *p* = .02; *c*' , *p* = .14). Weight status was significant in the model predicting eating disorders, such that children with overweight/obesity had a lower odds of an eating disorder at two years compared to lean individuals (OR: .23, CI: 0.12 – 0.45). The relationship between weight status and eating disorders was partially mediated by weight-based discrimination such that within the presence of discrimination, those with overweight/obesity had lower odds of reporting an eating disorder, compared to lean individuals (*a*, OR: 5.84, CI: 4.54 – 7.50; *b*, OR: 3.79, CI: 1.90 – 7.59; *c*, OR: .23, CI: 0.12 – 0.45; *c*' , OR: 0.14, CI: 0.06 – 0.31). All other models were non-significant. The findings in the current study suggest that early

experiences of discrimination may be associated with early indicators of pathology, and that there may be longitudinal impacts of holding a minority identity, experiencing discrimination based on that identity, and mental health outcomes. Future research should continue to assess these relationships longitudinally utilizing large sample sizes of diverse youth in order to further elucidate these relationships over time and inform clinical care.

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CHAPTER ONE: INTRODUCTION

Stigma is the social devaluation of an individual based on an attribute or characteristic of their identity. Individuals with stigmatized identities are ascribed stereotypes or other labels that increase their vulnerability to unfair treatment, prejudice, and discrimination. Discrimination is the perceived and lived experience of biased behavior including inappropriate and unfair treatment of individuals due to group membership and actions that directly or indirectly harm or disadvantage a group (34). Stigmatization and discrimination are prevalent experiences for those with marginalized identities, including racial/ethnic minorities (REM), sexual and gender minorities (SGM), and those with high body weight (3; 23; 75; 79; 101; 110; 136) and are significant stressors that have been linked to a variety of negative mental and physical health consequences (148; 150). Among the negative health consequences linked to stigma are depression (4), anxiety (60), suicidality (48), and eating/weight pathology (107). Some of the existing evidence supports the direct relationship between minority status and various physical/psychological outcomes, such that REM and SGM individuals may experience higher rates of depression, anxiety, suicidality, substance use, and eating and weight pathology compared to those who do not hold these identities (5; 21; 26; 49; 80; 89; 137; 147).

However, just as there is nuance in the identities that an individual may hold, there is comparable nuance in the literature regarding the relationship between identity facets and mental health outcomes. For example, with regard to eating and weight pathology among SGM individuals, sexual minority females may be at a higher risk for overweight/obesity while sexual minority males may be at higher risk for eating

pathology (49). Similarly, rates of obesity among REM individuals are not equivalent across the board, with recent data suggesting the highest rates among non-Hispanic Black individuals (54). Prevalence rates of eating disorders tend to show higher rates among REM individuals (114; 115), though these findings vary based on racial/ethnic identity and specific eating disorder. For example, Hispanic individuals may be most likely to have binge eating disorder (102), whereas Asian individuals may be more likely to have disordered eating and weight control behaviors (113; 115). Additionally, some research shows that REM individuals have higher or increasing risk for chronic depression and suicidality (2; 93; 145), though the data are mixed and some studies have found lower risk for these outcomes among REM populations (29; 61; 74). For example, a recent review on suicidality among immigrants and ethnic minorities found that some studies suggested higher rates of suicidality among immigrants, particularly non-European immigrant women, while others reported lower rates compared to the native population (44). Another study assessing suicide trends in the United States from 2001-2015 found the highest rates among White and Indigenous populations and the lowest rates among Black and Latinx populations (61).

Much of the aforementioned literature accounts for intermediate mechanisms that may be driving the relationships between certain identity facets and adverse outcomes. These mechanisms may include systemic factors such as institutional racism, socioeconomic disparities, lack of access to healthcare, chronic stress and personal/cultural factors such family/social non-acceptance, self-disclosure, and barriers to culturally-informed care. Another important mechanism to consider in the link between minority status and mental health disparities may be the experience of

discrimination. These social determinants, including stigma and discrimination, are imperative to consider when assessing the relationship between minority identity and mental health outcomes.

Perceived discrimination is the subjective experience or perception that one is treated differently or unfairly due to some aspect of their identity. Perceived discrimination involves the perception, anticipation, and evaluation of an experience as discriminatory and does not have to be associated with an actual discriminatory experience (16). More overt forms of discrimination, such as not being hired for a job due to one's race or gender, may occur less frequently due to being highly scrutinized, less socially acceptable, and often illegal in many cases (1). However, more subtle forms of discrimination such as microaggressions (commonplace indignities and insults that target minority groups) and social rejection/exclusion are ubiquitous and - while less detectable - may have significant consequences and contribute to health disparities (130; 147). In empirical studies, discrimination is often measured using the Perceived Discrimination Scale (149), which measures lifetime and daily experiences of discrimination based on various facets including race/ethnicity, sexual orientation status, nationality, and weight status. Lifetime discrimination refers to major experiences of discrimination and unfair treatment throughout one's life in domains of employment, education, housing, and police interactions (e.g. being unfairly fired or denied promotion). Daily or everyday discrimination addresses exposure to chronic experiences of discrimination and mistreatment, such as being treated with less courtesy or receiving poorer service in a restaurant (146; 149). While discrimination is experienced by a broad range of individuals and may target a variety of identities, for the purposes of this study, the facets

that will be focused on are discrimination based on race/ethnicity/color, perceived sexual orientation, nationality, and weight status.

DISCRIMINATION IN ADULTS

The prevalence rates reported below are meant to provide an overarching summary of the current empirical findings on experiences of discrimination in adults. However, it is important to note that these experiences are often personal in nature and vary based on a number of factors, making them inherently difficult to capture in summary statistics. For example, discrimination based on country of origin likely varies based on the level of acceptance of one's native country, as well as the stereotypes associated with that group (50). Therefore, it is important to note that these data should be interpreted as estimates and are meant only to provide a broad overview. However, in a seminal study assessing a national sample of over 3,000 U.S. adults, 33% of participants reported major lifetime discrimination and 61% reported day-to-day perceived discrimination based on any attribute (75).

Prevalence of Discrimination Based on Race/Ethnicity/Color

Various studies have assessed the prevalence of perceived discrimination across marginalized communities. In a study by Kessler and colleagues, lifetime perceived discrimination was higher among racial and ethnic minorities compared to non-Hispanic White respondents (75). More recent studies estimate that between 40 and 75% of racial and ethnic minority adults report experiences of discrimination (53; 79; 150). In a nationally representative sample of Asian adults, 47.8% reported perceived discrimination (53). The Pew Research Center's survey on racial attitudes in America assessed over 3,500 adult respondents and found that 63% of respondents who held a

racial/ethnic minority identity reported experiences of racial discrimination (79).

Furthermore, a study looking at national epidemiological data from 35,877 respondents from across the United States, Non-Hispanic Black respondents reported the highest levels of discrimination at 41.6%, followed by American Indian (39%), Hispanic/Latinx (26%) and Asian/Pacific Islander (26%) (150).

Prevalence of Discrimination Based on Sexual Orientation

Studies utilizing data from a nationally representative sample of over 35,000 US adults found the prevalence of sexual orientation discrimination in the past year to be between 13% and 50%, depending on sexual orientation and age (40; 126). Younger respondents and those who identified as lesbian or gay reported the highest rates of sexual orientation discrimination.

Prevalence of Discrimination Based on Nationality

There is a notable lack of literature assessing discrimination based on country of origin specifically. Additionally, of the studies that exist, many do not distinguish between experiences of discrimination based on nationality versus discrimination based on race or ethnicity. Admittedly, these constructs are difficult to parse, but they leave the literature relatively sparse and difficult to interpret meaningfully. However, some findings suggest that level of acculturation and language acquisition impact the experience of discrimination among immigrants (141; 151). Furthermore, of the studies that have been conducted, prevalence rates range from 30% to 68% for experiences of discrimination based on nationality (3; 52; 101; 139)

Prevalence of Discrimination Based on Weight Status

Adults with overweight and obesity are subject to high levels of scrutiny and discrimination in various realms of their lives, such as employment, healthcare, and interpersonal relationships (109). In a sample of 3,500 U.S. adults, 71% of individuals with obesity reported experiences of day-to-day perceived discrimination (23). Recent studies including individuals across weight strata have found prevalence rates from 13% to 42%, with higher rates among those with higher BMI (63; 106; 125; 128). Spahlholz et al. conducted a meta-analysis of nine studies, eight of which were in the United States, assessing weight-based discrimination among nationally representative samples of adults across the weight spectrum and found that the prevalence of weight discrimination increased as BMI increased, with the highest rates of 42% reported among those with class II obesity (128).

Correlates and Impacts of Discrimination in Adults

Across studies, empirical findings suggest that discrimination is correlated with and predictive of poor mental and physical health outcomes. Among adults, data consistently provide evidence supporting the harmful correlates and effects of discrimination based on various identity facets on mental and physical health. Studies have found associations between discrimination and greater rates of depression (41; 48; 56; 60; 63; 75; 92; 99; 137), anxiety (56; 60; 75), stress (137), psychological distress (75; 99; 120), low self-esteem (12; 97), substance use and abuse (56; 60; 137), disordered eating and weight pathology (9; 36; 59; 69; 78; 107; 132), and suicidality (47; 48; 76; 93).

MODELS EXPLAINING THE IMPACTS OF STIGMA AND DISCRIMINATION ON HEALTH

Stigma has been explained as a barrier to seeking and receiving healthcare, a stressor contributing to poor health (e.g., minority stress theory) (88), and as a cycle that perpetuates maladaptive physiological and coping responses (cyclic obesity/weight-based stigma model) (138). One model particularly relevant to the current study is the Social Evaluative Threat model (32). This model posits that social situations that involve negative evaluation from others are likely to activate a stress response, engaging the hypothalamic-pituitary-adrenocortical (HPA) axis and leading to elevated secretion of cortisol. The inability to control the potential threat or discrimination can lead to a disproportionate activation and stress response. This heightened physiological response caused by experiences of discrimination can have downstream health consequences, including elevated blood pressure and cardiovascular risk (127). Additionally, continuous exposure to discrimination can lead to chronic stress, which can increase vulnerability to mental and physical illness, including cognitive impairment and greater risk for depression, anxiety, psychosis, and PTSD (14; 27; 83; 98).

While research on the impacts of discrimination is robust among adults, there remains a need to better understand these constructs in childhood. Childhood is a critical developmental period for the onset of psychopathology (25; 30; 55; 64; 72; 143) and experiences of victimization (i.e. verbal or physical harassment) and discrimination (123; 134). Furthermore, with evidence suggesting that the impacts of discrimination impact mental and physical health later in life (45; 85; 135), this research may be critical for prevention and early intervention. Therefore, longitudinal research assessing the relationships between marginalized identities, experiences of discrimination, and mental health outcomes in youth are needed.

DISCRIMINATION IN YOUTH

Discrimination and victimization are unfortunately prevalent experiences for youth across cultures and contexts (103; 133; 134) and can have lasting impacts through adulthood (8). Discrimination in youth can take a variety of forms, such as verbal teasing (e.g. being called names), relational victimization (e.g. being excluded from social groups), cyberbullying (e.g. someone posting something embarrassing online), and physical aggression (e.g. verbal or physical threats) (111; 112). These experiences can occur in various settings, such as at home, school, online, in public, and in healthcare settings and be perpetrated by peers, family members, teachers, doctors, store clerks, and the media (9; 13; 18; 46; 100; 108; 110). Prevalence rates of victimization and discrimination in the United States suggest that it is experienced by 30% of youth (33; 37; 43), with even higher rates among female youth (87; 103), youth with multiple marginalized identities (62; 144), children with intellectual differences (82; 116), and children of high weight status (57; 136).

Prevalence of Discrimination Based on Race/Ethnicity/Color

Data from a study including a large sample of youth of various racial/ethnic backgrounds found a prevalence of 9% for race-based bullying/harassment (20). Studies focused on Black and Latinx youth show alarming rates of discrimination, with various findings suggesting prevalence rates between 30% and 90% (51; 96; 101; 105; 122). One study utilized a nationally representative sample of 1,052 youth and assessed experiences of discrimination by asking how often respondents had been discriminated against because of their race from never (0) to very often (4) (51). Another study drew on data from a national survey and assessed discrimination among 1,170 African American and

Afro-Caribbean youth using the everyday discrimination scale (96). There is considerably less research on Native American and Alaskan Native children, though one study reported a prevalence of 10% for experiences of race-based discrimination (71).

Prevalence of Discrimination Based on Sexual Orientation

In a large sample of over 1,000 youth from Boston public schools, the prevalence of discrimination based on perceived sexual orientation was 31% among sexual and gender minority (SGM) youth compared to 4% among non-SGM youth (4). Grollman (2012) found similar results among a sample of Black youth and young adults, with 20% reporting sexual identity discrimination. Notably, studies have shown that SGM youth are at higher risk for multiple types of harassment (e.g. based on weight, race, and disability status), not solely based on their sexual orientation or gender identity (15; 20; 38; 66).

Prevalence of Discrimination Based on Nationality

Similar to the adult literature, research assessing discrimination based on nationality among children is sparse. One study of 204 Mexican immigrant youth found that 60% reported experiencing discrimination from peers, and 42% reported discrimination from teachers (19). Another study conducted in Canada among 1,053 children who had recently relocated from other countries found that 25% of children reported being treated unfairly due to their nationality (95).

Prevalence of Discrimination Based on Weight Status

Weight stigma is defined as the social devaluation of an individual based on their body weight and leads to prejudice, negative stereotyping, and discrimination (138). Youth may experience this from parents, siblings, peers, teachers, and medical

professionals in the home, school, healthcare settings, and online. A recent review of the prevalence and consequences of weight-based victimization and discrimination among youth reported that a quarter to a half of youth have been bullied for their body weight, and up to 32% of youth report experiences of discrimination based on their weight (110). This review included a study of a large sample of ethnically diverse adolescents in the US ($N = 162,034$) (20). These individuals were queried regarding how often in the last month they had experienced discrimination based on a variety of facets, including their weight/physical appearance. When looking at the entire sample, individuals were more likely to be victimized for their weight or physical appearance (22.6%) than for their race/ethnicity (9.1%), sexual orientation (7.3%), or disability status (5.6%). Prevalence of weight-based discrimination for those with overweight and obesity were between 25-40%.

Correlates of Discrimination in Youth

Building on the adult literature, research consistently suggests correlations between discrimination and adverse mental and physical health outcomes among youth. Studies assessing youth demonstrate relationships between discrimination and greater rates of depression (4; 129; 152), anxiety (65; 96; 129), eating and weight pathology (58; 100; 107; 140), and suicidality (4; 131; 152).

CURRENT STUDY

While specific prevalence may differ across samples, all of the available evidence suggests perceived discrimination is pervasive among those with marginalized identities, with preliminary evidence for an additive effect of different forms of discrimination on negative outcomes (28; 51). However, the majority of research to date has focused on

narrow populations, assessed primarily adults, and relied heavily on cross-sectional data. Additionally, the existing data are mixed regarding the relationships between specific identity facets (i.e. race/ethnicity) and risk for adverse outcomes. Therefore, it is imperative to gain a deeper understanding of how discrimination based on various identity facets can impact mental and physical well-being in children over time. In order to fill this gap, the current study focuses on a large and diverse sample of youth, assesses discrimination based on various identity facets, and looks at the relationships between various identity facets, experiences of discrimination, and mental health outcomes prospectively, utilizing data from the same individuals over a two-year time span. Additionally, the current study assesses the relationship between discrimination and a range of mental health outcomes in young children, which is a critical period for early intervention and identification of modifiable risk factors for psychopathology and health (84). The sample is comprised of children ages 9-12, which is not only an age range in which the experience of teasing/discrimination is prevalent (123; 134), but also a time in which children become more vulnerable to the development of depression, anxiety, eating disorders, and associated psychopathology (25; 30; 55; 64; 143). Additionally, the effects of discrimination in childhood and adolescence may have lasting impacts, making it crucial to examine these experiences at a young age and underscoring the importance of assessing these relationships longitudinally (51). As such, assessing a number of different outcomes during such a vulnerable developmental stage could have important implications for intervention efforts and prevention of adverse outcomes. Therefore, the current study utilizes a measure of discrimination that captured four attributes: race/ethnicity/color, perceived sexual orientation, country of origin, and weight status.

Additionally, while there is robust evidence supporting the relationship between perceived discrimination and adverse outcomes in adolescents and adults, these relationships remain understudied in children. Determining whether specific types of discrimination are linked to pathology in youth is especially pertinent, as childhood is a crucial developmental period for the onset of these mental health concerns (25; 73; 91; 118). Thus, identifying relationships between specific types of discrimination and the outcomes of interest could have critical implications for prevention. Therefore, the current study assesses longitudinal associations between perceived discrimination based on multiple attributes and mental health outcomes among children utilizing data from the Adolescent Brain Cognitive Development Study.

The current study utilizes a model (see *Figure 1*) that conceptualizes perceived discrimination based on a variety of facets (race/ethnicity, sexual/gender identity, weight, and nationality) as a mediator between minority status and physical/psychological health outcomes. This study assesses the direct relationship between minority status and indices of mental health, and explores the role of discrimination as a pathway between minority status and psychological outcomes.

AIMS & HYPOTHESIS

Aim 1. Identify the prevalence of discrimination based on race/ethnicity/color, perceived sexual orientation, nationality, and weight among youth in the ABCD study.

Aim 2a. Test the relationship between marginalized identity and mental health outcomes (eating pathology, mood disorders, and suicidality) at 2-year follow-up.

Hypothesis 2a. Those who hold marginalized identities will be more likely to report eating disorders, mood disorders, and suicidality compared to their peers who do not hold minority identities.

Exploratory Aim 2b. Given the inconsistent results in the literature, determine which specific racial/ethnic groups may have higher prevalence of mental health outcomes.

Aim 2c. Investigate whether the association between marginalized identity and mental health outcomes at 2-year follow-up is partially mediated by discrimination reported at 1-year follow-up.

Hypothesis 2c. The experience of discrimination will partially mediate the association between marginalized identity and mental health outcomes at the 2-year follow-up.

CHAPTER TWO: METHODS

DESIGN AND PARTICIPANTS

The current study is a secondary analysis of data from the Adolescent Brain and Cognitive Development (ABCD) Study. The parent study is a multi-site, 10-year longitudinal protocol comprised of a comprehensive set of physical, psychological, and cognitive assessments. The sample includes over 12,000 children who are followed from age 9 or 10 until they are 19 or 20 years old. At the time of the current study, the data have only been collected for the first two years of the study. Participants represent diverse racial, ethnic, socioeconomic, and educational backgrounds (67). Children and parents complete in-person visits at their study site each year, as well as brief mid-year

phone calls. De-identified data are released annually through the NIMH data archive, which has already been accessed by the research team and will be utilized for the current study's analyses.

Participants in this study are 9 to 13 year old children enrolled in the Adolescent Brain and Cognitive Development (ABCD) study

(<https://abcdstudy.org/scientists/protocols/>). All data for the current analyses were derived from the in-person baseline, one-year, and two-year follow-up visits. Further information on the parent study can be found elsewhere (142). Participants who completed the ABCD Youth Discrimination Measure and the KSADS in full were included in the current study. Parents and children provide written consent and assent, respectively. Procedures were approved by the Uniformed Services University Institutional Review Board.

MEASURES

Demographics

Participants completed a demographic questionnaire, including age, sex, racial/ethnic identity, nationality, and height and weight. For race and ethnicity, parents selected the option that best describe their child's identity. Due to low cell counts, those who responded Asian, Native Hawaiian and Pacific Islander, Native American, Multi-Racial and Other were combined into one category labeled "Other". Notably, those who identified as Hispanic for their ethnicity were not able to select a separate racial identity. Those who did not identify as non-Hispanic White were considered racial/ethnic minorities (REM). Nationality was dichotomized into those who were born within and outside of the United States. Children are queried via computerized questionnaire (e.g.

“Are you gay or bisexual?”, “Are you transgender?”). Response options include “yes,” “maybe,” “no,” and “I do not understand this question.” In accordance with prior convention, youths responding “yes” or “maybe” to either item were coded as probable sexual and/or gender minorities (SGM). While SGM status is an evolving process, the literature on development suggests that gender identity starts to develop as young as 3-5 years old (39; 94), while sexual orientation typically comes later in early adolescence (22). Height and weight were measured twice and averaged. Body mass index percentile and standardized scores were calculated using the US Center for Disease Control and Prevention growth standards adjusting for age and sex (77). BMI percentiles between 85%-95% indicated presence of overweight; percentiles higher than 95% indicated presence of obesity. Specific demographic information can be found in Table 1.

Discrimination

Participants completed the ABCD Youth Discrimination Questionnaire, a 4-item self-report measure created for the study that assesses discrimination in the past year based on: weight, race/ethnicity, perceived sexual orientation, and nationality.

Discrimination was measured at 1-year follow-up and included the following four questions: In the past 12 months, have you felt discriminated against: 1) because of your race, ethnicity, or color; 2) because you are (or your family is) from another country?; 3) because someone thought you were gay, lesbian, or bisexual?; 4) because of your weight? Response options included “yes”, “no”, and “don’t know.” Of note, this measure has not been validated or used outside of the parent study.

Mental Health Outcomes

A computerized semi-structured diagnostic interview (Kiddie Schedule for Affective Disorders and Schizophrenia for School-Aged Children for *Diagnostic and Statistical Manual of Mental Disorders* [Fifth Edition]- KSADS-PL) was administered to assess sub- and full-threshold disorders. The KSADS-PL assesses current (within the last month) and lifetime psychiatric diagnoses and symptomatology among children. This measure has displayed concurrent, interrater (93-100% agreement), and test-retest reliability (κ coefficients= .63-1.00) (68). This measure was utilized to assess mood disorders (e.g. major depressive disorder, bipolar disorders, persistent depressive disorder, disruptive mood dysregulation disorder, panic disorder, agoraphobia, separation anxiety, social anxiety, generalized anxiety disorder, un-/other-specified mood disorders), suicidal ideation (passive and active) and behaviors (attempts, interrupted attempts, aborted attempts, and preparatory actions), and eating disorders (binge eating disorder, anorexia nervosa, bulimia nervosa, and other specified feeding or eating disorder) at baseline and 2-year follow-up. Outcomes were assessed using the current diagnoses at 2-year follow-up, adjusting for presence of the diagnosis at baseline. All analyses utilized child-report except for the presence of eating disorders at baseline which was only assessed by parent-report at that time point.

STATISTICAL ANALYSES

All analyses were conducted using SPSS Version 27. For Aim 1, descriptive statistics were used for the four facets of discrimination, highlighting the percentage of experiences of discrimination at year 1. Aim 2a sought to test the relationship between minority identity and mental health outcomes (eating pathology, mood disorders, and suicidality) at 2-year follow-up. For Aim 2a, multiple logistic regressions were conducted

with the identity facets (REM status, SGM status, nationality, and weight status) as the independent variables and the mental health outcomes (mood disorders, eating disorders, suicidal ideation, and suicidal behaviors) as the dependent variables, which tested the *c* path of the mediation model. These analyses adjusted for age, sex, and diagnosis at baseline; race/ethnicity was added as a covariate for the models in which it was not an independent variable. BMIz was included when assessing the eating disorder outcomes due to correlations between eating pathology and weight status (31). Aim 2c sought to investigate whether the association between minority status and mental health outcomes at 2-year follow-up is partially mediated by discrimination reported at 1-year follow-up. For Aim 2c, following the Baron and Kenny method (11), logistic regression was used to establish mediation. Each path of the mediation model was modeled with a logistic regression. The *a* path tests the relationship between the independent variable and the mediator, the *b* path tests the relationship between the mediator and the dependent variable, while holding the independent variable constant, and the *c'* path tests the relationship between the independent variable and the dependent variable while holding the mediator constant. Using this method, partial mediation is determined if the effect of the independent variable on the dependent variable in the presence of the mediator remains significant but is modified. Full mediation is determined if the effect of the independent variable on the dependent variable is no longer significant in the presence of the mediator. All tests were two-tailed, and differences were considered significant either when *p*-values were $< .05$ or when the confidence interval did not contain 1, as appropriate. Given the number of tests conducted, *p*-values for *a*, *b*, and *c'* paths were adjusted using the Benjamini-Hochberg method, familywise for each mediation model.

The adjusted p-values are presented throughout the results section and tables. Even in the absence of a significant association between the independent variable and the dependent variable, the mediation analyses were all still conducted in accordance with previous convention (104; 117).

The first set of models used race/ethnicity at baseline as the independent variable and racial discrimination at 1-year as the mediator. The second set of models used probable SGM status at baseline as the independent variable and discrimination based on perceived sexual orientation at 1-year as the mediator. The third set of models used nationality at baseline as the independent variable and discrimination based on nationality at 1-year as the mediator. The fourth set of models used weight status at baseline as the independent variable and weight-based discrimination at 1-year as the mediator. For each relationship, four models were conducted using each outcome variable at 2-years as the dependent variable (mood disorders, eating disorders, suicidal ideation, and suicidal behaviors). All analyses adjusted for age, sex, presence of the respective dependent variable at baseline; race/ethnicity was added for a covariate for the models in which it was not an independent variable. BMIz was included as a covariate when assessing eating disorder outcomes.

CHAPTER THREE: RESULTS

DESCRIPTIVE STATISTICS

There were 11,878 participants included at baseline ($M_{age} = 9.9y$, 47.8% female). Just over half the sample identified as non-Hispanic White ($n = 6,179$, 52.2%), with 15.5% of the sample identifying as non-Hispanic Black ($n = 1,782$), 20.4% identifying as Hispanic/Latinx ($n = 2,411$), and 12.3% categorized as “Other,” to include Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, Multi-Racial, and

Other/Unknown. Most of the sample was born in the United States ($n = 11,522, 97.0\%$). One-hundred-ninety individuals identified as probable sexual and/or gender minorities (1.6%; SM = 151; GM = 58). A third of the sample had overweight or obesity ($n = 3797, 32.0\%$). At baseline, 6.0% had a probable sub-or full-threshold mood disorder, 10.3% had a probable sub-or full-threshold eating disorder, 2.2% reported suicidal ideation, and 0.6% reported suicidal behaviors. At 2-year follow-up, 4.6% of the sample had a probable sub-or full-threshold mood disorder, 3.8% had a sub-or full-threshold eating disorder, 1.4% reported suicidal ideation, and 0.4% reported suicidal behaviors. Participant characteristics for the entire sample are shown in Table 1.

AIM 1: PREVALENCE OF DISCRIMINATION

Perceived discrimination based on weight was the most common form reported by participants ($n = 654, 6.1\%$), followed by race/ethnicity/color ($n = 472, 4.5\%$), perceived sexual orientation ($n = 408, 3.9\%$), and nationality ($n = 177, 1.6\%$) (Table 1).

AIM 2A: RELATIONSHIP BETWEEN MARGINALIZED IDENTITY AND MENTAL HEALTH OUTCOMES

For the following analyses, whereas the significance of the overall model denotes the impact of race/ethnicity as a whole on a particular outcome, group differences denote a difference in the odds ratio when a particular racial/ethnic category was compared to the reference group (Non-Hispanic White).

REM status and outcomes

The omnibus test for REM status was significant in the model predicting mood disorders ($p = .02$). Further, those categorized in the “other” group for race/ethnicity were significantly more likely to have a mood disorder compared to non-Hispanic White

individuals (OR: 1.69, CI: 1.21 – 2.35). REM status was not significant in the overall model predicting eating disorders ($p = .076$); however, non-Hispanic Black individuals were significantly less likely to report an eating disorder at 2 years compared to non-Hispanic White individuals (OR: 0.47, CI: 0.23 – 0.98). REM status was not significant in the model predicting suicidal ideation ($p = .36$) nor suicidal behavior ($p = .15$); however, Hispanic individuals were more likely to report suicidal behavior at 2 years compared to non-Hispanic White individuals (OR: 2.52, CI: 1.02 – 6.23).

SGM status and outcomes

SGM status was not significant in the models assessing mood disorders (CI: 0.98 – 3.86), suicidal ideation (CI: 0.77 – 6.43), nor suicidal behavior (CI: 0.23 – 14.33). The cell counts were too low to use a predictive model for SGM status and eating disorders (only two individuals who identified as probable SGM reported eating disorders at 2-year follow-up). A Fisher's Exact Test was conducted to assess group differences and revealed that the percentage of individuals with eating disorder diagnoses did not differ between those with and without probable SGM identities categories ($p = .59$).

Nationality and outcomes

Nationality was not significant in the models assessing mood disorders (CI: 0.22 – 1.33), eating disorders (CI: 0.14 – 2.44), nor suicidal ideation (CI: 0.32 – 3.40). The cell counts were too low to use a predictive model for nationality and suicidal behavior (only one individual born in the US reported suicidal behavior at 2-year follow-up).

Weight status and outcomes

Weight status was not predictive in the models assessing mood disorders (CI: 0.74 – 1.24), suicidal ideation (CI: 0.53 – 1.37), nor suicidal behavior (CI: 0.39 – 2.16).

However, those with overweight/obesity had lower odds of reporting an eating disorder at 2 years compared to lean individuals (OR: .23, CI: 0.12 – 0.45).

AIM 2C: MEDIATION ANALYSES ASSESSING ASSOCIATION BETWEEN MARGINALIZED IDENTITY, DISCRIMINATION, AND MENTAL HEALTH OUTCOMES

Racial Ethnic Minority Status

REM status, racial discrimination and mood disorders

REM status was significantly associated with racial discrimination (a , $p < .003$), such that all racial/ethnic categories had greater odds of experiencing discrimination when compared to their non-Hispanic White counterparts (see Table 3b for specific odds ratios). Racial discrimination was significantly associated with the presence of a mood disorder (b , OR: 2.05, CI: 1.28 – 3.30). Per Aim 2a, REM status was significant in the model predicting mood disorders (c , $p = .02$). After adjusting for discrimination at 1-year, the direct effect of REM status on mood disorders was no longer significant (c' , $p = .14$). Therefore, due to the change in the relationship between REM status and mood disorders from significant to non-significant when accounting for the mediator, results suggest that discrimination based on race significantly mediated the relationship between REM status and mood disorders.

REM status, racial discrimination and eating disorders

REM status was significantly associated with racial discrimination (a , $p < .003$); however, racial discrimination was not significantly associated with eating disorders (b , CI: 0.11 – 1.95). Per Aim 2a, REM status was not significant in the overall model predicting eating disorders (c , $p = .076$). After adjusting for discrimination at 1-year, the direct effect of REM status on mood disorders was not significant (c' , $p = .39$).

Therefore, there was no evidence for mediation because the overall predictive model between REM status and eating disorders was not significant.

REM status, racial discrimination and suicidal ideation

REM status was significantly associated with racial discrimination (a , $p < .003$) and racial discrimination was significantly associated with suicidal ideation (b , OR: 4.35, CI: 2.31 – 8.20). Per Aim 2a, REM status was not significant in the model predicting suicidal ideation (c , $p = .36$). After adjusting for discrimination at 1-year, the direct effect of REM status on suicidal ideation (c' , $p = .57$) was not significant. Therefore, there was no evidence for mediation because the overall predictive model between REM status and suicidal ideation was not significant.

REM status, racial discrimination and suicidal behaviors

REM status was significantly associated with racial discrimination (a , $p < .003$). Racial discrimination was significantly associated with suicidal behavior (b , OR: 10.26, CI: 4.0 – 26.34). Per Aim 2a, REM status was not significant in the model predicting suicidal behavior (c , $p = .15$). After adjusting for discrimination at 1-year, the direct effect of REM status on suicidal ideation (c' , $p = .14$) was not significant. Therefore, there was no evidence for mediation because the overall predictive model between REM status and suicidal behavior was not significant and remained non-significant with the addition of the mediator.

Probable Sexual and/or Gender Minority Status

SGM status, perceived sexual orientation discrimination and mood disorders

SGM status was significantly associated with perceived sexual orientation discrimination (a , OR: 5.63, CI: 3.69 – 8.61), and perceived sexual orientation

discrimination was significantly associated with the present of a mood disorder (b , OR: 3.36, CI: 2.20 – 5.13). Per Aim 2a, SGM status was not significant in the model assessing mood disorders (c , CI: 0.98 – 3.86). After adjusting for discrimination at 1-year, the direct effect of SGM status on mood disorders (c' , CI: 0.58 – 2.84) was not significant. Therefore, there was no evidence for mediation because the overall predictive model between SGM status and mood disorders was not significant.

SGM status, perceived sexual orientation discrimination and eating disorders

Given that only 2 people identifying as SGM reported eating disorders at 2-year follow-up, the cell counts were too low to use a predictive model for SGM status and eating disorders.

SGM status, perceived sexual orientation discrimination and suicidal ideation

SGM status was significantly associated with perceived sexual orientation discrimination (a , OR: 6.02, CI: 3.95 – 9.17), and perceived sexual orientation discrimination was significantly associated with suicidal ideation (b , OR: 4.23, CI: 2.20 – 8.12). Per Aim 2a, SGM status was not significant in the model assessing suicidal ideation (c , CI: 0.77 – 6.43). After adjusting for discrimination at 1-year, the direct effect of SGM status on suicidal ideation (c' , CI: 0.51 – 5.02) was not significant. Therefore, there was no evidence for mediation because the overall predictive model between SGM status and suicidal ideation was not significant.

SGM status, perceived sexual orientation discrimination and suicidal behaviors

SGM status was significantly associated with perceived sexual orientation discrimination (a , OR: 6.33, CI: 4.17 – 9.62). Perceived sexual orientation discrimination was not significantly associated with suicidal behaviors (b , CI: 0.91 – 12.75). Per Aim 2a,

SGM status was not significant in the model assessing suicidal behavior (c , CI: 0.23 – 14.33). After adjusting for discrimination at 1-year, the direct effect of SGM status on suicidal behavior (c' , CI: 0.12 – 11.24) was not significant. Therefore, there was no evidence for mediation because the overall predictive model between SGM status and suicidal behavior was not significant.

Nationality

Nationality, nationality-based discrimination and mood disorders

Nationality was significantly associated with nationality-based discrimination (a , OR: 2.98, CI: 1.77 – 4.98). Nationality-based discrimination was not significantly associated with mood disorders (b , CI: 0.74 – 3.69). Per Aim 2a, nationality was not significant in the model assessing mood disorders (c , CI: 0.22 – 1.33). After adjusting for discrimination at 1-year, the direct effect of nationality on mood disorders (c' , CI: 0.16 – 1.22) was not significant. Therefore, there was no evidence for discrimination as a mediator in the model for nationality and mood disorders.

Nationality, nationality-based discrimination and eating disorders

Nationality was significantly associated with nationality-based discrimination (a , OR: 2.90, CI: 1.39 – 6.06). Nationality-based discrimination was not significantly associated with eating disorders (b , CI: 0.13 – 7.54). Per Aim 2a, nationality was not significant in the model assessing eating disorders (c , CI: 0.14 – 2.44). After adjusting for discrimination at 1-year, the direct effect of nationality on eating disorders (c' , CI: 0.04 – 2.18) was not significant. Therefore, there was no evidence for mediation because the overall predictive model between nationality and eating disorders was not significant.

Nationality, nationality-based discrimination and suicidal ideation

Nationality was significantly associated with nationality-based discrimination (a , OR: 2.85, CI: 1.71 – 4.78). Nationality-based discrimination was not significantly associated with mood disorders (b , CI: 0.92 – 7.83). Per Aim 2a, nationality was not significant in the models assessing suicidal ideation (c , CI: 0.32 – 3.40). After adjusting for discrimination at 1-year, the direct effect of nationality on mood disorders (c' , CI: 0.33 – 3.48) was not significant. Therefore, there was no evidence for discrimination as a mediator in the model assessing nationality and suicidal ideation.

Nationality, nationality-based discrimination and suicidal behavior

Only one person born in the United States reported suicidal behavior at 2-year follow-up, thus the cell counts were too low to use a predictive model to assess nationality and suicidal behavior.

Weight Status

Weight status, weight-based discrimination and mood disorders

Weight status was significantly associated with weight-based discrimination (a , OR: 4.91, CI: 4.12 – 5.85) and weight-based discrimination was significantly associated with mood disorders (b , OR: 3.10, CI: 2.11 – 4.55). Per Aim 2a, weight status was not predictive in the model assessing mood disorders (c , CI: 0.74 – 1.24). After adjusting for discrimination at 1-year, the direct effect of weight status on mood disorders (c , CI: 0.57 – 1.04) was not significant. Therefore, there was no evidence for mediation because the overall predictive model between weight status and mood disorders was not significant.

Weight status, weight-based discrimination and eating disorders

Weight status was significantly associated with weight-based discrimination (a , OR: 5.84, CI: 4.54 – 7.50) and weight-based discrimination was significantly associated

with eating disorders (b , OR: 3.79, CI: 1.90 – 7.59). Per Aim 2a, weight status was predictive in the model assessing eating disorders (c , OR: .23, CI: 0.12 – 0.45). After adjusting for discrimination at 1-year, the direct effect of weight status on eating disorders (c' , OR: 0.14, CI: 0.06 – 0.31) was significant. Therefore, due to the change in the effect size (odds ratio) in the relationship between weight status and eating disorders when accounting for discrimination, results suggest that weight-based discrimination partially mediated the relationship between weight status and eating disorders. Those with overweight and obesity had even lower odds of reporting an eating disorder after accounting for weight-based discrimination when compared to lean individuals.

Weight status, weight-based discrimination and suicidal ideation

Weight status was significantly associated with weight-based discrimination (a , OR: 4.89, CI: 4.11 – 5.83) and weight-based discrimination was significantly associated with suicidal ideation (b , OR: 3.38, CI: 1.78 – 6.42). Per Aim 2a, weight status was not predictive in the model assessing suicidal ideation (c , CI: 0.53 – 1.37). After adjusting for discrimination at 1-year, the direct effect of weight status on suicidal ideation (c' , CI: 0.39 – 1.14) was not significant. Therefore, there was no evidence for mediation because the overall predictive model between weight status and suicidal ideation was not significant.

Weight status, weight-based discrimination and suicidal behavior

Weight status was significantly associated with weight-based discrimination (a , OR: 4.90, CI: 4.11 – 5.83). Weight-based discrimination was not significantly associated with suicidal behavior (b , CI: 0.92 – 9.60). After adjusting for discrimination at 1-year, the direct effect of weight status on suicidal behavior (c' , CI: 0.29 – 2.01) was not

significant. Per aim 2a, weight status was not predictive in the models assessing suicidal behavior (c , CI: 0.39 – 2.16). Therefore, there was no evidence for discrimination as a mediator for the model assessing weight status and suicidal behavior.

CHAPTER FOUR: DISCUSSION

SUMMARY OF FINDINGS

The current study provides insights into the relationships between marginalized identities, experiences of discrimination, and mental health outcomes in children. The findings suggest that the prevalence of discrimination among these youth differed based on discrimination type, with weight-based discrimination being the most prevalent. This may be demonstrative of the fact that appearance and body image are salient for children of this age, whereas concepts of racial differences, nationality, and sexual orientation may be less developed (22). However, some literature suggests that awareness of racial status and experiences of discrimination may begin by age six (35). It is also important to note that discrimination based on weight and race/ethnicity were the most common, both of which are the least concealable identities, potentially making children with these identities more vulnerable.

There were also significant relationships between REM status and mood disorders in the overall model such that REM youth had greater odds of reporting a mood disorder at year 2 compared to non-Hispanic White youth. Specifically, those categorized in the “Other” group had greater odds of a mood disorder compared to the non-Hispanic White reference group. This is in line with the literature that consistently shows higher prevalence of mood disorders among REM youth in the United States (6; 70; 86). There

were not significant differences in odds of having a mood disorder for non-Hispanic Black and Hispanic individuals compared to the White reference group, which contradicts some findings that Black and Hispanic individuals may have higher rates of mood disorders (81; 145), but is in line with other studies finding lower rates (7; 74).

Findings also showed a significant relationship between weight status and eating disorders such that those with overweight and obesity had lower odds of reporting an eating disorder at year 2 compared to lean individuals. This is contrast to some literature suggesting that those with overweight/obesity show greater odds of disordered eating and compensatory behaviors (90).

While the rest of the omnibus predictive models assessed in Aim 2a were not significant, the mediation analyses revealed some interesting and noteworthy patterns. There were consistent relationships between the various identity facets and discrimination based on that facet. In all models, those with marginalized identities (REM, probable SGM, those with high weight, and those born outside of the US) were more likely to experience discrimination based on that identity facet compared to groups who did not hold those identities.

Further, there were many significant findings between discrimination and mental health outcomes, suggesting a longitudinal link between discrimination and adverse mental health outcomes. Those who reported discrimination based on race/ethnicity had a greater odds of reporting mood disorders (2x the odds), suicidal ideation (4x the odds), and suicidal behavior (10x the odds), which is consistent with the literature among youth and adults (10; 24; 93). Those who reported discrimination based on perceived sexual orientation had a greater odds of reporting mood disorders (3.3x the odds) and suicidal

ideation (4.2x the odds), which is consistent with the literature that demonstrates higher rates of mood disorders and suicidality among SGM youth and the mediating role of discrimination (4; 17; 42). Those who reported weight-based discrimination had a greater odds of reporting mood disorders, eating disorders, and suicidal ideation, which is consistent with recent literature (110). These results are particularly interesting taken together with the significant relationship between weight status and eating disorders. The current findings suggest nuanced relationships between weight status, weight-based discrimination, mental health outcomes, though more research is needed to further elucidate the exact nature of these relationships.

Finally, there were a few models that demonstrated significant mediation. The relationship between REM status and mood disorders was mediated by racial discrimination such that in the relationship between REM status and the odds of a mood disorder was partially accounted for by the presence of racial discrimination. The relationship between weight status and eating disorders was partially mediated by weight-based discrimination such that within the presence of discrimination, those with overweight/obesity had lower odds of reporting an eating disorder, compared to lean individuals.

Notably, the lack of significant findings in the omnibus test for Aim 2a may suggest other factors at play that are not captured in the current analyses. For example, there may be resilience and protective factors especially among children with minoritized identities. One study found that familial strength/support, positive teacher relationships, neighborhood composition, and religiosity have all been supported as protective factors for depression in REM youth (121). Furthermore, with regard to REM status, diversity,

acceptance, and policy vary across geographic regions, states, and even town/city. Therefore, experiences of discrimination and associated sequelae likely vary depending on one's surroundings. In addition, body size acceptance and the ideal body type varies across culture. Therefore, experiences of weight-based discrimination and subsequent adverse outcomes may be different depending on the ideals within one's dominant culture. Additional systemic factors that were not captured in the current analyses include socioeconomic disparities, access and barriers to mental healthcare, and family/social non-acceptance, which are highly relevant when considering the relationship between marginalized identities and mental health.

STRENGTHS AND LIMITATIONS

Study strengths include the use a large, diverse sample of youth. Additionally, the use of a longitudinal approach is a notable strength, as it provided the opportunity to assess the relationships between minority identities, discrimination, and mental health outcomes over a two year time-frame. Furthermore, the measure of discrimination included various facets of discrimination and the mental health outcomes were assessed using a semi-structured clinical interview. Limitations include that the demographic question about race/ethnicity was coded in such a way that did not retain separate categories within those who identify as Hispanic. Therefore, the potential differences in experiences between Hispanic White individuals and Hispanic Black/Afro-Latinx individuals was unable to be captured. Additionally, the analyses for REM groups were categorized for statistical power in a way that grouped multiracial individuals with other REM groups. This group is the fastest growing category per the United States census (124) and may face unique identity related challenges that impact their well-being (119).

Therefore, future research should seek to retain as many unique racial/ethnic categories as possible in order to better understand the nuance of individual experience.

Furthermore, the discrimination measure was developed for the ABCD study and is not validated, which may have limited the ability to accurately capture discrimination in the current sample. This measure asked about discrimination based on perceived sexual orientation but did not assess gender identity. Also, at the time that the data was accessed only half of the participants' data was available at year 2, making the sample size significantly smaller for the analyses assessing outcomes at 2-year follow-up and impacting the ability to explore certain associations of interest (e.g. SGM status and eating disorders). Small cell counts impacted the ability to perform all analyses as planned and required the variable for race/ethnicity to be collapsed from eight categories to four. Eating disorder diagnoses at baseline were parent-reported and child-reported at 2-year follow-up. There was a lack of concordance between the prevalence of eating disorders at baseline (10%) versus at 2-year follow-up (4%). This may have been due to the items included at each time point to assess eating behavior, over-reporting by parents at baseline, or difficulty recalling and reporting eating/weight related behaviors at follow-up. Finally, the age range included in this study (9-11y) may be young to assess sexual orientation status, as this identity may continue to evolve throughout adolescence, making it plausible that the current study captured only a subset of those who may later identify as a sexual minority. Notably, 25% and 37% of the sample responded "I do not understand the question" to the questions about sexual orientation and gender identity respectively. Additionally, between 2.2% and 6% of individuals responded "Don't know"

to the questions included in the discrimination questionnaire, suggesting that a sizable proportion of children lacked familiarity with these constructs.

CONCLUSION

The findings in the current study suggest that early experiences of discrimination may be associated with early indicators of pathology, and that special care should be taken in assessing for experiences of discrimination and adverse outcomes among children with marginalized identities. Furthermore, there may be longitudinal impacts of holding a minority identity, experiencing discrimination based on that identity, and mental health outcomes. Future research should continue to assess these relationships longitudinally utilizing large sample sizes of diverse youth. These constructs should continue to be evaluated thoroughly among young children in order to further elucidate these relationships over time and inform clinical care. For example, it will be important to continue to assess the data from the ABCD study as this children progress through adolescence and young adulthood. Future studies may consider assessing how social and family support moderate the relationship between discrimination and adverse outcomes. Furthermore, studies should investigate the presence of multiple marginalized identities and how discrimination based on multiple identity facets may impact mental health outcomes. In turn, prevention strategies can be built with the foundational knowledge of the influence of different identity facets and forms of discrimination on pathology. School psychologists and teachers may also consider assessing discrimination and mental health symptoms in schools in order to identify prodromal psychopathology and intervene accordingly. Overall, these data underscore the significant harmful effects of stigma based on various identify facets on mental health among young children and

highlight the need for continued investigation of these relationships over time in order to best support the health and well-being of youth with marginalized identities.

Table 1. Participant Demographics

	Total Sample (<i>n</i> =11,878)
Age (years), <i>Mean (SD)</i>	9.9 (0.62)
Sex, <i>No. (%) female</i>	5,682 (47.8)
Race/Ethnicity, <i>No. (%)</i>	
Non-Hispanic White	6,179 (52.2)
Non-Hispanic Black/African American	1,782 (15.5)
Other	1454 (12.3)
Asian ^a	255 (2.2)
American Indian/Alaska Native ^a	39 (0.3)
Native Hawaiian/Pacific Islander ^a	13 (0.1)
Multi-Racial ^a	1,080 (9.1)
Other/Unknown ^a	67 (0.6)
Hispanic/Latinx	2,411 (20.4)
Nationality, <i>No. (%) non-US born</i>	356 (3.0)
Probable SGM, <i>No. (%)</i>	190 (1.6)
Weight Status, <i>No. (%)</i>	
Lean	8,069 (68.0)
Overweight/Obesity	3,797 (32.0)
Perceived Discrimination, <i>No. (%)</i>	
Race/Ethnicity/Color	472 (4.5)
Perceived Sexual Orientation	408 (3.9)
Nationality	177 (1.6)
Weight	654 (6.1)
Mood Disorders, <i>No. (%)</i>	300 (4.6)
Eating Disorders, <i>No. (%)</i>	244 (3.8)
Suicidal Ideation ^b , <i>No. (%)</i>	93 (1.4)
Suicidal Behavior ^c , <i>No. (%)</i>	27 (0.4)

Note: All demographics are reported at baseline, perceived discrimination is reported at 1 year, and all disorders are summarized as presence at 2 years. All percentages are reported based off of valid responses. ^a Categories combined into “Other” for racial/ethnic identity due to low cell counts at 2-years; ^b Includes present passive and active suicidal ideation; ^c Includes present preparatory actions, attempts, aborted attempts, and interrupted attempt; all disorders include both sub- and full-threshold diagnoses

Table 2. Frequency of Outcomes by Demographic Group

Frequency of Outcomes (evaluated at baseline, presence, n(%)) N _{total} = 11,878		Frequency of Outcomes (evaluated at 2 years, presence, n(%)) N _{total} = 6,487						
Identity Facets	Eating Disorders (parent report)	Mood Disorders	Suicidal Ideation	Suicidal Behavior	Eating Disorders (child report)	Mood Disorders	Suicidal Ideation	Suicidal Behavior
Racial/Ethnic Minority								
Non-Hispanic White	321 (10.4)	313 (5.1)	119 (1.9)	23 (0.4)	152 (4.1)	146 (4.0)	43 (1.2)	10 (0.3)
Non-Hispanic Black	78 (8.5)	156 (8.8)	46 (2.6)	17 (1.0)	17 (2.2)	42 (5.5)	13 (1.7)	2 (0.3)
Hispanic	127 (10.7)	145 (6.1)	60 (2.5)	14 (0.6)	38 (3.0)	60 (4.8)	21 (1.7)	9 (0.7)
Other	82 (11.7)	90 (6.2)	37 (2.6)	11 (0.8)	37 (4.8)	52 (6.8)	15 (2.0)	5 (0.7)
Probable SGM								
Yes	8 (8.9)	36 (19.1)	18 (9.6)	7 (3.7)	2 (2.1)	10 (10.3)	4 (4.1)	1 (1.0)
No	602 (10.3)	671 (5.8)	244 (2.1)	58 (0.5)	242 (3.8)	290 (4.5)	89 (1.4)	26 (0.4)
Nationality								
US-born	588 (10.3)	695 (6.1)	254 (2.2)	65 (0.6)	239 (3.8)	294 (4.7)	89 (1.4)	26 (0.4)
Non-US born	22 (11.4)	12 (3.4)	8 (2.3)	0 (0.0)	5 (2.7)	5 (2.7)	4 (2.1)	1 (0.5)
Weight Status								
Lean	524 (13.0)	457 (6.6)	169 (2.1)	44 (0.5)	210 (4.7)	207 (4.6)	66 (1.5)	19 (0.4)
Overweight/Obesity	85 (4.5)	250 (5.7)	93 (2.5)	21 (0.6)	34 (1.7)	92 (4.6)	27 (1.4)	8 (0.4)

Table 3a: Mediation analyses for nationality, probable SGM, and weight status

	a			b			c			c'		
	OR	95% CI	p-value for IV	OR	95% CI	p-value for IV	OR	95% CI	p-value for IV	OR	95% CI	p-value for IV
Mood Disorders												
<i>Probable SGM</i>	5.63	3.68 – 8.61	< 0.003	3.36	2.20 – 5.13	< 0.002	1.95	0.98 – 3.86	0.06	1.28	0.58 – 2.84	0.54
<i>Nationality</i>	2.98	1.77 – 4.98	< 0.003	1.65	0.74 – 3.69	0.27	0.54	0.22 – 1.33	0.18	0.44	0.16 – 1.22	0.11
<i>Weight status</i>	4.91	4.12 – 5.85	< 0.003	3.1	2.11 – 4.55	< 0.002	0.96	0.74 – 1.24	0.74	0.77	0.57 – 1.04	0.09
Eating Disorders												
<i>Probable SGM</i>	–	–	–	–	–	–	–	–	–	–	–	–
<i>Nationality</i>	2.9	1.39 – 6.06	0.02	0.99	0.13 – 7.54	0.99	0.59	0.14 – 2.44	0.47	0.3	0.04 – 2.18	0.35
<i>Weight status</i>	5.84	4.54 – 7.50	< 0.003	3.79	1.9 – 7.59	< 0.002	0.23	0.12 – 0.45	< 0.001	0.14	0.06 – 0.31	< 0.001
Suicidal Ideation												
<i>Probable SGM</i>	6.02	3.95 – 9.17	< 0.003	4.23	2.20 – 8.12	< 0.002	2.23	0.77 – 6.43	0.14	1.61	0.51 – 5.02	0.42
<i>Nationality</i>	2.85	1.71 – 4.78	< 0.003	2.68	0.92 – 7.83	0.12	1.05	0.32 – 3.40	0.94	1.07	0.33 – 3.48	0.91
<i>Weight status</i>	4.89	4.11 – 5.83	< 0.003	3.38	1.78 – 6.42	< 0.002	0.85	0.53 – 1.37	0.51	0.67	0.39 – 1.14	0.14
Suicidal Behavior												
<i>Probable SGM</i>	6.33	4.17 – 9.62	< 0.003	3.42	0.91 – 12.75	1.00	1.81	0.23 – 14.33	0.58	1.17	0.12 – 11.24	0.89
<i>Nationality</i>	–	–	–	–	–	–	–	–	–	–	–	–
<i>Weight status</i>	4.9	4.11 – 5.83	< 0.003	2.97	0.92 – 9.60	0.104	0.91	0.39 – 2.16	0.84	0.77	0.29 – 2.01	0.59

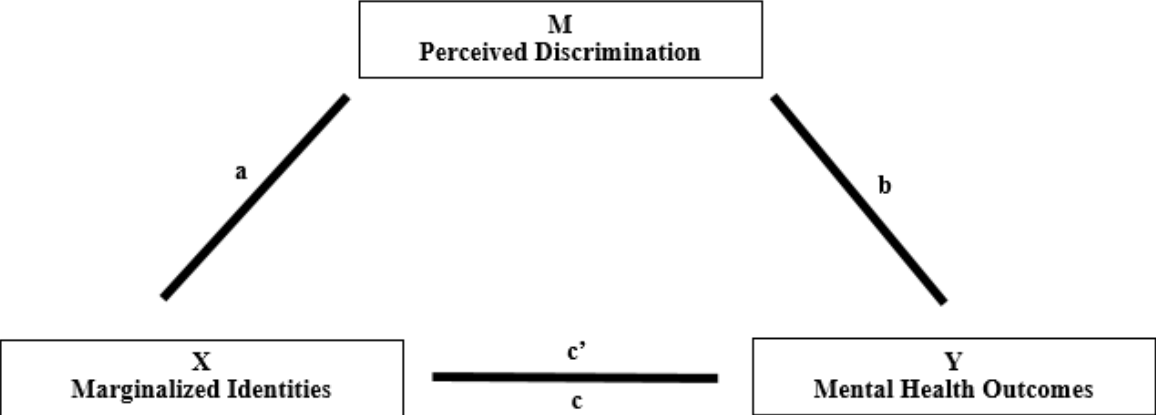
*Note: All models were adjusted for age, race/ethnicity, sex, and diagnoses at baseline. Eating disorder models adjusted for BMIZ. Reference category for nationality is US-born; reference category for probable SGM is non-SGM; reference for weight status is lean; a = relationship between identity facet (IV) and discrimination (DV); b = relationship between discrimination (IV) and outcome variable (DV); c = unadjusted relationship between identity facet (IV) and outcome variable (DV); c' = relationship between identity facet (IV) and outcome variable (DV) adjusted for discrimination (M). Bolded results indicate the presence of significant mediation in the model.

Table 3b: Mediation analyses for REM status

	a			b			c			c'		
	OR	95% CI	p-value (IV)	OR	95% CI	p-value (IV)	OR	95% CI	p-value (IV)	OR	95% CI	p-value (IV)
Mood Disorder												
<i>Non-Hispanic Black</i>	5.29	4.14 - 6.78	<0.003	2.05	1.28-3.30	0.005	1.28	0.89 - 1.84	0.02	1.15	0.77 - 1.73	0.14
<i>Hispanic</i>	2.53	1.94 - 3.30					1.21	0.89 - 1.65		1.22	0.87 - 1.72	
<i>Other</i>	3.14	2.36 - 4.19					1.69	1.21 - 2.35		1.53	1.06 - 2.21	
Eating Disorder												
<i>Non-Hispanic Black</i>	4.24	3.01 - 5.96	<0.003	0.47	0.11 - 1.95	0.3	0.47	0.23 - 0.98	0.08	0.48	0.21 - 1.12	0.39
<i>Hispanic</i>	1.99	1.38 - 2.88					0.60	0.35 - 1.02		0.71	0.41 - 1.25	
<i>Other</i>	2.4	1.59 - 3.63					0.97	0.56 - 1.69		1.01	0.56 - 1.81	
Suicidal Ideation												
<i>Non-Hispanic Black</i>	5.38	4.21 - 6.90	<0.003	4.35	2.31 - 8.20	<0.002	1.41	0.75 - 2.64	0.36	1.03	0.50 - 2.12	0.57
<i>Hispanic</i>	2.52	1.94 - 3.29					1.33	0.78 - 2.28		1.41	0.80 - 2.48	
<i>Other</i>	3.16	2.37 - 4.21					1.62	0.89 - 2.95		1.40	0.71 - 2.71	
Suicidal Behavior												
<i>Non-Hispanic Black</i>	5.39	4.21 - 6.90	<0.003	10.26	4.0 - 26.34	<0.002	0.85	.18 - 3.92	0.15	0.27	0.03 - 2.28	0.14
<i>Hispanic</i>	2.54	1.95 - 3.31					2.52	1.02 - 6.23		2.07	0.77 - 5.58	
<i>Other</i>	3.17	2.37 - 4.22					2.24	0.76 - 6.63		2.08	0.68 - 6.37	

*Note: All models were adjusted for age, race/ethnicity, sex, and diagnoses at baseline. Eating disorder models adjusted for BMIz. Reference category is "Non-Hispanic White"; a = relationship between REM status (IV) and racial discrimination (DV); b = relationship between racial discrimination (IV) and outcome variable (DV); c = unadjusted relationship between REM status (IV) and outcome variable (DV); c' = relationship between REM status (IV) and outcome variable (DV) adjusted for racial discrimination (M). Bolded results indicate the presence of significant mediation in the model.

Figure 1. Mediation model detailing the relationship between identity facets (REM stats, SGM status, nationality, and weight), perceived discrimination, and mental health outcomes.



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