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Introducing the Expectation Gradient: How Family, Social and Personal Resources Influence Psychological Well-Being Outcomes in Children of Black Immigrants

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Abstract

In immigrant households, academic success can represent a path toward upward mobility. For families whose socioeconomic standing are lower, achievement is especially salient, which can result in high expectations that follow immigrant youth. This research explores how academic expectations influence the psychological well-being outcomes of children. Drawing on a cross-sectional analysis from the National Survey of American Life-Adolescent Supplement (NSAL-A), this research examines if expectations of educational attainment and academic success contribute to a worsening of the psychological well-being of Black immigrant youth with Caribbean ancestry. Grounded in the stress process perspective—particularly Turner's iteration of the Pearlin model—the study investigates the role social and personal resources play in mediating and/or moderating the relationship between academic expectations and depressive symptomatology. Other important frameworks referenced and used in this research include the status attainment model and Andersen's health care utilization framework. Findings suggest that increased expectations are protective against depressive symptomatology, and that social and personal resources both mediate and moderate the relationship between stress and psychological well-being.

Keywords: educational attainment; expectations; depression; immigrant youth; parenting practice; family cohesion; family conflict; healthcare utilization; stress process; NSAL-A; academic success; Black heterogeneity

1. Introduction

In American society, failure to succeed academically has historically impacted labor participation, resource acquisition and health outcomes [1]. While this phenomenon has been studied extensively, what is notably missing from the conversation is how academic expectations influence the psychological well-being outcomes of children. This research seeks to investigate the effects of these expectations in an understudied population.

Drawing on a nationally representative survey conducted from 2001 to 2004, this research builds on Julien's discussion of the intersecting relationships among educational expectations, academic achievement and psychological well-being outcomes among second-generation youth [2]. The study also explores access and utilization of health care services and discusses how these factors can mediate well-being outcomes. Grounded in the stress process framework [3], and referencing the status attainment model and the health care utilization model [4], this study develops and proposes a framework for understanding the interdisciplinary association between social standing, expected educational merits and the psychological well-being of Black immigrant youth populations.

Check for updates

Academic Editor: Ştefan Cojocaru

Received: 26 September 2026
Revised: 16 October 2026
Accepted: 16 October 2026
Published: 21 October 2026

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The central questions guiding this research are as follows: 1. How does the socioeconomic position of Black immigrant families influence their expectations for their children's educational attainment? 2. How do these expectations affect the child, and are they able to meet them? and 3. What role do social resources play in explaining the relationship between parenting practices and health outcomes?

2. Literature Review and Theoretical Framework

The primary framework used to answer the central research questions is the stress process model. This model explains the relationships among stress, social support and health, and argues that stress exposure arises from the factors affecting one's life chances [2,5]. The model further argues that individuals exposed to more stressors and who possess the least resources are at greater risk of compromised health [2,6]. In this study, stress exposure is represented through academic outcomes and a proxy measure that captures parent expectations of educational attainment; research has shown that parents' academic expectations align with and predict students' own expectations [7]. Ultimately, whether a student is able to meet these expectations can introduce tension and role strain that gives rise to stress [8,9].

An additional model that offers interesting insights into the central research questions is the status attainment model. This model examines the relationship between educational aspirations and attainment. The model notes that society is stratified by background characteristics that reproduce status inequalities in successive generations, and that the influence of parents and their aspirations partially mediate the influence of background characteristics on attained status [10]. The central argument derived from the model is that individuals can achieve social mobility through social psychological mechanisms [10]. Ultimately, the model also posits (similarly to the status attainment model) that one's academic trajectory reflects, in part, the influence of parental aspirations.

2.1. Education as a Unique Measure

Relative to other measures of socioeconomic status, education is distinguished by activating knowledge, a sense of control, personal agency and learned effectiveness strategies. It equips the individual to question and reason against adopting health deteriorating trends. To immigrant parents' credit, the push for education has demonstrated empirical benefits beyond social mobility. The 'default American lifestyle' concept introduced by Mirowsky and Ross [11] presents an opportunity and scenario in which the use of education combats unhealthy lifestyles. The resistance to this deleterious lifestyle likely stems from the knowledge acquired (through education) and/or the sense of control one feels over one's life.

2.2. Quantity, Credential and Selectivity

While education's positive association with health is known, it remains unclear which aspect of education influences it. There are three central aspects of education, each of which interact with health in a unique way [12]. The quantity of education is the first aspect to assess. The number of years of formal education one has can shape socialization experiences and influence the effects of education in distinct ways. The credential aspect of education is the next to assess. Whether or not one possesses a college degree is significant in determining and understanding health lifestyles and dispositions. Finally, the selectivity aspect of education is worth discussing, as it poses the question of whether the elitism or prestige of an educational institution translates into superior instruction and resources necessary for optimal health.

Beginning with the quantity model, we find that the more time one spends in school, the more human capital one acquires [12,13]. This capital can be translated into resources

that support a healthy lifestyle. Additionally, years of schooling increase exposure to complex environments, which is found to increase cognitive skills [12,14]. Ultimately, the quantity model demonstrates that years of schooling "develop capacities that shape many of life's circumstances that ultimately affects health. . ." [12] (p. 459).

In contrast to the quantity model, the credential model is less concerned with time spent acquiring an education, and more focused on whether or not a degree was awarded [12]. The model views education as a symbolic means to an end, in part because degrees are used to screen applicants during hiring decisions [12,15]. As such, the findings indicate that the credential of the college degree confers no health benefit and is less important to health than the amount of education undertaken [12].

Finally, the selectivity model posits that institutional selectivity has a net association with health that is stronger than those posited by the preceding models. The argument is that the quality of the institution results in greater human capita, more extensive information and skills, and unique cultural capital, which support health lifestyles. Mirowsky and Ross [16] test this and find that even a low-quality education improves knowledge and skills, which can better inform healthier habits. In their analysis, the selectivity argument is challenged as unselective schools are shown to have health benefits for their students [16].

2.3. Education Throughout the Life Course

The statement "Benefit begets benefit and deficit begets deficit" by Mirowsky and Ross [17] speaks to the cumulative advantage and structural amplification capacity of education. Throughout one's life, education-based advantages and disadvantages accumulate [18–21]. Thus, as people age, the direction of their health outcomes can improve or worsen, in part due to education. This speaks to a point addressed earlier concerning resource substitution, in which the more accumulated resources one has (presumably from education), the less dependent one becomes on any one resource. Structural amplification is the inverse of this and suggests that disadvantaged origins decrease one's likelihood of gaining personal resources throughout the life course. It is important to note that a disadvantaged background does not automatically translate into a life characterized by deficits. One of the ways in which one avoids a life of disadvantage is through the acquisition of an education. Ross and Mirowsky [18] write that "individuals who attain high levels of educations themselves can sever, or at least attenuate, the poor health connection to disadvantaged family background" (p. 457). However, at what point is education's effect most pronounced: during childhood or adulthood?

2.4. Childhood and Adulthood Effects

While education's effects are salient throughout an individual's life, it is important to note that it is difficult to reverse years of accumulated disadvantage. Simply put, cumulative disadvantage should not be addressed toward the end of one's life, but rather throughout one's life course [17]. During childhood, for instance, we see demonstrations of the health selection process as it relates to education. Poor health in childhood has adverse effects on educational attainment, which, in turn, influences wealth and resource accumulation [1]. This process induces downward social mobility for those involved, and these conditions can end up having long-term consequences that are difficult to reverse [22]. During adulthood, differences in health outcomes are evidenced in the widened gaps in self-rated health that vary by educational level for middle-aged and older adults [23].

2.5. Education and Mental Health

The well-being benefits of education stem in large part from the freedom from economic hardship and poverty that it provides [24]. Being protected from these concerns means reducing one's allostatic load as chronic stress is subsided. Allostatic load refers to

the persistent and harmful changes in the regulatory system that stem from the demands of exposures or external events [17]. Education as a salient marker reduces allostatic load by providing individuals with the resources and skills required to cope with challenges in effective and efficient ways [17]. Moreover, as mentioned earlier, education's promotion of a sense of control is important for an individual's health. Those with a strong sense of control over their lives have lower levels of psychological distress [24–27]. However, are these effects uniform across sociodemographic characteristics? One way to answer this question is to explore the role of gender in this matter.

Research findings indicate that education reduces depression more for women than for men at any point throughout their life course [24]. Additionally, education is found to be more important to the emotional well-being of women than to that of men [24]. This is perhaps reflective of the resource substitution hypothesis, in which the disadvantaged benefit more from education than their advantaged counterparts. The historically unequal distribution of goods and resources between men and women highlights women's disadvantage [28]. Education, through the resources that it promotes and produces, offers a sense of personal control that women use, in turn, to design lives that directly improve their emotional well-being [24].

2.6. Black Caribbean Immigrant Mental Health

Immigrants of different racial and ethnic backgrounds experience lower mental disorder rates than their U.S.-born counterparts [29]. This is particularly true for Caribbean Blacks. Though grouped singularly, the heterogeneity within this group should be noted, as various island nations bring with them unique traditions, perspectives and colonization experiences [30]. Black Caribbeans often assimilate into predominantly African-American neighborhoods, where the burdens of a disadvantaged status, along with discrimination, are shared [31,32]. As a result, over time, the stigma associated with being Black and the increased exposure to minority status has adversely affected Black Caribbean immigrants [33]. This, in turn, has created within-group differences that depend on generation and/or wave of arrival. In short, length of residence influences health outcomes; those who have been in the United States for longer have higher rates of mental disorders [29,34–36]. Regarding this study's central focus, prior research has found that, relative to a West Indian identity, increased acculturation and an African-American identity are associated with lower academic achievement [37].

Regarding the life-course perspective, Williams and colleagues [36] report lifetime psychiatric disorder rates of 19, 35, and 55 percent among first-, second- and third-generation Black Caribbean immigrants, respectively. He also intersects gender within the analysis, identifying differences within this group. The depression, mental disorder and suicide attempt rates in Black Caribbean men are greater than for women [36,38]. This contrasts with overall rates that find that women experience higher rates of depression than their male counterparts. Having established that context matters, one explanation for these findings is that Black Caribbean men may find it difficult to cope with their newly assigned gender roles in America, if, for example, they were brought up in a more patriarchal society [36].

2.7. Group Composition Controversy

Read, Emerson and Tarlov [39] are among those who have emphasized the importance of heterogeneity among Black populations in explaining findings on Black immigrant health. Their research finds that grouping together foreign-born Blacks achieves nothing but convenience, and in fact prevents us from seeing the within-group differences that exist for Black immigrants.

2.8. The Assimilation and Acculturation Process

With a longer stay comes the question of influence. To what extent does the dominant culture into which one immigrates alter prior traditions, beliefs and customs? And is there an exchange? Answering these questions requires an understanding of the theories of assimilation and how they relate to the acculturation process. To begin, immigrant assimilation takes place when an immigrant or group adopts the traditions of the dominant culture, gradually losing the traditions and customs of their homeland. Two major theories concerning assimilation exist: the segmented and straight-line theories. Straight-line assimilation posits that positive outcomes of upward social mobility stem from the assimilation process, and that immigrant integration into the American mainstream is the path to be taken [40,41]. In contrast, segmented assimilation theory emerged as an alternative to the straight-line approach and instead posits that both positive and negative outcomes could stem from adaptations to American culture [40,42–44]. The straight-line approach appears to overlook the positive characteristics or buffers that immigrants might bring with them to United States. In this sense, full adoption of this approach poses a threat, as it seeks to eliminate protective factors that safeguard mental health.

By contrast, immigrant acculturation occurs when an immigrant or group integrates their native customs and traditions with the values of the surrounding (and presumably dominant) culture. In doing so, the two cultures blend and the potential for a sub-culture is formed. It is important to note that a convergence of these theories takes place as segmented assimilation theory helps to explain the acculturation through the consonant, dissonant and selective acculturation processes. Consonant acculturation, which occurs when immigrant groups (parents and children) learn American culture and gradually abandon their native customs, represents a path toward upward mobility [40]. Dissonant acculturation, which occurs when children adopt American customs faster than their parents, can represent a path toward downward assimilation in which parental support is lacking [40]. The acculturation hypothesis is consistent with this, as it posits an overall disadvantage in health outcomes for those whose cultural buffering weakens as they embrace U.S. norms [45–47]. Selective acculturation, which occurs when immigrant groups (parents and children) learn American customs while maintaining a sense of their native culture, can represent a path toward upward assimilation [40].

Whether through the assimilation or acculturation process, adapting to American culture presents both benefits and consequences. Together, these different theories offer compelling insights into the pathways through which mental issues can be either exacerbated or compensated through the adoption and/or relinquishment of culture.

2.9. Hypotheses

Based on the literature review and theoretical perspectives presented, the following hypotheses concerning depressive symptomatology and academic/educational stressors are proposed (see below). Comparison groups are specified in the hypotheses. For this dataset, African Americans serve as the reference group.

To test these hypotheses, a conceptual model (see Figure 1) is created. Drawing primarily from Turner's interpretation of the stress process model [48,49], this model explores the social characteristics of immigrant families and how parents' expectations for their children may serve as stressors that influence mental health outcomes.

Hypotheses (National Survey of American Life-Adolescent Supplement)
H_1. *Those who expect higher educational attainment will experience and report higher levels of depression.*
H_2. *Those who earn higher academic marks will experience and report lower levels of depression.*
H_{3a}. *Self-esteem will mediate the relationship between stress exposure and depression.*
H_{3b}. *The family conflict score will mediate the relationship between stress exposure and depression.*
H_{3c}. *Mastery will mediate the relationship between stress exposure and depression.*
H_{3d}. *Mental health care use will mediate the relationship between stress exposure and depression.*
H_{4a}. *The effect of parental expectations on depression will vary by family conflict score.*
H_{4b}. *The effect of parental expectations on depression will vary by self-esteem score.*
H_{4c}. *The effect of parental expectations on depression will vary by mastery score.*
H_{4d}. *The effect of parental expectations on depression will vary by mental health center use.*
H_{5a}. *The effect of academic achievement on depression will vary by family conflict score.*
H_{5b}. *The effect of academic achievement on depression will vary by self-esteem score.*
H_{5c}. *The effect of academic achievement on depression will vary by mental health center use.*

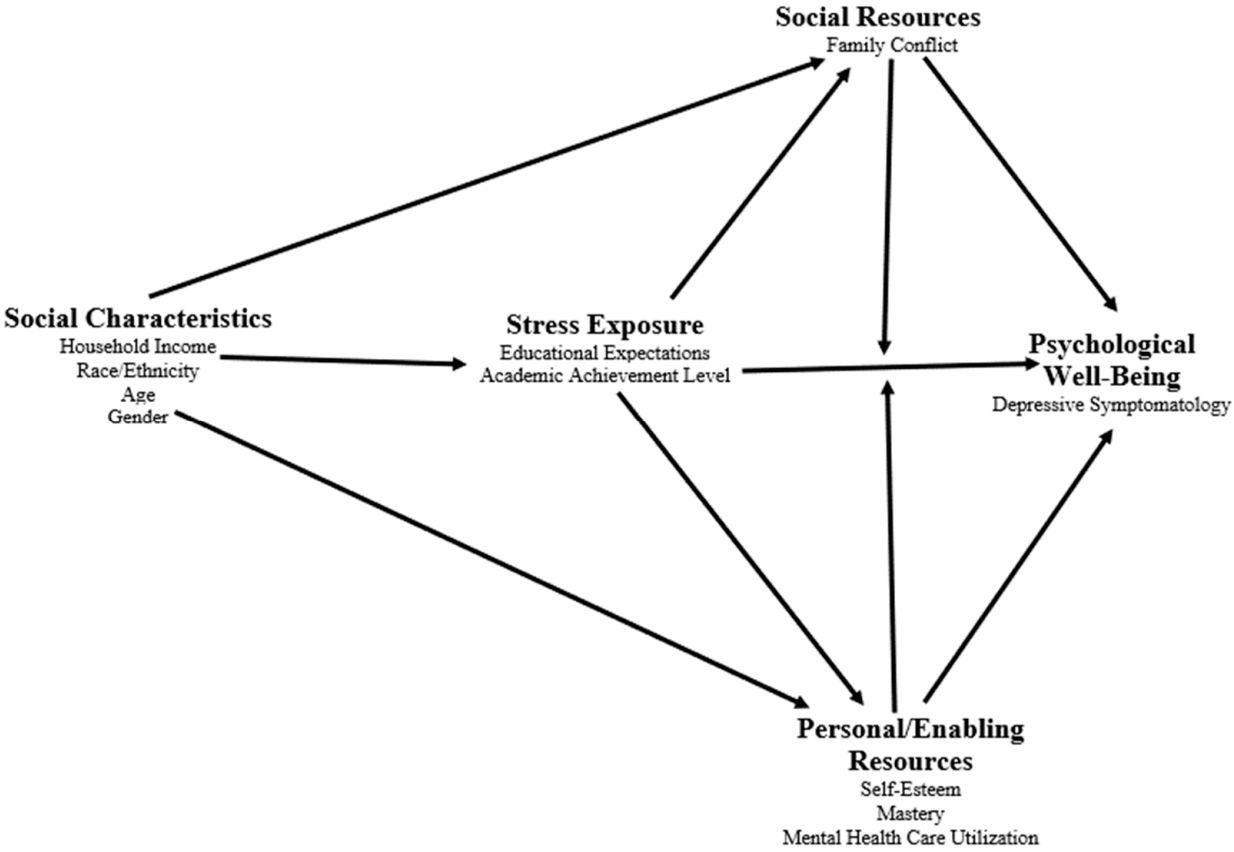


Figure 1. Conceptual Model.

3. Research Design and Methods

Data for the analysis were taken from the *National Survey of American Life-Adolescent Supplement* (**NSAL-A**) [50]. This dataset was chosen because of the unique opportunity it provides to distinctly test the stress process model concerning educational expectations as a stressor. This ultimately provides us with a better understanding of immigrant children and mental health. Additionally, the NSAL-A remains the definitive data source for studying the mental health of Black Caribbeans and African Americans through an examination of the psychosocial drivers of health [51,52]. Though over 20 years old, the data include the first significant probability sample of Black Caribbeans [52].

The *National Survey of American Life-Adolescent Supplement* was a cross-sectional ad-hoc follow-up study conducted between 2001 and 2004. In this study, a total of 1170 African-American and Caribbean Black youth were interviewed, all of whom were attached to the National Survey of American Life adult households. The age of respondents in the sample ranged from 13 to 17 years, and the survey was designed to estimate "lifetime to-date and current prevalence and comorbidity of DSM-IV disorders" (Jackson et al., 2016) [50]. The overall response rate was 80.6%, with African-American rates standing at 80.4% and Caribbean Black adolescents at 83.5%. In the current analyses, nearly 50 cases (4%) were excluded due to missing data for the key independent variables and dependent variables. This resulted in an analytic sample of 1120 respondents.

This research uses both bivariate and multivariate analyses to test the hypotheses. Formal tests for mediation and moderation are conducted [53]. The primary statistical method for measuring the association between academic achievement and depressive symptomatology is linear regression with OLS estimation.

This research uses both descriptive and bivariate statistics in its analyses. Formal tests for mediation and moderation are conducted [53]. The primary statistical method for measuring the association between academic achievement and depressive symptomatology is linear regression with OLS estimation. Regression analysis is conducted using the STATA (ver. 16) software package.

Measures

A comprehensive list of the measures used in the *NSAL-A* dataset is provided in Table 1 below. Tables 2–5 detail the measures according to their classification (outcome, independent, control).

Table 1. List of variables available in the dataset.

National Survey of American Life-Adolescent Supplement (NSAL-A) 2001–2004 Jackson et al. [50]	
Variables	
Depressive Symptomatology	✔
Socioeconomic Status	✔
Academic Performance	✔
Parent Education Expectations	✔
Race/Ethnicity	✔
Age	✔
Gender	✔
Family Conflict	✔
Self-Esteem	✔
Mastery	✔
Mental Health Care Utilization	✔

Table 2. Ethnicities Represented.

	National Survey of American Life-Adolescent Supplement (NSAL-A) 2001–2004 Jackson et al. [50]
Ethnicities Represented	Caribbean Black Youth Reference Group: African-American Youth

Table 3. Outcome Measure.

	National Survey of American Life-Adolescent Supplement **(NSAL-A) 2001–2004 Jackson et al. [50]**
Depressive Symptomatology	CES-D12 (12 item)

Table 4. Independent Variables.

	National Survey of American Life-Adolescent Supplement **(NSAL-A) 2001–2004 Jackson et al. [50]**
(Parent) Educational Expectations	Proxy for Parent Expectations- "How far in school do you think you will get?" 1. High-School Degree/Under 2. Community College/Trade 3. College Degree 4. Graduate or Professional School Degree
Academic Performance	Grades Received A B C D F Recoded to Category 0–Low Achievement (Ds and Fs) Category 1-Average Achievement (Cs) Category 2-High Achievement (As and Bs)
Resources	Rosenberg Self-Esteem Scale Mastery Family Conflict Mental Health Service Use

Table 5. Control Variables.

	National Survey of American Life-Adolescent Supplement **(NSAL-A) 2001–2004 Jackson et al. [50]**
Control Variables	Gender, Age, Income, Ethnic Background, Total Family Income

4. Outcome Variable

Outcome Measure, Depressive Symptomatology

The outcome examined in this dataset is depressive symptomatology. Depressive symptoms are measured using a 12-item measure ($\alpha = 0.68$) from the Center for Epidemiologic Studies Depression Scale [54]. The continuous measure is considered a highly reliable index, with the larger numbers representing poorer mental health. The scale included 12 questions that ask how often in the past week the respondent: (1) has felt just as good as others; (2) had trouble concentrating; (3) felt depressed; (4) felt that everything was an effort; (5) was hopeful about the future; (6) experienced restless sleep; (7) was happy; (8) felt people were being unfriendly; (9) enjoyed life; (10) experienced crying spells; (11) felt disliked; and (12) could not get going. Each of these questions include ordinal responses ranging from 1 to 4: 1 means rarely; 2 means some of the time; 3 means occasionally; and 4 means most of the time. Responses are summed to produce a depression index score that ranges from 0 to 36. To ensure that higher scores correspond to a higher level of depression, items 1, 5, 7, and 9 are reverse-coded.

5. Independent Variables

1. Independent Variables: Expectations, Performance and Resources

Important independent variables for this research include respondent educational attainment preference, student academic performance, and resources (social and/or enabling/personal). Educational attainment preference serves as a proxy for parent educational expectations. Respondents are asked "how far in school do you think you will get?" Six response categories are given for this question, including: (1) Will not graduate high school; (2) High-School Graduation; (3) Technical, Trade, Vocational School; (4) Community College; (5) University Degree; and (6) Graduate or Professional Degree. Several of these categories were collapsed due to low frequencies. In turn, four categories were created: (1) HS Degree/Less; (2) Community College/Trade; (3) College Degree; and (4) Graduate Degree.

5.1. Academic Achievement Level

To measure performance, self-reported grades are assessed. Respondents are asked "what kind of grades (do/did) you usually get?" Response categories to this question include: (1) mostly As; (2) mostly Bs; (3) mostly Cs; (4) mostly Ds; and (5) mostly failing grades. These categories were collapsed into three groups based on frequencies and created dummy variables. The first group (Category 0) represents "low achievement" and is the reference category; the second group (Category 1) represents "average achievement"; and the third group (Category 2) represents "high achievement". Category 0 is represented with the *Ds* and *Failing Grades* responses; Category 1 is represented with the *Cs* responses, and Category 2 is represented with the *As* and *Bs* responses. These all serve as dummy variables.

5.2. Resources

Measures pertaining to social and personal resources are assessed through the self-esteem, mastery and family conflict scales. Representing social support, the family conflict scale comprises three questions. The questions ask how often: (1) the family makes many demands of the respondent; (2) the family criticizes the respondent; and (3) the family takes advantage of the respondent. The response categories are coded from 1 to 4, where (1) represents *very often*, (2) represents *fairly often*, (3) represents *not too often*, and (4) represents *never*. The scale ($\alpha = 0.70$) is coded so that a higher number represents a more cohesive family unit.

Representing personal resources, a self-esteem measure is employed, modeled on the Rosenberg scale. The Rosenberg scale is a 10-item measure of self-worth that captures positive and negative feelings one may have about oneself [55]. The scale is unidimensional, and all items are answered using a 4-point Likert scale that ranges from strongly agree to strongly disagree [55]. The questions that make up the scale ask the respondent to note the extent to which they agree or disagree with the following statements: (1) I am satisfied with myself; (2) I think I am no good at all; (3) I have a number of good qualities; (4) I can do things as well as others; (5) I do not have much to be proud of; (6) I feel useless at times; (7) I am a person of worth, on an equal plane with others'; (8) I want more respect for myself; (9) I feel I am a failure; and (10) I take a positive attitude toward myself. The internal consistency of this scale is 0.77, which is satisfactory. A higher score on the scale corresponds to greater self-esteem and confidence.

Another personal resource measure used is mastery. Mastery ($\alpha = 0.68$) is measured using the Pearlin mastery scale [56], which is a seven-item scale that asks respondents how strongly they agree with the following statements: (1) there is now way to solve my problems; (1) I feel pushed around in life; (3) I have little control of what happens to me; (4) I can do anything I set my mind to; (5) I am helpless when dealing with life problems; (6) what happens to me in the future depends on me; and (7) there is little I can do to

change things in my life. The response categories to these questions range from 1 to 4, where 1 represents *strongly agree*, 2 represents *somewhat agree*, 3 represents *somewhat disagree*, and 4 represents *strongly disagree*. Responses are averaged to provide a range from 1 to 4. Items 4 and 5 are reverse-coded so that a higher score represents a higher level of mastery.

A final personal resource measure used is mental health service use. Mental health service use is measured using a single-item question. The question asks respondents if they have been to a community mental health center in the past year. Response categories are coded so that 0 = no, and 1 = yes.

6. Control Variables

The analyses control for gender, age, ethnic background, and family income. Gender is coded as a dummy variable where male is coded (0) and female is coded (1). Age is the respondent's number of years. Ethnic background is coded as a dummy variable where African-American is coded (0) and Caribbean Black is coded (1). The measure of income is used as an indicator of socioeconomic status. Income is derived from a question that asks respondents to identify their family income. Six response categories are provided: (1) $1 to $10,000; (2) $10,001 to $25,000; (3) $25,001 to $50,000; (4) $50,001 to $75,000; (5) $75,001 to $100,000; and (6) over $100,000. The weighted descriptive statistics for all variables in the analysis are provided in Table 6.

Table 6. Descriptive Statistics of the sample characteristics by ethnic background (**National Survey of American Life-Adolescent Supplement 2001–2004**).

	African-American	SD	Caribbean Descent	SD	Total Mean	SD	Range
Depressive Symptomatology	9.03	(5.34)	8.50	(5.03)	8.87	(5.25)	0–30
Parent Educ. Expectations *	2.68	(1.03)	2.96	(1.06)	2.77	(1.05)	1–4
HS Degree/Under (%)	17.82		14.74		16.87		
Comm. Coll./Trade (%)	20.64		13.29		18.38		
College Degree (%)	36.79		32.95		35.61		
Graduate Degree (%)	24.74		39.02		29.13		
Academic Achievement *	1.53	(0.59)	1.60	(0.61)	1.55	(0.60)	0–2
Low (%)	5.13		6.65		5.60		
Average (%)	36.92		26.88		33.84		
High (%)	57.95		66.47		60.57		
Household Income *	2.64	(1.19)	2.96	(1.14)	2.73	(1.18)	1–6
Self-Esteem	3.55	(0.42)	3.56	(0.41)	3.55	(0.42)	1.8–4
Family Conflict	1.98	(0.86)	2.06	(0.71)	2.00	(0.72)	1–4
Mastery	3.14	(0.55)	3.15	(0.54)	3.15	(0.55)	1.42–4
Age *	14.99	(1.44)	15.16	(1.37)	15.05	(1.42)	13–17
Female (%)	51.15		54.91		52.31		
Mental Health Care Access (%)	3.72		1.73		3.11		
N	780		346		1126		

* An asterisk indicates a significant difference between groups $p < 0.001$, chi-squared tests. One-way ANOVA is used to test significance for continuous variables.

7. Results

The summary of the results begins with the descriptive findings of the final analytic sample (demographic characteristics, predictor, mediating, and outcome measures). This is followed by formal tests for mediation (Sobel tests), and finally, the results of the progressive adjustment regression models and interaction models are presented.

7.1. Descriptive Findings

Table 7 displays the descriptive findings from the study, and the mean and percentage of the sample characteristics, along with their distribution by ethnic category. The findings

show relatively low depression scores for the respondents. The final sample had a mean score of 8.87 (wherein scores ranged from 0 to 30). The African-American sample reported the highest CES-D score, with a mean of 9.03, while the Caribbean Black sample reported a mean score of 8.50. In the total sample, the mean scores of the personal and social resources were as follows: self-esteem, 3.55 (wherein scores ranged from 1.48 to 4); family conflict, 2.00 (wherein scores ranged from 1 to 4); and mastery, 3.15 (wherein scores ranged from 1 to 4). A small percentage of the total population report having used a mental health center in the past year (3.11%). Overall, these descriptive statistics seem to suggest that respondents in the sample are high-achieving, have high self-esteem and mastery, and hold relatively high educational expectations.

Table 7. Means and standard deviations for variables of interest (**National Survey of American Life-Adolescent Supplement 2001–2004**).

	African-American	SD	Caribbean Descent	SD	Total Mean	SD	Range
Depressive Symptomatology	9.03	(5.34)	8.50	(5.03)	8.87	(5.25)	0–30
Parent Educ. Expectations *	(Table 3)	----	----	----	----	----	----
Self-Esteem	3.55	(0.42)	3.56	(0.41)	3.55	(0.42)	1.8—4
Acd. Achievement *	(Table 3)	----	----	----	----	----	----
Household Income *	2.64	(1.19)	2.96	(1.14)	2.73	(1.18)	1–6
Family Conflict	1.98	(0.73)	2.06	(0.71)	2.00	(0.72)	1–4
Mastery	3.14	(0.55)	3.15	(0.54)	3.15	(0.55)	1.42–4
Age *	14.99	(1.44)	15.16	(1.37)	15.05	(1.42)	13–17
Female (%)	51.15		54.91		52.31		
Mental Health Care Access (%)	3.72		1.73		3.11		
N	780		346		1126		

* An asterisk indicates a significant difference between groups $p < 0.001$, chi-squared tests. One-way ANOVA used to test significance for continuous variables.

Regarding gender, more than half (approximately 52%) of the total sample report being female. The average age of the respondents is approximately 15 years old. The mean score for household income corresponds to total earnings under $25,000, which is reflective of poor to working-class standing. Table 3 also shows the means and standard deviations, as well as the response categories of parents' educational expectations and academic achievement. Regarding educational expectations, the total sample reports high expectations, with nearly 65% believing they will earn either a college or graduate degree. These high expectations are especially pronounced in the Caribbean Black sample, where 39% of respondents report believing they will earn a graduate degree, and another 33% report believing they will earn a college degree.

Just over 33% of the total sample indicated achieving average academic marks. Sixty percent of the total sample indicated achieving high academic marks, while thirty-six percent reported achieving low marks. In the total sample, the distribution of each sample group's academic performance was as follows: African-American low-achieving (5.13%); African-American average-achieving (36.79%); African-American high-achieving (57.95%); Caribbean Black low-achieving (6.65%); Caribbean Black average-achieving (26.88%); Caribbean Black high-achieving (66.47%).

7.2. Regression Findings

Table 8 shows the regression models predicting the depressive symptomatology score of the sample. The unstandardized regression coefficients are presented. Informed by the stress process model, a progressive adjustment approach is employed to test how stressors and resources are associated with mental health outcomes. The first model is the reduced model and shows the regression of depressive symptomatology by ethnicity, while controlling for age, gender, and social class. As seen in the first model, social class is

negatively associated with depressive outcomes. A one-unit increase in income level (the categories are discussed in the previous chapter) reduces depression scores by a factor of 0.352 points ($p < 0.01$). This suggests that an increase in class status could be protective against depression.

The second model introduces the stressors of parent educational expectations and academic achievement level. Regarding the stressors: educational expectations yield significant associations. Compared to those who expect to finish high school or less, those who expect to attend trade school or community college have lower depression scores by a factor of b = 1.03 ($p < 0.05$). Similarly, the trend continues as educational expectations increase. For those who expect to earn a college degree, depression scores are weakened by a factor of b = 2.16 ($p < 0.001$). For those who expect to earn a graduate degree, depression scores are weakened by a factor of b = 2.73 ($p < 0.001$). This suggests that increased educational expectations could be protective against depression for this sample. Further, the inclusion of these variables suppressed the relationship between gender and youth depression. In Model 2, when adjusted for the stressors, the estimated association of being female and depressed increased to b = 0.801, ($p < 0.05$), compared to b = 0.284 in Model 1 (Table 8), an increase of 182 percent. The effect of social class loses significance with the addition of the stressor variables in the model.

The measure of academic achievement also appears to be protective against depressive symptomatology in Model 2. Compared to those with lower academic achievement, those who earn high academic marks in the classroom have lower depression scores by a factor of b = 1.96 ($p < 0.01$).

The third model adds family conflict as a social resource measure. The family conflict measure is significant. For the total sample population, a unit increase in family conflict increases the depression score by a factor of 2.21 points ($p < 0.001$). This suggests that increased conflict within the family is detrimental to the mental health of the participants. The inclusion of this measure suppresses the relationship between educational expectations and youth depression. Despite this suppression, higher expectations appear to remain protective against depression. In Model 3, when adjusted for family conflict, the estimated association of expecting a college degree (compared to the reference group) and being depressed increased to b = −1.817 ($p < 0.001$), compared to b = −2.159 in Model 2 (Table 8), an increase of about 16 percent. The same trend is observed for those expecting to earn a graduate degree, where the estimated association of expecting such a graduate degree (compared to the reference group) and being depressed increased to b = −2.261, compared to b = −2.727 in Model 2 (Table 8), an increase of about 17 percent.

The inclusion of the family conflict measure suppresses the relationship between academic achievement and youth depression in Model 3. When adjusted for family conflict, the estimated association of being high-achieving (compared to the reference group) and being depressed increased to b = −1.879 ($p < 0.01$), compared to b = −1.962 in Model 2 (Table 8), an increase of 4%. Despite the suppression, greater academic performance appears to remain protective against depression.

The fourth model uses self-esteem as a personal resource measure. Self-esteem is significant. For the total sample population, a unit increase in self-esteem decreases the depression score by a factor of 6.31 points ($p < 0.001$). This suggests that greater self-esteem could be protective against depression [57]. The inclusion of this measure suppresses the relationship between educational expectations and youth depression. In Model 4, when adjusted for self-esteem, the estimated association of expecting a college degree (compared to the reference group) and being depressed increased to b = −0.968 ($p < 0.001$), compared to b = −2.159 in Model 2 (Table 8), an increase of about 55 percent. The same trend is observed for those expecting to earn a graduate degree, where the estimated association of expecting

to achieve a graduate degree (compared to the reference group) and being depressed increased to b = −0.963, compared to b = −2.727 in Model 2 (Table 8), an increase of about 64 percent. The academic achievement stressor measure does not remain significant in this model (Model 4).

Table 8. Summary of Hierarchical Regression Analysis for Variables Predicting Immigrant Youth Depression (CES-D12) (N = 1126) (**National Survey of American Life-Adolescent Supplement 2001–2004**).

	Model 1 (Reduced)			Model 2 (Stressors)			Model 3 (Family Conflict)			Model 4 (Self-Esteem)		
Variable	***B***	***SE***	***β***	***B***	***SE***	***β***	***b***	***SE***	***β***	***B***	***SE***	***B***
Racial Ancestry (African-American) Caribbean	−0.428	(0.343)	−0.038	−0.198	(0.338)	−0.017	−0.390	(0.322)	−0.034	−0.340	(0.295)	−0.030
Household Income	−0.352 **	(0.134)	−0.079	−0.150	(0.133)	−0.034	−0.098	(0.126)	−0.022	−0.040	(0.116)	−0.009
Edu. Expectations (HS & Under)												
Community College/Trade				−1.025 *	(0.517)	−0.076	−0.860	(0.491)	−0.063	−0.468	(0.451)	−0.035
College Degree				−2.159 ***	(0.467)	−0.197	−1.817 ***	(0.445)	−0.166	−0.968 *	(0.412)	−0.088
Graduate Degree				−2.727 ***	(0.490)	−0.236	−2.261 ***	(0.469)	−0.195	−0.963 *	(0.437)	−0.083
Acd. Achievement (Low)												
Average-Achieving				−0.864	(0.705)	−0.078	−0.740	(0.671)	−0.067	−0.087	(0.615)	−0.008
High-Achieving				−1.962 **	(0.704)	−0.183	−1.879 **	(0.670)	−0.175	−0.749	(0.617)	−0.070
Resources												
Family Conflict							2.206 ***	(0.203)	0.303	---	---	---
Self-Esteem (Rosenberg)										−6.307 ***	(0.335)	−0.499
Mastery												
Mental Health Care Access												
Age	0.087	(0.110)	0.024	0.081	(0.107)		0.012	(0.102)	0.003	0.163	(0.094)	0.044
Female	0.284	(0.314)	0.027	0.801 *	(0.316)		0.688 *	(0.301)	0.065	0.615 *	(0.276)	0.059
Constant	8.507 ***	(1.686)		10.937 ***	(1.741)		7.140 ***	(1.692)		29.813 ***	(1.827)	
R^2	0.009			0.067			0.157			0.292		

	Model 5 (Mastery)			Model 6 (Mental Health Center)			Model 7 (All Effects)		
Variable	***B***	***SE***	***B***	***b***	***SE***	***β***	***B***	***SE***	***B***
Racial Ancestry (African-American) Caribbean	−0.381	(0.299)	−0.033	−0.179	(0.338)	−0.016	−0.468	(0.279)	−0.041
Household Income	−0.025	(0.117)	−0.006	−0.139	(0.133)	−0.031	0.022	(0.109)	0.005
Edu. Expectations (HS & Under)									
Community College/Trade	−0.520	(0.457)	−0.038	−0.967	(0.518)	−0.071	−0.269	(0.428)	−0.020
College Degree	−1.169 **	(0.416)	−0.107	−2.084 ***	(0.470)	−0.190	−0.630	(0.392)	−0.057
Graduate Degree	−1.016 *	(0.444)	−0.088	−2.649 ***	(0.494)	−0.229	−0.358	(0.419)	−0.031
Acd. Achievement (Low)									
Average-Achieving	−0.322	(0.623)	−0.029	−0.841	(0.705)	−0.076	0.015	(0.582)	0.001
High-Achieving	−0.887	(0.625)	−0.083	−1.947 **	(0.704)	−0.181	−0.521	(0.584)	−0.048
Resources									
Family Conflict	---	---	---	---	---	---	0.973 ***	(0.187)	0.134
Self-Esteem (Rosenberg)	---	---	---	---	---	---	−4.019 ***	(0.374)	−0.318
Mastery	−4.583 ***	(0.258)	−0.478	---	---	---	−2.655 ***	(0.283)	−0.277
Mental Health Care Access (No)	---	---	---	1.213	(0.888)	0.040	0.743	(0.733)	0.025
Age	0.149	(0.095)	0.041	0.080	(0.107)		0.142	(0.089)	0.038
Female	0.323	(0.281)	0.031	0.780 **	(0.317)		0.343	(0.262)	0.033
Constant	22.451 ***	(1.676)		10.438 ***	(1.738)		27.999 ***	(1.845)	
R^2	0.276			0.068			0.370		

Note: Unstandardized regression coefficients with standard errors are shown in parentheses. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

The fifth model uses mastery as a personal resource measure. The mastery measure is significant. For the total sample population, a unit increase in mastery decreases the

depression score by a factor of 4.58 points ($p < 0.001$). This suggests that increased mastery could be protective against depression. In Model 5, when adjusted for self-esteem, the estimated association of expecting to achieve a college degree (compared to the reference group) and being depressed decreased to b = −1.169 ($p < 0.001$), compared to b = −2.159 in Model 2 (Table 8), an increase of 46 percent. The same trend is observed for those expecting to earn a grad8ate degree, where the estimated association of expecting to achieve a graduate degree (compared to the reference group) and being depressed increased to (b = −1.016), compared to b = −2.727 in Model 4 (Table 8), an increase of 62 percent.

The sixth model uses mental health center use as a personal resource measure. The measure is not significant, suggesting that, for the total sample, mental health care has no significant impact on symptoms. The seventh model includes all effects.

7.3. Formal Mediation Test (Sobel)

To formally test the mediation hypotheses, the Sobel test is used. The Sobel test investigates if a mediator carries the influence of a predictor variable to an outcome variable [58,59]. The diagrams that inform this test are shown in in Figure 2. The findings for the NSAL-A Sobel tests are summarized in Table 9. The Sobel test is calculated through the equation $a*b/\sqrt{(b^2*s_a{}^2 + a^2*s_b{}^2)}$; the quantpsy.org online calculator is used to complete the test [60]. The first mediation hypothesis (H_{3a}) proposes that self-esteem will mediate the relationship between academic stressors and depression. The Sobel test yields a significant result for this hypothesis ($p < 0.001$) (as shown in Table 9). This suggests that self-esteem explains the relationship between academic stressors and depression in the NSAL-A data. The next mediation hypothesis (H_{3b}) proposes that family conflict will mediate the relationship between academic stressors and depression. The Sobel test yields a significant result for the educational expectation hypothesis ($p < 0.001$) (as shown in Table 9). This suggests that family conflict explains the relationship between educational attainment expectations and depression. The next mediation hypothesis (H_{3c}) proposes that mastery will mediate the relationship between academic stressors and depression. The Sobel test yields a significant result for this hypothesis ($p < 0.001$), as shown in Table 9. This suggests that mastery explains the relationship between academic stressors and depression. The final mediation hypothesis (H_{3d}) proposes that mental health center use will mediate the relationship between academic stressors and depression. This is not a significant finding.

Table 9. Formal Mediation Tests for NSAL-A Data.

Family Conflict and Academic Achievement

	Input:		Test statistic:	Std. Error:	*p*-value:
a	-0.032	Sobel test:	-0.8862249	0.08355441	0.37549635
b	2.314	Aroian test:	-0.88288738	0.08387027	0.37729712
s_a	0.036	Goodman test:	-0.88960056	0.08323736	0.37368041
s_b	0.202	Reset all	Calculate		

Family Conflict and Education Expectations

	Input:		Test statistic:	Std. Error:	*p*-value:
a	-0.066	Sobel test:	-3.15988242	0.04624349	0.00157833
b	2.214	Aroian test:	-3.14789226	0.04641963	0.00164452
s_a	.020	Goodman test:	-3.17201065	0.04606668	0.00151387
s_b	0.202	Reset all	Calculate		

Table 9. *Cont.*

Self-Esteem and Academic Achievement

	Input:		Test statistic:	Std. Error:	*p*-value:
a	0.131	Sobel test:	-6.22001043	0.13626504	0
b	-6.470	Aroian test:	-6.21290251	0.13642094	0
s_a	0.020	Goodman test:	-6.2271428	0.13610897	0
s_b	0.326	Reset all	Calculate		

Self-Esteem and Expectations

	Input:		Test statistic:	Std. Error:	*p*-value:
a	0.108	Sobel test:	-8.73916329	0.07867206	0
b	-6.366	Aroian test:	-8.72976261	0.07875678	0
s_a	.011	Goodman test:	-8.7485944	0.07858725	0
s_b	.332	Reset all	Calculate		

Mastery and Academic Achievement

	Input:		Test statistic:	Std. Error:	*p*-value:
a	0.168	Sobel test:	-5.91040743	0.13382225	0
b	-4.708	Aroian test:	-5.90296292	0.13399102	0
s_a	0.027	Goodman test:	-5.91788017	0.13365326	0
s_b	0.249	Reset all	Calculate		

Mastery and Expectations

	Input:		Test statistic:	Std. Error:	*p*-value:
a	0.141	Sobel test:	-8.35038012	0.07799393	0
b	-4.619	Aroian test:	-8.34043458	0.07808694	0
s_a	0.015	Goodman test:	-8.36036131	0.07790082	0
s_b	0.254	Reset all	Calculate		

Mental Health Center Use and Academic Achievement

	Input:		Test statistic:	Std. Error:	*p*-value:
a	-0.010	Sobel test:	-1.00397954	0.02072751	0.31538848
b	2.081	Aroian test:	-0.93675855	0.0222149	0.34888277
s_a	.009	Goodman test:	-1.08811625	0.01912479	0.27654379
s_b	.888	Reset all	Calculate		

Mental Health Center Use and Expectations

	Input:		Test statistic:	Std. Error:	*p*-value:
a	-0.021	Sobel test:	-1.5288697	0.01999909	0.12629675
b	1.456	Aroian test:	-1.49260874	0.02048494	0.13553963
s_a	.005	Goodman test:	-1.56790866	0.01950114	0.11690245
s_b	.887	Reset all	Calculate		

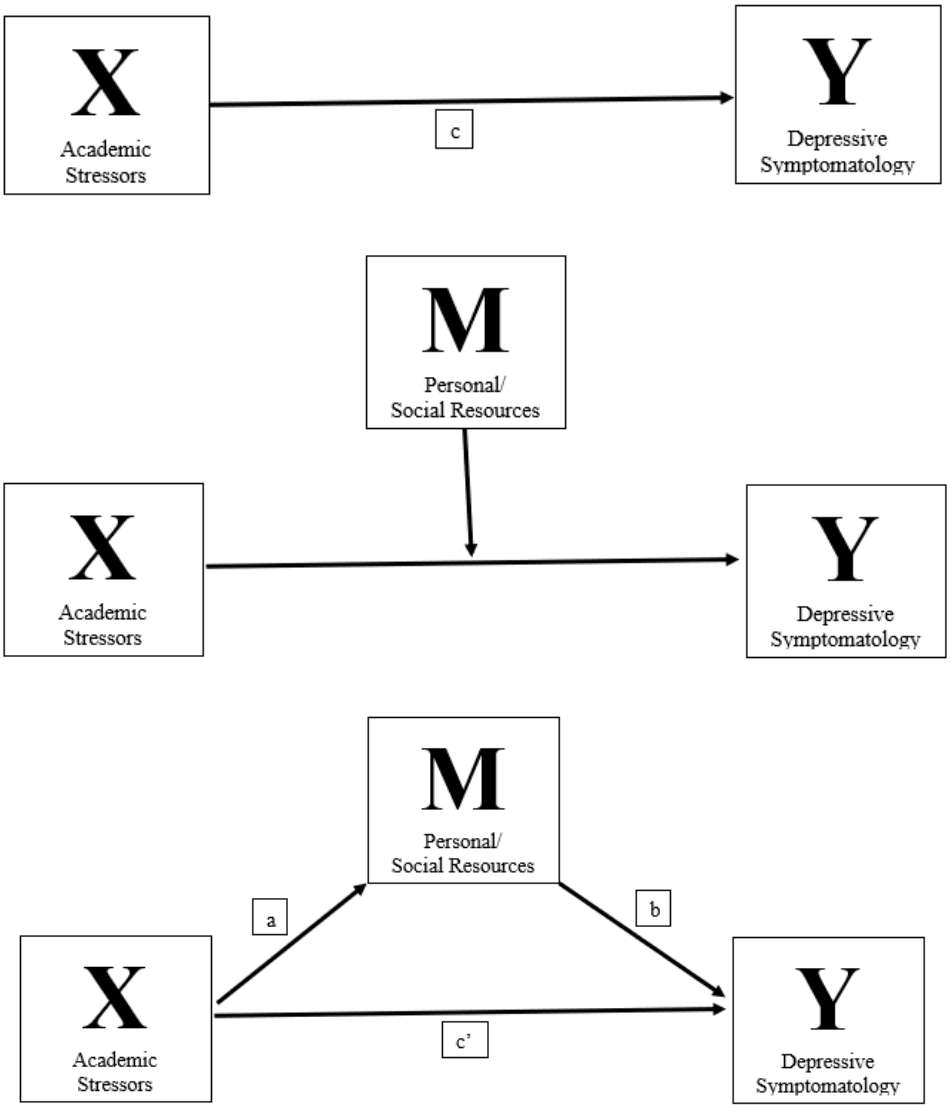


Figure 2. Formal Mediation and Moderation Test Diagrams.

7.4. Interactions

A series of interactions are run to further examine the relationships in the stress process model. Specifically, these interactions test if the relationship between stressors and depression is moderated by another measure. The summary of interaction findings is presented in Table 10, and these interactions are graphically represented in Figures 3 and 4. First, the interaction between academic achievement and family conflict is significant (see Figure 3). The effect of academic achievement on depressive symptomatology differs with increasing levels of family conflict. The findings note that as conflict increases in families, those who are average-achieving (compared to their low-achieving counterparts) experience an increase in depression scores by a factor of b = 2.13 ($p < 0.01$). This suggests that academic achievement is not as protective against depression if there is conflict within the family. Rather, it exacerbates the effects of achievement. The same can be said for those who are high-achieving, as they too experience an increase in depression (b = 1.7; $p < 0.05$). It is interesting to note that there is a visible interaction effect for the low-achieving group. Those who are low-achieving and have low levels of family conflict report high depression scores, though as the conflict increases, so too does depression. This counter-intuitive finding is not significant, and the result shown is perhaps reflective of its low cell count.

Table 10. Summary of Statistical Interactions between Educational Expectations, Academic Achievement, Social Class Status, Personal and Social Resources, Ethnic Origin (National Survey of American Life-Adolescent Supplement).

Interactions	*Coefficients*	*Significance Level*	*Figure Number*
1. Expectations [2] × Family Conflict	----	N.S.	----
2. Expectations [2] × Self-Esteem	----	N.S.	----
3. Expectations [2] × Mastery	----	N.S.	----
4. Expectations [2] × Mental Health Center Use	----	N.S.	----
5. Achievement [1] × Family Conflict	Coeff. = 2.12	$p < 0.01$	Figure 4
Average-Achieving × Family Conflict Score	Coeff. = 1.72	$p < 0.05$	
High-Achieving × Family Conflict Score			
6. Achievement [1] × Self-Esteem	----	N.S.	----
7. Achievement [1] × Mental Health Center Use	Coeff. = 5.70	$p < 0.05$	Figure 3
Mental Health Center Use × High-Achieving			

N.S. = Not Significant Coeff. = Coefficient [1] = Reference is Low-Achieving [2] = Reference is High-School Degree/Under.

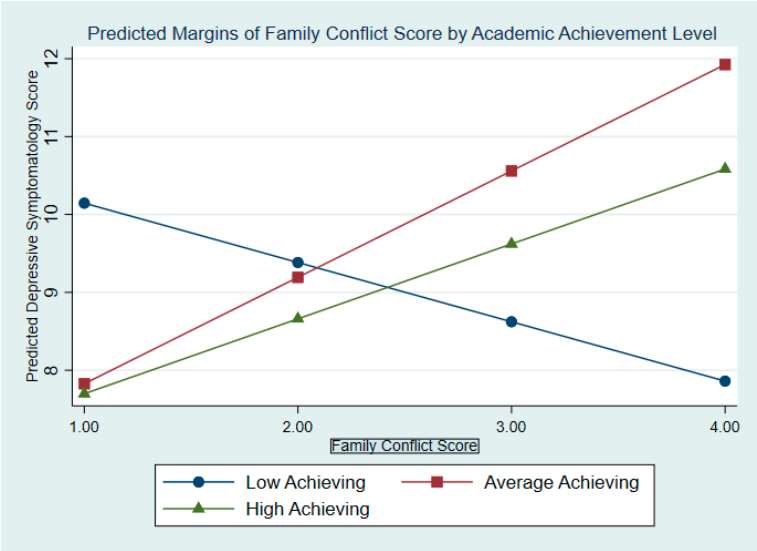


Figure 3. Adjusted predicted depression scores by academic achievement level and family conflict score.

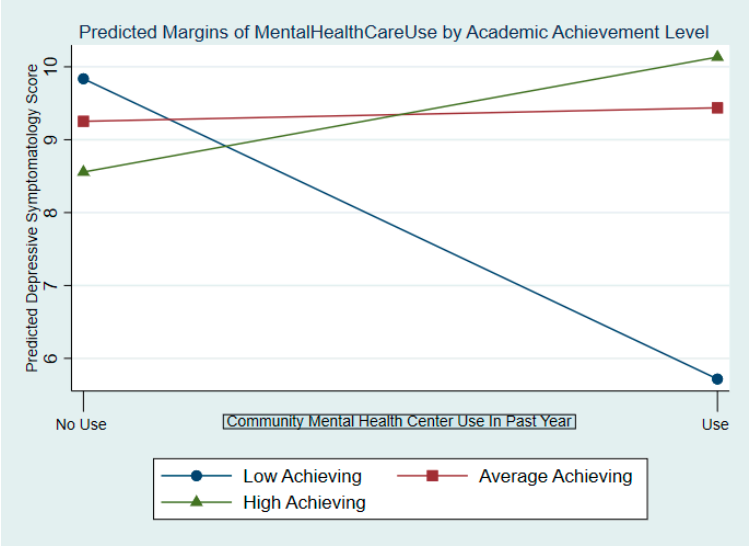


Figure 4. Adjusted predicted depression scores by academic achievement level and mental health care use.

Next, the interaction by academic achievement and mental health center use is significant. The effect of academic achievement on depressive symptomatology differs depending on whether the participant has used a mental health center in the past year. In other words, the difference in the depression score among the different academic achievement levels widens with health care utilization (see Figure 4). The findings indicate that those who are high-achieving and who seek mental health care have higher depression scores by a factor of b = 5.70 ($p < 0.05$) compared to their low-achieving counterparts. This finding does not seem to suggest that mental health center use is efficacious for the high-achieving. Interestingly, from the figure, it appears that that mental health usage is especially efficacious for those who have the lowest levels of achievement. These findings may be influenced by the small percentage of the total sample who have visited a mental health center in the past year.

8. Discussion and Conclusions

The findings indicate that self-esteem and mastery have a negative relationship with depressive outcomes, while family conflict has a positive relationship with depressive outcomes. These findings suggest that mitigating resources play an important role in shaping mental health outcomes, consistent with the stress process framework, which posits that stressors are conditional on resources. The broader implications of these findings suggest that, to make a difference and help stressed immigrant students, mental health workers and school counselors should focus on interventions related to family interactions and support; this may alleviate the burden of academic stressors.

A noteworthy contribution of this study is that, while existing studies have demonstrated that academic stressors have consequences the mental health of youth [61–63], this analysis challenges this and establishes that education-based stressors could be protective against depressive outcomes. Ambition does not appear to be consequential for mental health, which is supported by the prior literature [51,64,65]. When introduced, educational expectation trajectories have a negative relationship with depression. Similarly, academic achievement also has a negative relationship with depression. This suggests that hope associated with efforts toward equalization and upward social mobility provides mental health benefits. This idea is consistent with research that discusses the health-enhancing benefits of education [12,21].

Overall, there is partial support for the hypotheses presented. A summary of these findings can be seen in Table 11. Notably, against expectations, educational expectations are negatively associated with depressive outcomes, as noted in another study by Julien [2]. This suggests that increased expectations could be protective against depression. I speculate that expectations may be more reflective of ability than desire, which challenges the decision to operationalize performance and expectations as stressors. It may be that what are perceived to be academic stressors are instead buffers against depressive outcomes. If true, this advances the literature by identifying a possible household intervention to counter the inhibiting doubts that stem from stereotype threat [66]. To determine if the findings have broader implications to populations groups not considered in this study, future works will need to include additional ethnic groups. Those classified as a "model minority" might serve as important reference groups given their lower susceptibility to succumbing to stereotype threat. Ultimately, testing this might establish a line of research on how expectations, when achievable, serve less as demands and stressors and more as buffers against negative mental health outcomes.

Table 11. Hypotheses Results (Supported).

H_2. *Those who earn higher academic marks will experience and report lower depression.* ✔
H_{3a}. *Self-esteem will mediate the relationship between stress exposure and depression.* ✔
H_{3b}. *The family conflict score will mediate the relationship between stress exposure and depression.* (Partial Support)
H_{3c}. *Mastery will mediate the relationship between stress exposure and depression.* ✔
H_{5a}. *The effect of academic achievement on depression will vary by family conflict score.* ✔
H_{5c}. *The effect of academic achievement on depression will vary by mental health center use.* ✔

The hypotheses concerning resources were supported. The findings show that resources (either personal or social) both mediate and moderate the relationship between stress exposure and depression outcomes. This suggests that, in some instances, family overpowers education. This is especially important as it establishes the family as a possible source of intervention and demonstrates that it can be beneficial when parents have high expectations and their children meet them accordingly. The findings also suggest that while household academic expectations appear to provide hope for immigrant youth, initiatives to strengthen families can be useful for those for whom this is not the case. For personal and enabling resources, self-esteem and mastery are revealed to be important. Self-esteem is an integral resource in adolescent development. Studies have found that low self-esteem during adolescence predicts poor health and that higher self-esteem is associated with better academic performance [67]. When presented with educational hardships, those with greater self-esteem are more likely to persevere and achieve their established goals [68,69]. The findings in this study further these claims for immigrant adolescents and suggest that it would be a worthwhile investment for families/schools to help build self-esteem.

8.1. Research Implications

The research findings from this study have important practical implications. Though the study discovers that operationalized stressors can be protective against depression, this does not eliminate the stigmatized status under which many immigrant youth live [70]. This status can contribute to poorer psychological well-being [33,71,72], which, in turn, can serve as a predictor of suicidal ideation, obesity and other serious medical conditions. Strikingly, the majority of students in the sample neither have access to nor use mental health services. A growing body of research continues to show that Black immigrant youth are at increased risk of mental health issues compared to their native and non-Black counterparts [73,74]. Ultimately, this research highlights the need to expand school-based mental health services and improve access for immigrant youth [75]. Additionally, helping families to reduce conflict and increase cohesion appears to be beneficial. This might indicate a need to expand culturally sensitive family counseling interventions. These findings also support unique interventions that teach or encourage parents to set high academic expectations. In turn, these expectations may be effective in countering emerging stereotype threats and may also increase self-esteem and mastery among respondents.

8.2. Limitations and Future Directions

Several limitations should be noted. First, the data are cross-sectional, so we are only able to infer associations and not causation. Next, several proxy variables are used. Notably, within this dataset, I use a proxy for parents' expectations for their children's educational attainment. A direct question to parents on the expected educational trajectory of their child would have better served this analysis. However, as noted earlier, research has shown that parents' academic expectations align with and predict their children's own expectations [7].

Finally, the mental health use variable was limited by the small number of those who had used a community mental health center. A direct question about the use of counseling services would have better served the analysis.

Funding: The early development of this study was supported by the Agency for Healthcare Research and Quality [AHRQ] of the National Institutes of Health under award number 5T32HS013852. The contents of this publication are the sole responsibility of the author and do not represent the official view of the NIH or AHRQ.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study are openly available in The National Survey of American Life Adolescent Supplement (NSAL-A), 2001–2004. [https://doi.org/10.3886/ICPSR36380.v1] [36380].

Acknowledgments: This manuscript is an extension of my doctoral dissertation. I am permitted to publish in scholarly journals beyond the initial submission of the dissertation to ProQuest through The University of Alabama Birmingham Graduate School. Specifically, as the author, I retain the copyright to the dissertation and the agreement signed with ProQuest only grants them a non-exclusive license to archive the work. Although distinct in its target population, analysis, literature review, methodology and results, this manuscript originates in a doctoral dissertation that tested multiple datasets to answer different questions related to health outcomes and educational stressors. I currently have a manuscript under review in the MDPI journal *Social Sciences*, which uses a separate dataset, target population, literature review, methodology, discussion and results. The source of that manuscript is the aforementioned dissertation, where separate analyses across multiple datasets were carried out. This submission is distinct from that manuscript and there is no overlap.

Conflicts of Interest: The author declares no conflicts of interest.

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