

## **ABSTRACT**

**KILMARTIN, KATHLEEN GRACE** The Impacts of Family Relationships, School Connection, and Neighborhood Collective Efficacy on Adolescent Wellness and Negative Affect (Under the direction of Dr. Scott Stage).

Throughout the past decade, poor mental health trends continue to increase for the adolescent population. Adolescence is a pivotal time in development, as this time period can set the trajectory of adult functioning and outcomes. Traditionally, researchers have studied individuals from a deficit-focused perspective and viewed wellbeing or positive functioning as the absence of psychopathology, such as depression or anxiety. An important contribution of this study is that it focused on the impact of positive relationships and environmental settings on adolescent psychological functioning for both positive and negative aspects. The first purpose of this study investigates the impact of positive family, school, and community environments on positive and negative functioning of adolescents. The second purpose investigated how different environmental settings interact and impact adolescent functioning. Baseline and Year 15 data from the Future of Families and Child Wellbeing Study were used to assess the impacts of adolescent environment on adolescent outcomes using random effects multiple regression analyses. Results showed positive parent-child relationships and school connection were significantly related to adolescent wellness; positive parent-child relationships, school connection, and neighborhood collective efficacy were negatively associated with adolescent negative affect. In addition, interactions among environments (e.g., family by school and school by neighborhood) were significantly related to adolescent wellness. The school by neighborhood interaction was significantly negatively related to adolescent negative affect. These results imply the neighborhood collective efficacy was moderated by school connection suggesting the

importance of adolescents' connection to school and its potential to inversely impact to adolescent negative affect.

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The Impacts of Family Relationships, School Connection, and Neighborhood Collective Efficacy  
on Adolescent Wellness and Negative Affect

by  
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**DEDICATION**

To my parents, Suzanne and Michael Kilmartin, who have encouraged me every step of the way. Your love and belief in me have always been clearly present.

## **BIOGRAPHY**

Kathleen Grace Kilmartin is a native North Carolinian. Her passion for education was present at an early age, as she began tutoring her peers and younger students in elementary school. Growing up as the eldest of five children, she always strove to help her family and others. She earned her Bachelor of Science in Psychology from the University of North Carolina at Chapel Hill with minors in Education and History. After graduation, she moved to New York City where she pursued graduate degrees in school psychology at Teachers College, Columbia University. Kathleen earned her Master of Arts in Applied Educational Psychology, Master of Education in School Psychology, and an Advanced Certificate in Applied Behavioral Analysis from Columbia University. She attended North Carolina State University for her doctoral degree in School Psychology. Her main clinical and research interests focus on providing trauma-informed, culturally sensitive, and equitable treatment and care to youth and their families.

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## **The Impacts of Family Relationships, School Connection, and Neighborhood Collective Efficacy on Adolescent Wellness and Negative Affect**

Throughout the past decade, poor mental health trends continue to increase for the adolescent population (Center for Disease Control and Prevention [CDC], 2021). According to CDC data in 2021, 42% of high school students reported feelings of sadness and hopelessness so often they stopped engaging in typical activities. Adolescence is a sensitive time period where many mental health disorders begin (Thapar et al., 2012). Becoming aware and addressing mental health is not only important to prevent death and disability (World Health Organization, 2020) but also to promote positive long-term impacts for adulthood (Carvajal-Velez et al., 2023). Risk factors for anxiety and depression include childhood maltreatment and family dysfunction (Peirce et al., 2023). However, protective factors also exist; parental warmth, father involvement, school connectedness, and neighborhood collective efficacy are associated with reduced risk of negative adolescent mental outcomes (D. Wang et al., 2021).

Historically, psychology has studied individuals from a deficit-focused perspective and viewed wellbeing or positive functioning as the absence of psychopathology, such as depression or anxiety (Keyes, 2006). Furthermore, positive functioning in psychological research has traditionally focused on adults and not adolescents (Casas, 2011). Research on positive functioning in adolescence is relatively new, and how to define it has been debated. Positive functioning is generally viewed through self-report of life satisfaction, wellbeing, and optimism (Kubzansky et al., 2015). Positive functioning is defined as the presence of strengths and wellness rather than the absence of psychological or behavioral problems (Seligman & Csikszentmihalyi, 2000). Another indicator of positive functioning includes prosocial behaviors or healthy social functioning (Dodge, 2006), which includes an adolescent's ability to

communicate, make friends, and complete social tasks (Gresham, 2016). Adolescence is a pivotal time in development, as this time period can set the trajectory of adult functioning and outcomes (Eccles et al., 2003; Mello, 2008).

An adolescent's environment (e.g., home, school, neighborhood, and community) plays an important role in the development of mental health and positive functioning. Greater connection to school has been linked to fewer internalizing problems (Choi et al., 2023; Colvin et al., 2019; Eugene, 2021; Resnick, 1997; Singla et al., 2021). Research on neighborhood support suggests that even indirect relationships are related to decreased mental health concerns in adolescents (Rivera & Doom, 2023; S. Wang & Fowler, 2019; D. Wang et al., 2021). Positive family functioning (e.g., appropriate parental supervision) is associated with positive adolescent functioning (Williams & Anthony, 2015; Mackova et al., 2019; Yeh et al., 2016). Research on family, school, and community environments in relation to adolescent positive- and negative-functioning (e.g., presence of internalizing problem behaviors) is described below.

### **Parent-Child Relationships**

Children and parents exist in systems made of varying social and cultural factors that can impact the parent-child relationship (Kapetanovic & Skoog, 2021). Families are considered basic units within society that affect an individual's physical and mental growth. At the same time, family functioning can be observed as a system of people acting as a group that can influence individual functioning. Furthermore, the parent-child relationship can also play a role (Dai & Wang, 2015). According to some researchers, parent-adolescent communication is key in the relationship and is considered a protective factor for adolescent psychological functioning (Soenens et al., 2019). The parent-child relationship (e.g., closeness and communication) is also predictive of adolescent social skills (Chang et al., 2022; Peirce et al., 2022). Perceptions of

having a close relationship with parents in childhood was related to fewer depressive symptoms in adolescents in a sample of diverse, low-income families (Fagan, 2022).

In a study of Vietnamese adolescents, results suggest the importance of the parent-child relationship (e.g., parental monitoring and understanding), which was associated with a lower likelihood of having mental health problems or being bullied (Nguyen et al., 2019). An intervention targeting parent-child relationships was effective in reducing adolescent depressive symptoms when parental reports of increased positive parenting and family relationships were reported (Reigstad et al., 2022). Overall, this study demonstrates the importance of parent-child interactions and suggests the necessary role of a supportive parental figure in adolescents' lives. In another study, researchers found that adolescents in Hong Kong had lower depressive symptoms when they reported positive family relationships (Lau & Kwok, 2000). Thus, positive family relationships help mitigate the presence of adolescents' mental health problems.

### **Parental Monitoring**

Parental monitoring is defined by parents' awareness of their children's activities, whereabouts, and friendships (Dishion & McMahon, 1998). This includes the parents' ability to structure the environment and track their child. While parental monitoring encompasses varying tasks at differing stages (e.g., infancy vs. elementary school age), at all phases, parents can continue to stay involved with the environment (e.g., home, school, or community) by providing structure and tracking the child's behaviors in those environments (Dishion & McMahon, 1998). Parents who know the child's environment and activities are considered to have effective parental monitoring, which has been linked to greater trust between parents and adolescents (Ying et al., 2015). While adolescents continue to explore the world around them, they spend

less time with their parents, and one way for parents to continue to stay involved with their adolescent's life is through parental monitoring (Lionetti et al., 2019).

Research on parental monitoring demonstrates how parent behaviors may impact adolescent mental health and wellbeing. A crisis in the family and adolescent-perceived poor parental supervision were negatively associated with positive youth development whereas positive parenting and frequent family activities were positively connected with healthy development of adolescents (Mackova et al., 2019). In a study investigating Latino adolescents, the authors found that increased levels of parental monitoring were linked to less problem behaviors and more prosocial behaviors (Kerr et al., 2003). In a sample of diverse and economically disadvantaged adolescents receiving treatment for comorbid substance use and psychiatric disorders, researchers found that depressive symptoms decreased, and that family functioning also improved after a 12-month follow-up, especially for families with greater parental monitoring (MacPherson et al., 2021). Higher levels of parental monitoring at baseline were predictive of greater improvements for depressive symptoms (MacPherson et al., 2021).

### **School Connectedness**

Adolescents spend a large portion of their time at school and with peers, which can impact their socioemotional development (Masten & Cicchetti, 2016; Roeser et al., 2000). Being connected to a school during adolescence is important as individuals rely less on family and more on relationships in school (Goodenow, 1993). School connectedness is defined by students being psychologically attached and being able to identify with the school community (Loukas et al., 2006). More specifically, school connectedness has been studied by asking adolescents questions about closeness to people, safety, happiness, and inclusiveness at school (Choi et al., 2023; Eugene, 2021; Eugene et al., 2021a; D. Wang et al., 2021).

School connectedness is associated with higher positive outcomes in adolescence and childhood, demonstrating that school could possibly compensate for lack of social support within the family or neighborhood context (Goetschius et al., 2021). Greater school connectedness has been linked to lower levels of adolescent reported depression and anxiety symptoms in a diverse sample of adolescents (Eugene, 2021). Increased school connectedness is also associated with greater social skills in adolescents (Chang et al., 2022). Other research has demonstrated that school connectedness acts as a protective factor against negative internalizing problems; in the same study, school connectedness mediated the relationship between peer victimization and teen depression and anxiety (Eugene et al., 2021a).

### **School Climate**

Suldo et al. (2012) explains how school climate is a complex, multi-dimensional construct. The literature lacks agreement as to what dimensions should be included in the definition (Cohen & Grier, 2010). Examples of dimensions of school climate include resource sharing, order and discipline, parent involvement, building appearance, school safety, peer relationships, and student-teacher relationships (Aldridge & McChesney, 2018; Suldo et al., 2012). Some researchers are more specific in the definition of school climate. For example, school climate can be defined by student-teacher relationships and teaching quality (e.g., teachers treating students with respect, or teachers explaining difficult things clearly; Eugene et al., 2021b; Choi et al., 2023). Burrell-Craft et al. (2022) adds that student-teacher relationships are one of the most important parts of the school climate. For the purposes of this study, school climate will be described as student-teacher relationships and teaching quality and expectations within the school.

Adolescents begin to spend more time in the school setting, which is one reason why school climate continues to be a strong predictor of adolescent development and outcomes (Verhoeven et al., 2019; Rayan et al., 2022). Within a cross-sectional study of around 400 high school students, results indicated significant and positive associations between school climate and life satisfaction. Additionally, the reverse relationship was found between school climate and psychopathology, suggesting how low school climate is linked to adolescent psychopathology (Suldo et al., 2020). In a systematic literature review investigating the relationships between school climate and adolescent mental health and wellbeing, researchers concluded that positive teacher-student relationships were linked to decreased mental health problems (Thapa et al., 2013). An updated systematic literature review found that positive perceptions of school safety and school connectedness as well as positive teacher-student relationships were associated with decreased mental health problems and increased wellbeing (Aldridge & McChesney, 2018). In one randomized control trial study conducted in India (Singla et al., 2021), a school-wide intervention to promote positive school climate (e.g., teacher and peer relationships at school, sense of belongingness, participation in school events, and commitment to academics) showed that school climate mediated the relationship between the intervention and lower depression rates. Similarly, Rayan et al. (2022) found both positive family functioning and school climate were significantly and negatively correlated with adolescent anxiety and depression.

### **Neighborhood Collective Efficacy**

Neighborhoods can affect a sense of safety and thereby may influence the wellbeing of youth. Research on diverse adolescent samples have suggested positive effects of increased collective efficacy on mental wellbeing (Donnelly et al., 2016; Rivera & Doom, 2023; S. Wang & Fowler, 2019). According to Sampson et al. (1997), neighborhood collective efficacy is

characterized by neighbors' willingness to intervene for the common good of the group, which also includes overall trust of neighbors. More specifically, previous research (Donnelly et al., 2016; Rivera & Doom, 2023) studying neighborhood collective efficacy define the construct by combining items of social cohesion (e.g., the neighborhood is close-knit group of people who generally get along and share the same values) and informal social control (e.g., how willingly neighbors get involved or intervene when children skip school, spray paint buildings, show disrespect to an adult, or when a fight breaks out). Essentially, neighborhood collective efficacy acts as an invisible form of social support because direct interactions or strong relationships with neighbors are not required (S. Wang & Fowler, 2019). The authors found that positive effects (e.g., higher rates of subjective wellbeing) of neighborhood collective efficacy are present in both rural and urban areas for Taiwanese adolescents. Higher neighborhood collective efficacy throughout childhood (e.g., age three to nine) has also been demonstrated to act as a protective factor against depression and anxiety in adolescents despite socioeconomic status in a sample of urban and diverse adolescents (Donnelly et al., 2016). More specifically, greater neighborhood social cohesion is associated with greater adolescent social skills (Chang et al., 2022). Alternatively, lower neighborhood social cohesion in longitudinal studies is associated with greater depressive symptoms in adolescents (Kingsbury et al., 2015; Solmi et al., 2017).

### **Adolescent Extracurricular and Community Involvement**

Mahoney et al. (2005) describe extracurricular activities as organized, structured, adult supervised events outside of school hours. Extracurricular activities that are structured and organized are positive for adolescents because engagement in these activities allow adolescents the ability to become part of the community, develop agency, and establish a support system (Eccles et al., 2003). Research on school-related extracurricular activities has been associated

with positive psychological wellbeing and school performance for adolescents (Eccles & Barber, 1999; Sabo et al., 2005). In a study of Austrian adolescents, results showed that participation in sports and arts extracurricular activities were linked to better mental health and school connectedness (O'Flaherty et al., 2022).

Research on adolescent extracurricular activities has also examined the interplay of family, school, and neighborhood. For example, a study of Russian adolescents and their parents, explored the association between parental involvement within the educational setting and their adolescent's participation in extracurricular activities. Results demonstrated that strict control of activities in childhood were associated with fewer adolescent extracurricular activities in adolescence. Conversely, collaborative parental involvement was associated with more extracurricular activities, suggesting the importance of parenting behavior in adolescent decision-making (Goshin et al., 2021). The authors suggested that parenting strategies that promote encouragement and independence within their adolescents were a preferable method to help adolescents engage in extracurricular activities. One longitudinal study found that becoming involved in extracurricular activities, specifically sports or multiple activities (e.g., educational activities, music/arts, and individual sports) was associated with higher levels of positive mental health (e.g., life satisfaction and optimism) and lower levels of negative mental health (e.g., anxiety and depressive symptoms), which was mediated by peer belongingness (Oberle et al., 2019). Additionally, extracurricular activities have been significantly and positively associated with greater adolescent social skills (Lee & Joo, 2020). While research on adolescent community involvement has been associated with better mental health, Hull et al. (2008) found that neighborhood disadvantage acted as a moderator depending on the individual's race. For example, non-sport extracurricular activities were protective factors for emotional wellbeing for

Hispanic adolescents and emotionally distressing for Black adolescents in disadvantaged neighborhoods. (Hull et al., 2008).

### **Theoretical Framework**

The proposed constructs and interactions are guided by ecological systems theory. Bronfenbrenner (1977) describes human development as the interaction of an individual and the surrounding environments. Ecological systems theory describes adolescent development through the lens of multiple settings, in which adolescents are influenced by proximal (i.e., settings they directly participate in) and distal (i.e., settings they do not directly participate in) settings (Szapocznik & Coatsworth, 1999). The family environment is considered part of the microsystem or immediate environment in ecological systems theory, meaning that family characteristics and interactions with the individuals within the family system influence individual outcomes (Bronfenbrenner, 1986). Additionally, Bronfenbrenner (1986) discussed how the school environment (i.e., a part of the mesosystem) and the community (i.e., a part of the ecosystem) interact, providing important areas to study in the development of individuals.

### **The Current Study**

This current study aims to investigate the impact of positive family, school, and community environments on positive and negative functioning of adolescents. The study also aims to identify how different environments interact and thereby impact adolescent functioning. A notable contribution of this study lies in its analysis of data from a positive perspective, which remains largely unexplored in existing literature. While previous research has examined adolescent outcomes within the domains of family, school, and community, none have concurrently explored positive and negative functioning in the context of multiple environments. Addressing this research gap, this study endeavors to shift the focus from deficit-oriented

paradigms prevalent in psychological research. The study also contributes by evaluating the relationships of the positive environmental settings on negative adolescent functioning. By exploring potential interactions and protective factors associated with positive functioning and reduced negative outcomes, I aim to enrich the current understanding of adolescent mental health concerns and wellbeing.

The proposed constructs encapsulate the various environments that influence adolescents. The study focuses on positive characteristics within the surrounding environments in which an adolescent interacts. The family characteristics variable encapsulates items assessing the parent-child relationship and parental monitoring. Next, the school characteristics variable is inclusive of items assessing school connectedness and school climate. The community characteristics variable is measured with items assessing neighborhood collective efficacy and adolescent extracurricular and community involvement. Lastly, the two outcome variables are adolescent positive functioning assessed by adolescent wellbeing and prosocial behaviors and adolescent negative functioning assessed by adolescent depression and anxiety.

Based on the ecological model, the study aims to understand the associations between positive environments and adolescent positive and negative functioning. Additionally, a goal includes identifying how different environments interact with each other and how they impact adolescent outcomes. The three positive environments are expected to positively relate to positive adolescent outcomes while negatively relating to negative adolescent outcomes. The study also aims to explore interaction effects among the environments, with the possibility of one environment strengthening the relationship or moderating a relationship between the outcome variables and another environment.

### ***Research Questions and Hypotheses***

The research questions and hypotheses are listed below. Hypotheses are provided for research questions assessing significant relationships between the variables. However, research questions examining interaction effects between independent variables on outcome variables are exploratory in nature. As a result, hypotheses are not provided for research questions examining interaction effects.

**RQ1:** Is there a significant relationship between positive family characteristics, school characteristics, and community characteristics and positive adolescent functioning?

**H1:** There will be a positive and significant association between positive family characteristics, school characteristics, and community characteristics and positive adolescent functioning.

**RQ2:** Is there a significant interaction effect between positive family characteristics and school characteristics on positive adolescent functioning?

**RQ3:** Is there a significant interaction effect between positive school characteristics and community characteristics on positive adolescent functioning?

**RQ4:** Is there a significant relationship between positive family characteristics, school characteristics, and community characteristics and negative adolescent functioning?

**H4:** There will be a negative and significant association between positive family characteristics, school characteristics, and community characteristics and negative adolescent functioning.

**RQ5:** Is there a significant interaction effect between positive family characteristics and school characteristics on negative adolescent functioning?

**RQ6:** Is there a significant interaction effect between positive school characteristics and community characteristics on negative adolescent functioning?

## **Method**

### **Sample**

Data were taken from the Future of Families and Child Wellbeing Study (FFCWS), which is a longitudinal study following births (with an oversample of non-marital births) from 1998-2000 in 20 large cities across the United States. The sample follows a cohort made of 4,898 children and their families. Thus far, six waves of data have been collected at the child's birth, which is considered baseline, and at 1, 3, 5, 9, and 15 years of age with interviews conducted with biological mother and father in the first five waves and an interview with the primary caregiver in the sixth wave. At ages 9 and 15, home observations and interviews with children/adolescents were conducted. In this particular study, data from baseline and year 15 will be used. Baseline data were collected between 1998 and 2000 while data for year 15 were collected between 2014 and 2017 (Bendheim-Thoman Center for Research on Child Wellbeing [CRCW] & Columbia Population Research [CPRC], 2021).

### **Procedure and Analytic Strategy**

Before statistical analyses were conducted, variables were created. All variables were created using the FFCWS dataset. In order to assess if family, school, and community variables predicted adolescent outcomes, raw scores from the scales within the FFCWS were constructed. Principal components analyses (PCA) were conducted with the combined items from the selected scales purported to measure the constructs described in the introduction to determine the best set of items representing each construct. The first component of each set of items analyzed were scaled to create a relatively normally distributed interval scale for each construct. In addition, covariates were used from the FFCWS data set that have been used in other studies because of their significant contribution to demographic variables known to have significant relationship to

outcome variables (Gajos et al., 2022). Next, random effects multiple regression analyses were completed to examine predictors and interactions of the independent observed variable constructs (e.g., positive family, school, and community characteristics) on dependent observed variable constructs (e.g., positive and negative adolescent functioning). Lastly, Akaike information criterion (AIC), Bayesian information criterion (BIC), and sample-size adjusted BIC were used to assess the model fit.

## **Measures**

The dependent and independent variables were created from the FFCWS dataset. The independent variables include positive family characteristics, school characteristics, and community characteristics. The dependent variables include adolescent outcomes which can be divided into positive functioning (e.g., wellbeing, prosocial behaviors/social skills) and negative functioning (i.e., presence of depressive or anxiety symptoms). For each construct, the items were summed and then averaged to represent each adolescent's mean score on the purported construct. Descriptive statistics were conducted to determine the sample distribution properties.

### ***Positive Adolescent Outcomes***

**Adolescent wellbeing.** Positive functioning in adolescence was measured by administering an adapted version of the *EPOCH Measure of Adolescent Wellbeing*, which is considered a valid and reliable measure (Kern et al., 2016). Adolescents responded to 20 items by rating how they felt in the past four weeks. The 20 items were divided into five subscales, which included engagement, perseverance, optimism, connectedness, and happiness. Adolescents rated each item from *strongly agree* (1), *somewhat agree* (2), *somewhat disagree* (3), and *strongly disagree* (4). Questions for engagement are as follows: a) “When I do an activity, I enjoy it so much that I lose track of time,” b) “I get completely absorbed in what I am

doing,” c) “I get so involved in activities that I forget about everything else,” and d) “When I am learning something new, I lose track of how much time has passed.” The following questions belong under the perseverance subscale: a) “I finish whatever I begin,” b) “I keep at my schoolwork until I am done with it,” c) “Once I make a plan to get something done, I stick to it,” and d) “I am a hard worker.” Adolescents answered these questions for the optimism subscale: a) “I am optimistic about my future,” b) “In uncertain times, I expect the best,” c) “I think good things are going to happen to me,” and d) “I believe that things will work out, no matter how difficult they seem.” Questions for connectedness include: a) “When something good happens to me, I have people who I like to share the good news with,” b) “When I have a problem, I have someone who will be there for me,” c) “There are people in my life who really care about me,” and d) “I have friends that I really care about.” Lastly, the following questions were asked under the happiness subscale: a) “I feel happy,” b) “I have a lot of fun,” c) “I love life,” and d) “I am a cheerful person.” All items will be reversed coded, so that higher scores indicate better functioning.

**Adolescent prosocial behaviors and social skills.** Prosocial behaviors and social skills were measured by asking adolescents questions from two valid and reliable questionnaires. First, they answered three questions adapted from the Express Subscale of the *Adaptive Social Behavior Inventory* (ASBI; Hogan et al., 1992). Adolescents rated items on a scale ranging from *not true* (1), *sometimes true* (2), to *often true* (3). Modified items from the ASBI included: a) “I understand others’ feelings like when they are happy, sad or mad,” b) “I try to comfort others when they are upset,” and c) “I am open and direct about what I want.” The three questions aim to assess adolescent perspectives of their ability to understand feelings, how sympathetic they are, and how open and direct they are.

Next, prosocial behaviors and social skills were assessed by asking adolescents nine questions modified from the Assertion scale of the secondary-level parent and teacher forms of the *Social Skills Rating System* (SSRS; Gresham & Elliott, 2007). The following items were adapted from the SRSS: a) “I join group activities without being told to,” b) “I make friends easily,” c) “I am self-confident in social situations, such as parties or group outings,” d) “I easily change from activity to another,” e) “I show interest in a variety of things,” f) “I start conversations rather than waiting for others to talk first,” g) “I am liked by others,” h) “I invite others to my home,” and i) “I report accidents to appropriate persons.” Adolescents rated items as *not true* (1), *sometimes true* (2), to *often true* (3). Previous research has utilized and combined these measures to create a variable for prosocial behaviors with a Cronbach’s alpha of .75 (Streit & Davis, 2022). Higher scores equate to higher levels of prosocial behaviors.

### ***Negative Adolescent Outcomes***

**Adolescent depression.** To measure depressive symptoms, adolescents were given a modified version of *Center for Epidemiologic Studies Depression Scale* (CES-D; Radloff, 1977). The five-item scale administered to adolescents is considered a reliable cross-cultural measure of depression risk ( $\alpha = .78$ , Perreira et al., 2005). Survey items included the following statements: a) “I feel I cannot shake off the blues, even with help from my family and friends,” b) “I feel sad,” c) “I feel happy,” d) “I feel life is not worth living” and e) “I feel depressed.” Adolescents rated items based on their feelings over the past four weeks by rating statements as *strongly agree* (1), *somewhat agree* (2), *somewhat disagree* (3), and *strongly disagree* (4). All items except one item (e.g., “I feel happy”) will be reversed coded. Higher scores will indicate higher levels of depressive symptoms.

**Adolescent anxiety.** To measure anxiety symptoms, items from the *Brief Symptom Inventory 18* (BSI 18; Derogatis & Savitz, 2000) were administered to adolescents. A modified version of the BSI 18 was used, which included six items from the anxiety subscale. According to a review of the BSI 18 (Derogatis, 2001), the anxiety subscale has an acceptable alpha coefficient ( $\alpha = .79$ ). The measure is also considered valid with a construct validity coefficient of .96 with the Symptom Checklist-90-Revised measure (Derogatis, 2001). Adolescents were asked to rate statements regarding the last four weeks ranging from *strongly agree* (1), *somewhat agree* (2), *somewhat disagree* (3), and *strongly disagree* (4). The following statements were included in the modified version: a) “I have spells of terror or panic,” b) “I feel tense or keyed up,” c) “I get suddenly scared for no reason,” d) “I feel nervous or shaky inside,” e) “I feel fearful,” and f) “I feel so restless I can’t sit still.” Items will be reversed coded so that higher scores indicate higher anxiety symptoms.

### ***Positive Family Characteristics***

**Parent-child relationship.** The parent-child relationship measure is based on questions from the Middle Childhood and Adolescent section of the National Survey of Children’s Health (2003). Previous research demonstrated acceptable reliability with a Cronbach’s alpha of 0.72 (Lee & Joo, 2020). The adolescent and primary caregiver answered a question about how close they felt to each other on a Likert scale ranging from *extremely close* (1), *quite close* (2), *fairly close* (3), and *not very close* (4). Additionally, the adolescent answered a question about how well child and mother share ideas/talk about things that really matter using a Likert scale from *extremely well* (1), *quite well* (2), *fairly well* (3), and *not very well* (4). The created parent-child relationship variable from the FFCWS has been used in previous research (De Luca et al., 2020; Lee & Joo, 2020). Adolescents and primary caregivers also answered questions created by the

FFCWS staff members. Adolescents responded with *often* (1), *sometimes* (2), or *never* (3) to items about how often their mother did things in the past month, including: a) “talk with youth about current events, like things going on in the news,” b) “talk with youth about their day,” c) “help you with homework or assignments?” and d) “do activities with you such as play sports or video games, or household chores such as doing dishes or preparing food?” All items listed above will be reversed coded. Primary caregivers answered the same question but responded with *never* (1), *sometimes* (2), or *often* (3). The next three questions were also rated as *never* (1), *sometimes* (2), or *often* (3). Questions about whether the primary caregiver explained why the adolescent did something wrong were also answered by the adolescent and primary caregiver. Lastly, the adolescent rated an item about whether the primary caregiver listened to their side of an argument. Higher scores will indicate better parent-child relationship.

**Parental monitoring.** Parental monitoring was measured by asking the adolescents questions about how often their primary caregiver knows what they do during their free time and how often their primary caregiver knows what they spend their money on. Responses included *never* (1), *sometimes* (2), or *often* (3). These items were used in a previous FFCWS research with a reported alpha coefficient of .60 (Turney, 2023). Primary caregivers also responded to the two questions completed by the adolescents listed above. Lastly, adolescents answered the following question as *often* (1), *sometimes* (2), or *never* (3): “how often do you spend time alone in your home without an adult person?” Higher scores are indicative of higher parental monitoring.

### ***Positive School Characteristics***

**School connectedness.** Connectedness at school was measured by four items that were adapted from the Panel Study of Income Dynamics Child Development Supplement (PSID-CDS-III, 2010). Previous research utilizing school connectedness variable from the Fragile Families

User Guide (CRCW & CPRC, 2021) demonstrated adequate reliability ( $\alpha = .72$ ; Joo & Lee, 2020). Adolescents rated the following survey items: a) “I feel close to people at my school,” b) “I feel like I am a part of my school,” c) “I am happy to be at my school,” and d) “I feel safe at my school.” Ratings included *strongly agree* (1), *somewhat agree* (2), *somewhat disagree* (3), or *strongly disagree* (4). Items will be reverse coded so that higher scores indicate greater school connectedness.

**School climate.** Adolescents responded to 10 items that were modeled from items in the Measures of Effective Teaching Project (2010). The variable is considered reliable with a Cronbach’s alpha coefficient of .85 in previous research utilizing the same items in the FFCWS sample (Eugene et al., 2021b). Adolescents rated items on a scale from *strongly agree* (1), *somewhat agree* (2), *somewhat disagree* (3), and *strongly disagree* (4). Items assess teaching quality about the overall school rather than individual classrooms, which are divided into the following categories: care, control, clarify, challenge, captivate, and confer. The seven items include: a) “the teachers in this school really care about students,” b) “teachers in school treat the students with respect,” c) “teachers accept nothing less than our full effort,” d) “the teachers make lessons interesting,” e) “teachers explain difficult things clearly,” f) “in my classes we learn a lot every day,” and g) “in my classes we stay busy and don’t waste time.” Three items also ask about student behavior, which include a) “the kids in this school treat their teachers with respect,” b) “the kids in this school work hard,” and c) “kids in this school behave the way the teachers want them to.” All items will be reverse coded so that a higher score indicates better school climate.

### *Positive Community Characteristics*

**Neighborhood collective efficacy.** Neighborhood collective efficacy is measured by adolescent and primary caregiver perspectives of informal social control and levels of cohesion and trust within their neighborhood. Items were adapted from the Project on Human Development in Chicago Neighborhoods (PHDCN: Community Involvement and Collective Efficacy, Wave 3 Primary Caregiver (SP) and Young Adult (SP) Questionnaires), which yields high reliability between neighborhoods (Sampson et al., 1997). Adolescents and primary caregivers rated items about cohesion and trust on a scale ranging from *strongly agree* (1), *somewhat agree* (2), *somewhat disagree* (3), to *strongly disagree* (4). The following four items ask about cohesion and trust: a) “People around here are willing to help their neighbors,” b) This is a close-knit community,” c) “People in this neighborhood generally don’t get along with each other,” and d) “People in this neighborhood do not share the same values.” Adolescents and primary caregivers rated the following five items about informal social control as *very likely* (1), *somewhat likely* (2), *not very likely* (3), and *very unlikely* (4): a) “Neighbors would get involved if skipping school and hanging out on the street,” b) “Neighbors would get involved if children spray paint buildings with graffiti,” c) “Neighbors would get involved if children show disrespect to an adult,” d) “Neighbors would get involved if fight broke out in front of house/building,” and e) “Neighbors would get involved if fire station was threatened and budget cut.” Lastly, primary caregivers also rated the following item: “Neighbors would get involved if the fire station closes to the neighborhood was threatened.” All except two items (i.e., neighbors getting along and sharing the same values) will be reverse coded so that higher scores indicate higher neighborhood collective efficacy.

**Adolescent extracurricular and community involvement.** To measure adolescent extracurricular and community involvement, items were adapted from the National Longitudinal Study of Adolescent Health (Add Health) Wave III (Harris & Udry, 2014) and the Panel Study of Income Dynamics Child Development Supplement (PSID-CDS-III, 2010). The extracurricular and community involvement construct has been used in previous FFCWS research (Lee & Joo, 2020; Noonan et al., 2020). Adolescents answered six items with ratings of *never spend time on this* (0), *spend time on this less than once a month* (1), *at least once a month* (2), *once a week* (3), or *several times a week* (4). The following items were asked: since school started/during the last school year, how often did you spend time on a) athletic or sports teams; b) group performance activities such as orchestra, band, choir, dance, or theatre; c) scouts or hobby clubs; d) school activities such as clubs or student government; e) religious services; and f) volunteer service activities. Higher scores indicate more engagement in extracurricular activities and community involvement.

### ***Covariates***

Similar to other research utilizing the FFCWS (Gajos et al., 2022), demographic information will be analyzed. Covariates include adolescent age and sex, mother's race, mother's education, mother marital status, and household income during year 15.

### **Preliminary Analyses**

Items were downloaded from the FFCWS dataset, and average scale scores were created for each adolescent. Descriptive statistics were conducted to assess whether the distribution was normally distributed. Because items were extremely skewed, the items from the FFCWS that represented the constructs described above were statistically analyzed with principal components analysis (PCA) using SPSS v 28 for each separate construct (i.e., positive family characteristics,

positive school characteristics, positive community characteristics, positive adolescent functioning, and negative adolescent functioning). Items with component loadings of .500 or greater were used, and another PCA was conducted with the revised set of items. Cronbach's alpha was calculated to determine the reliability of the items representing the newly defined scale. The extracted items from the second PCAs were scaled into an interval scale to represent a relatively normal distribution as originally described by Achenbach (1985) in his construction of the *Child Behavior Checklist*. Next, a correlational matrix was constructed to show bivariate associations.

The Mplus (Muthén & Muthén, 2017) statistical package was used to conduct random effects multiple regression analyses of the covariates and main effects (e.g., positive family, school, and community characteristics) on positive and negative adolescent functioning. Two additional random effects regression models were conducted that included the covariates, main effects, and cross-level effects. Lasty, AIC, BIC, and sample-size adjusted BIC were completed followed to assess the model fit.

## Results

### Descriptive Statistics

A number of covariate variables or demographic variables were used based on previous research literature (Gajos et al., 2022). See Table 1 below for the descriptive statistics.

**Table 1**

*Covariates: Adolescent and Mother Demographic Information, Education, and Economic Level*

Covariate	Percentage
Sex of child	49.70
Mother married	23

**Table 1** (continued).

Mother college	35.89			
Black	50.45			
Hispanic	24.34			
White	21.67			
		Min.	Max.	Mean
				SD
Adolescent age	14	17	15.53	.667
Poverty index	1	5	3.26	1.367

*Note.* Valid sample size is 1,984. Poverty index is the percent at or above poverty level (1 = 0-49%, 2 = 50-99%, 3 = 100-199%, 4 = 200-299%, and 5 = 300%+).

Raw scores for the purported constructs of adolescent positive functioning, adolescent negative functioning, positive family characteristics, positive school characteristics, and positive community characteristics were summed and divided by the number of scales they represented. Because the descriptive results yielded extremely skewed sample distributions as described above, the best combination of the items representing the constructs was investigated.

### **Principal Components Analyses**

Given the skewed measures derived from averaged raw scores, principal components analyses (PCA) were conducted on each set of items purported to measure adolescent positive functioning, adolescent negative functioning, positive family characteristics, positive school characteristics, and positive community characteristics. The items that loaded on the first component with component loadings of .500 or above were deemed to significantly represent the shared variance with the underlying construct being measured (Tabachnick & Fidell, 2007). The

combination of these items was analyzed again, and Cronbach's alpha was calculated to determine the reliability of the items representing the newly defined scale.

The first PCA analyzed items from the *EPOCH Measure of Adolescent Wellbeing* (Kern et al., 2016), three items from the Express Subscale of the *Adaptive Social Behavior Inventory* (ASBI; Hogan et al., 1992), and items from the *Social Skills Rating System* (SSRS; Gresham & Elliott, 2007) to determine the best set of items representing positive adolescent functioning. The second PCA analyzed items taken from the *Center for Epidemiologic Studies Depression Scale* (CES-D; Radloff, 1977) and the *Brief Symptom Inventory 18* (BSI 18; Derogatis & Savitz, 2000) to determine the best combination of items measuring adolescent negative functioning. The third PCA analyzed items from the Middle Childhood and Adolescent section of the National Survey of Children's Health (2003); items asking adolescents and caregivers about the parent-child relationship and parental monitoring were included to determine the best set of items measuring positive family characteristics. The fourth PCA analyzed four items adapted from the Panel Study of Income Dynamics Child Development Supplement (PSID-CDS-III, 2010) and 10 items taken from the Measures of Effective Teaching Project (2010) to determine the best set of items representing the purported construct of positive school characteristics. Finally, the last PCA analyzed items adapted from the Project on Human Development in Chicago Neighborhoods (Sampson et al., 1997), items adapted from the National Longitudinal Study of Adolescent Health (Harris & Udry, 2014), and items from the Panel Study of Income Dynamics Child Development Supplement (PSID-CDS-III, 2010) to determine the best set of items representing positive community characteristics.

The results of the PCAs are provided in the Appendix at the end of the manuscript. The total variance explained by the extracted components for positive adolescent functioning was

40.6% and for negative adolescent functioning was 44%. The total variance explained by the extracted components for positive family characteristics was 44% and was 54.7% for positive school characteristics. The positive community characteristics had an explained total variance of 64%. The raw score distributions from the extracted items from the second PCAs were scaled into an interval scale using the frequency of the raw scores in the distribution of scores that represented a normal distribution similar to the procedures used in the creation of the *Child Behavior Checklist* (Achenbach, 1985).

The components representing these variables were renamed, given that the items from the other scales purported to measure these constructs were no longer used. New scales were created and derived from the PCAs after evaluating the items found in each component. Positive adolescent functioning originally included 32 items about adolescent wellbeing, prosocial behavior, and social skills. After the item reduction, the new construct included eight items. See Table 2 for the items. Positive adolescent functioning was redefined as *adolescent wellness* to better represent the items that were extracted. Then item reliability was assessed using Cronbach's alpha coefficient. The internal consistency for the adolescent wellness items was .79.

**Table 2**

*Component Matrix for Adolescent Wellness*

Item	Component loading
"I love life."	.650
"I am a cheerful person."	.666
"I feel happy."	.776
"I believe that things will work out, no matter how difficult."	.603
"When I have a problem, I have someone who will be there for me."	.608

**Table 2** (continued).

“I have a lot of fun.”	.706
“When something good happens to me, I have people to share news with.”	.567
“I make friends easily.”	.479

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The negative adolescent functioning construct originally included 11 items that measured adolescent depression and anxiety. After the PCA, nine items best explained the total variance. As a result, the new set of items were redefined as *adolescent negative affect*. Table 3 displays the extracted items. The Cronbach’s alpha coefficient for adolescent negative affect was .84.

**Table 3***Component Matrix for Adolescent Negative Affect*

Item	Component loading
“I feel I cannot shake off the blues, even with help.”	.608
“I have spells of terror or panic.”	.654
“I feel tense or keyed up.”	.602
“I feel sad.”	.762
“I get scared suddenly for no reason.”	.672
“I feel life is not worth living.”	.560
“I feel depressed.”	.746
“I feel nervous or shaky inside.”	.760
“I feel fearful.”	.587

---

The proposed positive family characteristics variable included 19 items about the parent-child relationship from the adolescent and caregiver perspective as well as parental monitoring. After the analysis, five items had the greatest variance. See Table 4 for extracted items. As a result, the positive family characteristics variable was better described as and identified as *parent-child relationship*. The alpha coefficient for parent-child relationship was .73.

**Table 4**

*Component Matrix for Parent-Child Relationship*

Item	Component loading
“How close do you feel with biological mother?”	.782
“How well do you and your mom share ideas/talk?”	.789
“Biological mother talked about your day in past month.”	.658
“Biological mother did other activities with you in past month.”	.634
“Primary caregiver listened to your side of an argument.”	.584

Positive school characteristics originally included 14 items with questions related to school connectedness and school climate. The extracted items that best described the proposed positive school characteristics included 14 items (see Table 5). The variable was renamed *school connection* although the items for this scale contained all the initial items from both the school connection and school climate. The internal consistency for school connection was .88.

**Table 5**

*Component Matrix for School Connection*

Item	Component loading
“I feel close to people at my school.”	.547

**Table 5** (continued).

“I feel like I am part of my school.”	.571
“I am happy to be at my school.”	.629
“I feel safe at my school.”	.544
“Teachers in school really care about students.”	.674
“Teachers in school treat students with respect.”	.682
“Teachers accept nothing less than our full effort.”	.564
“Teachers make lessons interesting.”	.589
“Teachers explain difficult things clearly.”	.616
“In my classes we learn a lot every day.”	.612
“In my classes we stay busy and don’t waste time.”	.644
“Kids in this school treat their teachers with respect.”	.691
“Kids in this school work hard.”	.631
“Kids in this school behave the way the teachers want them to.”	.656

---

The PCA conducted on the set of items measuring positive community characteristics included items measuring neighborhood collective efficacy and adolescent extracurricular and community involvement. Items that accounted for the greatest variance included nine items out of the original 23 items. The newly created construct is best described as *neighborhood collective efficacy* and had an alpha coefficient of .87.

**Table 6***Component Matrix for Neighborhood Collective Efficacy*

Item	Component loading
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**Table 6** (continued).

“Neighbors would get involved if children skip school and hang out on the street.”	.766
“Neighbors would get involved if children spray paint buildings with graffiti.”	.763
“Neighbors would get involved if children show disrespect to an adult.”	.788
“Neighbors would get involved if a fight broke out in front of a house/building.”	.782
“Neighbors would get involved if a fire station was threatened and budget cut.”	.673
“People around here are willing to help their neighbors.”	.744
“This is a close-knit neighborhood.”	.719
“People in this neighborhood generally don’t get along with each other.”	.553
“People in this neighborhood do not share the same values.”	.538

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### **Descriptive Statistics**

Table 7 shows the descriptive statistics for adolescent wellness, adolescent negative affect, parent-child relationship, school connection, and neighborhood collective efficacy. These newly created scales were all relatively normally distributed. These scales were renamed to more accurately describe the items that they were composed of.

**Table 7**

*Descriptive Statistics for Adolescent Wellness, Adolescent Negative Affect, Parent-Child Relationship, School Connection, and Neighborhood Collective Efficacy*

Variable	Min.	Max.	Mean	SD
Adolescent wellness	1	4	2.58	.99
Adolescent negative affect	1	7	3.70	1.89
Parent-child relationship	1	7	4.17	1.82
School connection	1	4	2.52	1.02
Neighborhood collective efficacy	1	6	3.59	1.57

*Note.* Valid sample size is 1,984.

A correlational matrix is provided to show the bivariate associations between the covariates and dependent and independent variables. Table 8 shows the correlations among the variables. There is a significant negative relationship between adolescent wellness and negative affect. The independent variables (i.e., parent-child relationship, school connection, and neighborhood collective efficacy) were positively correlated with adolescent wellness. Parent-child relationship and school connection were also significantly and negatively related to adolescent negative affect; neighborhood collective efficacy to a lesser extent was also negatively associated with adolescent negative affect. Regarding covariates, being a female was significantly related to adolescent wellness, adolescent negative affect, and school connection. Mother having a college degree was significantly associated with adolescent negative affect, school connection, and neighborhood collective efficacy. The poverty index was significantly related to adolescent wellness, adolescent negative affect, school connection, neighborhood collective efficacy, and mother having a college degree. Adolescent age had significant relations

with school connection and mother having a college degree. Mother being married was significantly associated with adolescent negative affect, neighborhood collective efficacy, mother attending college, and the poverty index. Race had significant correlations with adolescent wellness, adolescent negative affect, school connection, neighborhood collective efficacy, mother attending college, the poverty index, adolescent age, and mother being married.

**Table 8***Correlation Matrix After Principal Components Analysis for Covariate, Independent, and Dependent Variables*

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Adolescent wellness												
2. Adolescent negative affect	-.502**											
3. Parent-child relationship	.423**	-.319**										
4. School connection	.396**	-.273**	.298**									
5. Neighborhood collective efficacy	.071**	-.058**	.083**	.052*								
6. Female	-.090**	.122**	-.020	-.079**	-.005							
7. Mother college	.025	-.111**	.030	.049*	.121**	-.010						
8. Poverty index	.053*	-.138**	.014	.047*	.200**	-0.26	.387**					
9. Adolescent age	-.008	-.021	-.018	-.085**	-.022	-.040	-.086*	-.043				
10. Mother married	-.011	-.069**	.033	.034	.103**	-.010	.357**	.338**	-.027			
11. White	-.014	-.066**	.012	.055*	.161**	.003	.219**	.287**	-.091**	.286**		
12. Black	.050*	.007	-.036	-.152**	-.071**	-.015	-.133**	-.247**	.098**	-.270**	-.531**	
13. Hispanic	-.034	.060**	.038	.114*	.052*	.021	-.091**	-.020	-.012	.001	-.298**	-.572**

*Note.* Sample size includes 1,984 participants. \*\*Correlation is significant at the 0.01 level (2-tailed). \*Correlation is significant at the 0.05 level (2-tailed).

### **Random Effects Multiple Regression Analyses**

Two random effects multiple regression analyses with the covariates and main effects of parent-child relationship, school connection, and neighborhood collective efficacy were regressed on adolescent wellness and negative affect. Random effects or variance components models are statistical models where the model parameters are random variables, which assume that the data are drawn from a hierarchy of different populations whose differences relate to that hierarchy. The scales derived from the PCAs all used the adolescents' perceptions except for the neighborhood collective efficacy scale, which was derived from the mothers' perceptions. So, the neighborhood collective efficacy variable was used as a random slope variance term. In addition, because of the potential for moderation effects that included interactions (i.e., school connection by parent-child relationship and school connection by neighborhood collective efficacy), two additional random effects regression models were conducted that included the covariates, main effects, and cross-level effects (see Table 9).

### ***Random Effects Multiple Regression Results for Adolescent Wellness***

The model fit indices for the random effects regression model with adolescent wellness regressed on the covariates and main effects showed an AIC = 11233.07, BIC = 11388.988, and a sample-size adjusted BIC = 11312.724. The fit indices for adolescent wellness regression on the covariates, main effects, and interactions showed an AIC = 11157.89, BIC = 11339.795, and a sample-size adjusted BIC = 11250.821, suggesting the model with the interaction terms provided a somewhat better fit than the main effects model.

In the main effects model, the covariate poverty index was associated with higher scores on adolescent wellness, and the covariate of mothers being initially married showed a small but negative relationship with adolescent wellness. Both the main effects of parent-child relationship

and school connection showed positive moderate associations with adolescent wellness. The model that included the covariates, main effects, and interactions showed the interactions of parent-child relationship by school connection and school connection by neighborhood collective efficacy were significantly associated with adolescent wellness. Figures 1 and 2 show these interactions with adolescent wellness by one standard deviation below average scores and by one standard deviation above average on the independent variables. Figure 1 shows that lower adolescent wellness was related to lower parent-child relationship and school connection scores equally. However, higher adolescent wellness scores were associated with greater parent-child relationship scores and even higher school connection scores. Figure 2 shows the cross-level interaction between school connection and neighborhood collective efficacy on adolescent wellness. Low and high neighborhood collective efficacy scores showed relatively less change in adolescent wellness scores, whereas school connection low and high scores showed relatively large score changes on the adolescent wellness scale.

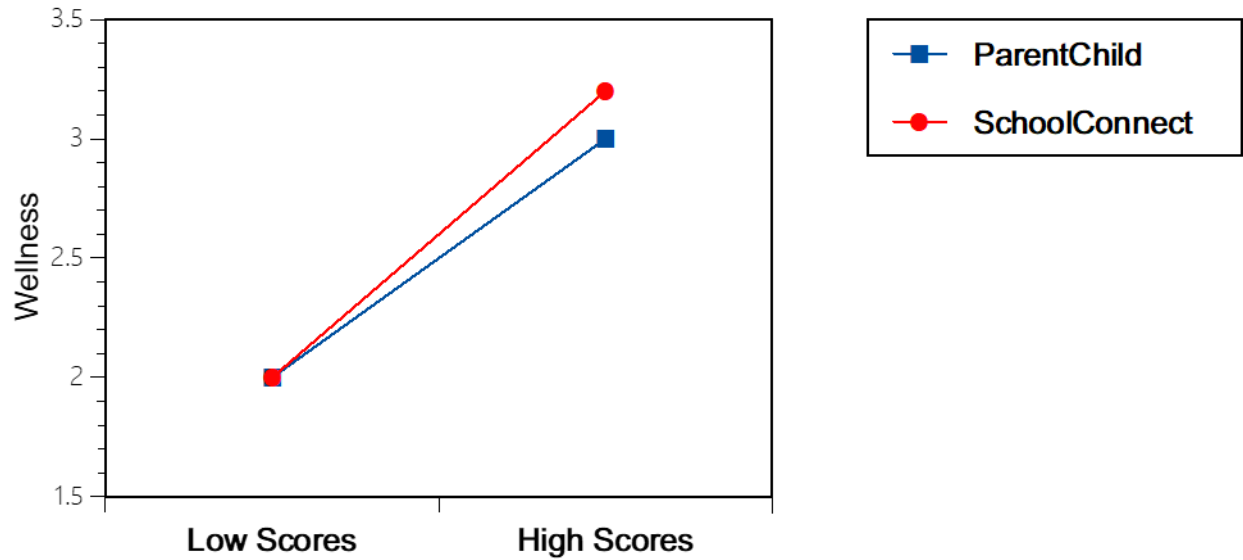
**Table 9***Random Effects Multiple Regression Models Results for Adolescent Wellness and Negative Affect*

Variable	Covariate & main effect				Covariate, main effect & interaction			
	Wellness		Negative affect		Wellness		Negative affect	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercepts	.041	.041	.944***	.093	.030	.056	.893***	.214
Female	-.007	.024	.076**	.025	-.013	.024	.028**	.025
Mother college	-.031	.028	.005	.029	-.016	.029	-.012	.029
Poverty index	.124***	.018	-.101***	.014	.095***	.019	-.076***	.015
Mother married	-.064*	.030	-.060	.032	-.059*	.029	-.005	.032
White	.024	.057	-.024	.065	.026	.058	-.029	.066
Black	.085	.057	-.060	.064	.070	.058	-.052	.064
Hispanic	-.004	.056	-.003	.066	.001	.057	-.007	.066
Parent-child relationship (PC)	.213***	.018	-.056***	.011	.198***	.019	-.045***	.011
School connection (School)	.462***	.030	-.117***	.020	.536***	.035	-.155***	.026
Neighborhood collective efficacy (N)	-.062	.067	-.026*	.013	-.076	.122	-.014	.013
PC x School					.031*	.018	-.012	.014
School x N					.126***	.022	-.082***	.017

*Note.* Sample size includes 1,984 participants. \*\*\* indicates <.001 level of significance. \*\* indicates .01 level of significance. \* indicates .05 level of significance.

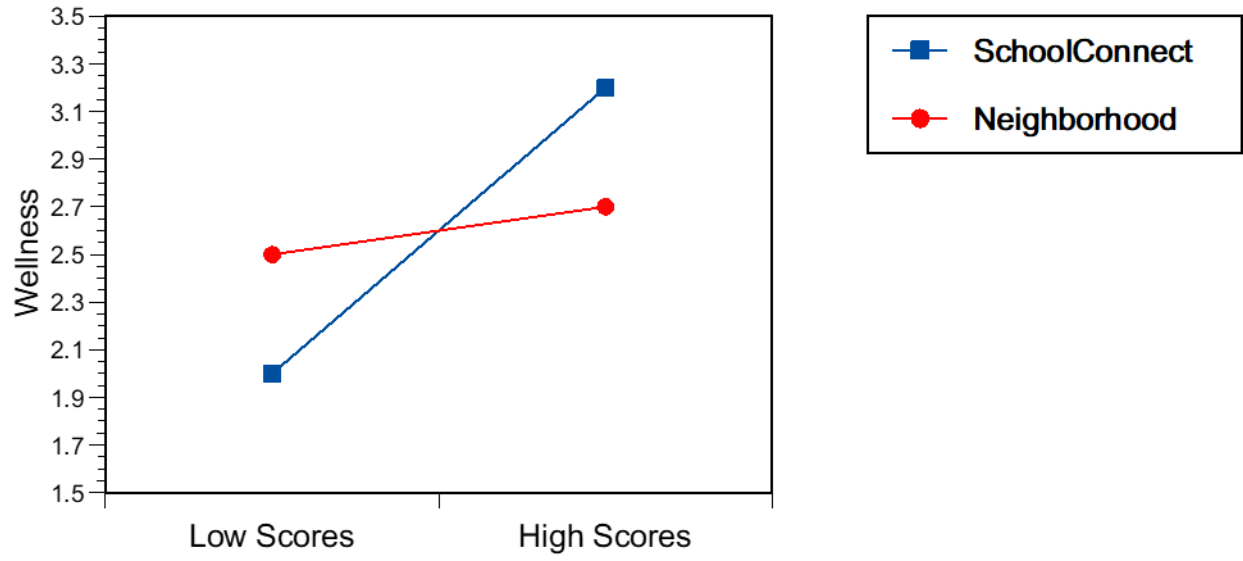
**Figure 1**

*Cross-Level Interaction between Parent-Child Relationship and School Connection on Adolescent Wellness*



**Figure 2**

*Cross-Level Interaction between School Connection and Neighborhood Collective Efficacy on Adolescent Wellness*



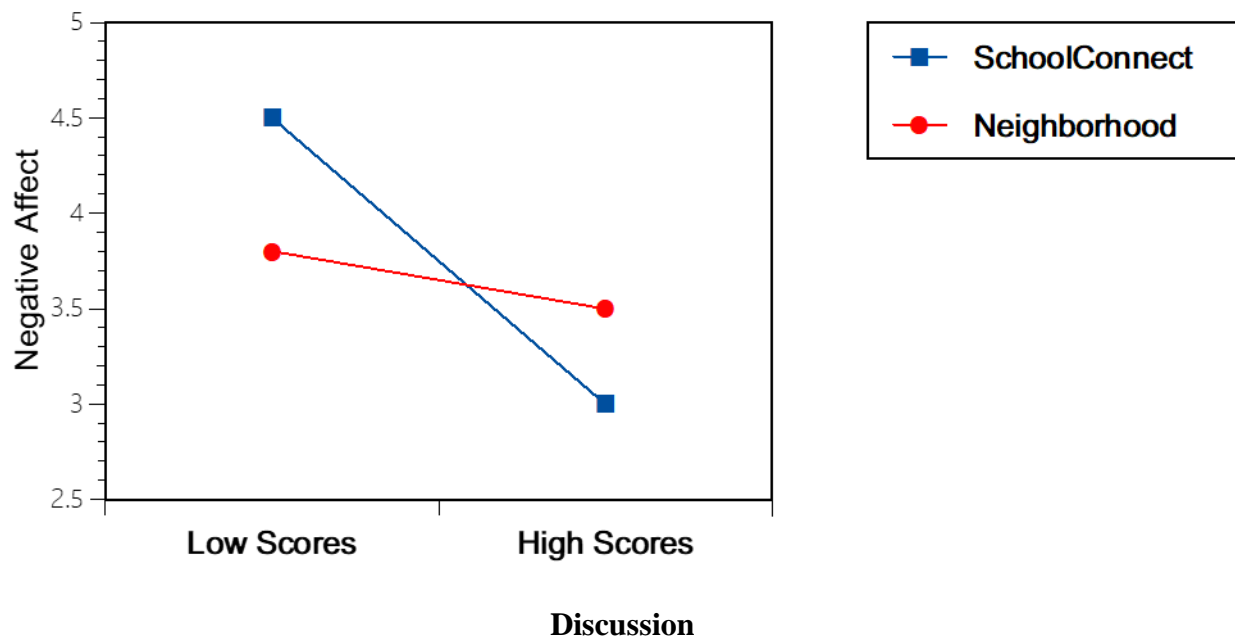
### ***Random Effects Multiple Regression Results for Adolescent Negative Affect***

The model fit indices for the random effects regression model with adolescent negative affect regressed on the covariates and main effects showed an AIC = 20407.715, BIC = 20563.633, and a sample-size adjusted BIC = 20487.369. The fit indices for adolescent negative affect regression on the covariates, main effects, and interactions showed an AIC = 20273.36, BIC = 20455.264, and a sample-size adjusted BIC = 20366.290, suggesting the model with the interaction terms provided a somewhat better fit than the main effects model.

In the main effects model, the covariate of being female was positively associated with adolescent negative affect whereas poverty index was negatively associated with adolescent negative affect. The main effects of parent-child relationship, school connectedness, and neighborhood collective efficacy were all significantly and negatively associated with negative affect. In the model with covariates, main effects, and interactions, there were similar results. The main effect of neighborhood collective efficacy was no longer significantly associated with adolescent negative affect although the interaction with school connectedness was. Figure 3 shows the interaction. Low and high scores on neighborhood collective efficacy showed less change on the adolescent negative affect scale whereas low and high scores on school connection showed relatively large changes on adolescent negative affect.

**Figure 3**

*Cross-Level Interaction between School Connection and Neighborhood Collective Efficacy on Adolescent Negative Affect*



The purpose of this study was to assess the relationships between adolescent functioning and their environmental settings from a positive perspective. Little research has focused on the presence of positive functioning in adolescence and the understanding of how hierarchically arranged settings (i.e., family, school, and community) impact adolescent positive functioning. In addition, a second purpose was to assess how the same hierarchically arranged setting variables might inversely impact adolescent negative functioning.

Four random effects multiple regression analyses were completed to assess how covariates, the independent variables, and the interactions between the independent variables were related to the outcome variables. The results indicated that adolescents' surrounding environments are significantly associated with adolescent perceptions of their wellbeing and negative affect. The first research question asked if there was a significant relationship between positive family, school, and community characteristics and positive adolescent functioning. In

the newly defined scales, the hypothesis states that the parent-child relationship, school connection, and neighborhood collective efficacy would be significantly and positively associated with adolescent wellness.

Regarding covariates in the main effects model for adolescent wellness, greater income was associated with higher scores for adolescent wellness. This finding is supported by previous research on parent income and adolescent wellbeing (Özdemir, 2012; Wu et al., 2022). However, mothers being married showed a small but negative relationship with adolescent wellness. Previous research has suggested that adolescents exhibit greater wellbeing when parents are married (Amato, 2010; Fallesen & Gähler, 2020). One reason for this study's finding includes the possible changing dynamics of the families, as family constellations may have changed since the adolescent's birth. However, marriage is not the sole predictor of adolescent wellness, and other factors, such as family belongingness, are better predictors of adolescent wellness, despite the family structure (King et al., 2017).

The parent-child relationship and school connection constructs were positively and significantly associated with adolescent wellness. This suggests that adolescents who have better relationships with their mother are more likely to have higher scores on wellness. This finding is consistent with results from Kocayörük et al. (2015) that found that parental support was positively associated with adolescent wellbeing. Furthermore, other researchers have found similar findings (Zhu & Shek, 2021) and suggest that a positive parent-child relationship contributes to a positive internal working model of self and others, which explains higher levels of adolescent wellness (Li et al., 2016). Previous research also aligns with the findings that a positive connection to school suggests greater wellbeing for adolescents (Aldridge &

McChesney, 2018). The results emphasize the importance of positive adult relationships in the home and school setting in promoting adolescent wellness (Jose et al., 2012).

However, neighborhood collective efficacy was not significantly related to adolescent wellness. Neighborhood collective efficacy was only observed during the adolescent developmental time period in the current study. Assessing for this characteristic in early and middle childhood may have revealed that long-term effects or developmental cascades of neighborhood collective efficacy do impact adolescent wellness. Other studies have found that increased neighborhood collective efficacy in early childhood is predictive of decreased anxiety in adolescence (Kronaizl & Koss, 2023). However, another study utilizing the FFCWS found that high levels of neighborhood collective efficacy at age nine was significantly related to high levels of social skills for adolescents but not wellbeing (Chang et al., 2022). Other research has revealed how lower levels of neighborhood collective efficacy is related to more problem behaviors and delinquency in adolescence (Wang et al., 2020). Higher levels of neighborhood collective efficacy may be preventative in negative adolescent outcomes rather than promotive of positive adolescent outcomes.

The second research question asked if there was a significant interaction effect between positive family and school characteristics on positive adolescent functioning. In the model including the main effects and interactions for adolescent wellness, the results revealed that there was a significant positive interaction effect between the parent-child relationship and school connection on adolescent wellness (See Figure 1). Notably, the interaction impact is small. Overall, adolescents with low wellness scores also have low scores in school connection and parent-child relationship. However, when adolescents have higher scores on wellness, they have greater scores in parent-child relationships and school connection. Adolescent wellness scores

were even higher when adolescents reported high levels of school connection. The greater association between school connection and adolescent wellness indicates that adolescents who feel good about themselves also endorsed items suggesting that their school experience was positive as well. Because this is a cross-sectional study design, causal interpretations cannot be made. However, this association suggests that the school environment plays a significant role at this developmental period (Goodenow, 1993). These results continue to support the importance of positive relationships in promoting adolescent wellness.

The next research question asked if there was a significant interaction effect between positive school and community characteristics on positive adolescent functioning. Adolescent wellness was associated with the interaction between school connection and neighborhood collective efficacy (See Figure 2). Neighborhood collective efficacy scores changed a small degree in relation to adolescent wellness whereas school connection changed substantially in relation to adolescent scores on wellness. In essence, the relatively small change in one standard deviation above or below average in neighborhood collective efficacy on adolescent wellness contrasted with the large change in school connection in adolescent wellness. This indicates a greater association between adolescents' perception of their wellness and school connection. One possible explanation for the lower association between neighborhood collective efficacy and adolescent wellness might be due to the fact that their mothers completed the neighborhood collective efficacy items. The actual exposure and perception of the neighborhood collective efficacy from the adolescents' perspective might not align as strongly as the adolescents' perception on their own wellness and school connection. Furthermore, neighborhood collective efficacy items measured the idea that neighbors are involved in promoting a safe environment. A

measure of closeness or relationships within the neighborhood may have revealed a larger impact, similar to school connection results if the adolescents provided this type of information.

The following research question asked if there was a significant relationship between positive family characteristics, school characteristics, and community characteristics and negative adolescent functioning. Using the newly named interval scales, the hypothesis stated there would be a significant negative association between the parent-child relationship, school connection, and neighborhood collective efficacy and adolescent negative affect. In the main effects model for adolescent negative affect, the covariates of being a female was positively and significantly associated with negative affect. This result is not unusual, given that females are often more likely to experience mental health concerns in adolescence (Salk et al., 2017). Income was significantly and negatively associated with negative affect, which suggests that the lower the income, the greater score for adolescent negative affect; this is consistent with previous research (Reiss, 2013) and was expected, given the finding of a significant and positive relation between income and adolescent wellness in this study.

The main effects model revealed that the parent-child relationship was negatively and significantly correlated with adolescent negative affect, indicating that adolescents with better relationships with their mothers had lower levels of negative affect. This finding is aligned with previous research using the FFCWS dataset in which close parent-child relationships were related to lower adolescent depression scores (Fagan, 2022). Additionally, school connection was significantly and negatively related to negative affect, indicating that greater school connection was associated with lower negative affect for adolescents, as found in previous research (Eugene, 2021). Neighborhood collective efficacy had a significant and negative relationship with adolescent negative affect albeit a small one ( $-.026, p \leq .05$ ). This finding indicates that

neighborhoods with greater collective efficacy was associated with lower negative affect scores for adolescents, as supported in previous research (Donnelly et al., 2016). Previous longitudinal research also demonstrated that neighborhood collective efficacy directly impacts adolescent problem behaviors (e.g., internalizing and externalizing problem behaviors) (Wang et al., 2020). These significant associations emphasize the importance of positive environments, as they are related to lower levels of adolescent negative affect.

The fifth research question asked if there was a significant interaction effect between positive family and school characteristics on negative adolescent functioning. There was not a significant interaction effect between the parent-child relationship and school connection on adolescent negative affect. This suggests that levels of adolescent negative affect did not vary depending on the scores of parent-child relationship and school connection. However, other research has found that parental attachment and school connectedness account for shared variance with adolescent depression (Shochet et al., 2008), although parental attachment was assessed with a different instrument than parent-child relationship in this study. This may be one reason for this non-significant result, although the same interaction term in the analysis with wellness showed a small interactive effect. The factors (i.e., peer relationships or individual coping skills) that may contribute to decreased adolescent negative affect were not examined in this study. Peer connectedness was not accounted for when assessing school connection; although, previous research suggests that peer conflict is associated with greater mental health problems in adolescence (Long et al., 2021; Patalay & Fitzsimons, 2016). The results of the current study also point to a limitation of the measures and scales collected within the study, which are discussed below.

The last research question examined if there was there a significant interaction effect between positive school and community characteristics on negative adolescent functioning. A significant interaction effect was observed between school connection and neighborhood collective efficacy on adolescent negative affect. The comparison of the main effects model with the model which included the cross-level interactions showed differences in the magnitude of the standardized coefficients. The association of school connection ( $-.117, p \leq .001$ ) and for neighborhood collective efficacy ( $-.026, p \leq .05$ ) with negative affect were significant. However, in the model including the cross-level interactions, the main effect of school connection ( $-.155, p \leq .001$ ) increased in strength, whereas the main effect of neighborhood collective efficacy was reduced ( $-.014$ ) and no longer statistically significant. Though, the school connection by neighborhood collective efficacy interaction term was significant ( $-.082, p \leq .001$ ). This suggests that school connection moderated the effects of neighborhood collective efficacy (Cohen & Cohen, 2003). This result implies that adolescent students' weak connection to their schools moderates the potential positive effects of their neighborhood's collective efficacy, highlighting the importance of adolescents' feelings of school connection that can moderate the effects of the neighborhood environment. Other research by Shocet et al. (2008) also found school connection had large effects on adolescent mental health, which contributes to the importance of students' connection to schools and its positive effects on adolescent development.

### **Limitations**

Within this study limitations exist. First, the study sampled a large proportion of unmarried, low-income mothers living in urban areas. Additionally, the sample was predominantly reported as Black and Hispanic. Thus, the results should be generalized to other populations with caution and consideration (Chang et al., 2022).

Secondly, limitations regarding the data used within the study are present. Regarding the items and purported constructs, the descriptive statistics resulted in an extremely skewed distribution, which meant that additional analyses were required to transform the items into interval variables. Another limitation includes difficulty in utilizing secondary data. The FFCWS used items from partial scales, which may lack reliability and validity. Using partial scales may not fully capture the intended construct being measured and lead to a less accurate assessment of the partial variable used. This required PCA to find the best set of items measuring the purported constructs of interest. The rescaled interval scales were all adolescent self-report with the exception of neighborhood collective efficacy, which was reported by mothers. Because of the predominant adolescent self-reported variables, there is a mono-method bias, which limits the generalization of the constructs measured. Parental reports may not align with the adolescent reports or perception of neighborhood collective efficacy. Likewise, parents may not evaluate their adolescent children similarly to their children's ratings.

Another limitation includes the cross-sectional nature of this study. Assessing positive family, school, and community characteristics from a longitudinal research design would allow further exploration of the interplay among the independent variables on adolescent wellness and negative affect. Additionally, other factors that could impact adolescent outcomes were not included, such as peer influences (Wang et al., 2020).

### **Implications**

The results reveal the importance of adolescents' environment studied from a positive perspective on their functioning. Presence of positive parent-child relationships and connection to school were associated with greater adolescent wellness and associated with lower adolescent negative affect. Given the results that school connection and parent-child relationships play an important role in promoting adolescent wellness, assessing methods to promote positive

relationships at home and school is essential in increasing wellness and decreasing negative affect. Overall, the results suggest that positive school connections and family relationships are clearly associated with adolescents' wellness even in nontraditional families. Results of this study emphasize the importance of positive adult relationships on wellbeing in reducing the association with negative affect. Interventions focusing on improving family and school relationships might promote better adolescent outcomes.

Additionally, a positive neighborhood environment is related to lower scores on adolescent negative affect. Further, results indicated that individuals who experienced less positive neighborhood environments still experienced less negative affect when there were high levels of school connection. Notably, these findings indicate the importance of positive school environments for adolescents in less supportive neighborhoods in relation to negative affect. Given the amount of time adolescents spend in school, implementing interventions to decrease mental health problems has been suggested to help with accessibility (Long et al., 2021). Thus, promoting positive relationships with adults in the neighborhood, as done in the schools, such as mentoring programs, could have even greater impacts. Interventions aimed at promoting adolescent mental health should focus on enhancing school and neighborhood connections to further promote positive adolescent outcomes.

## **Conclusion**

Overall, the findings from this study emphasize how positive adolescent environments are significantly related to their wellbeing. This supports the idea that promoting positive environments could act as a proactive measure to increase adolescent wellness and preventative measure to decrease adolescent mental health concerns, which would lead to better adult outcomes. The interactions among the environments also suggest the importance of multiple positive environments on wellbeing. School connection in particular accounted for greater

variance for both increased adolescent wellness and decreased adolescent negative affect, possibly suggesting the even greater importance of school for adolescents from low-income and diverse families. Additional research is needed to understand the moderators and mediators among these variables to provide more specific interventions to promote adolescent wellness and decrease negative affect.

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**APPENDICES**

### Principal Components Analysis

**Table A1**

*Principal Components Analysis for Positive Adolescent Functioning*

Item	Component loading					
	1	2	3	4	5	6
“I report accidents to appropriate persons.”	.337	.207	-.102	.100	.429	-.071
“I love life.”	.535	-.249	-.064	-.258	-.165	.076
“I get so involved in activities that I forget about everything else.”	.045	.134	.704	-.038	-.031	.035
“I am a cheerful person.”	.605	-.065	-.032	-.149	-.064	-.016
“I have friends that I really care about.”	.399	.122	.047	-.267	.242	-.384
“I get completely absorbed in what I am doing.”	.301	.003	.481	.093	.073	-.182
“I keep at my schoolwork until I am done with it.”	.423	-.285	-.003	.400	.120	-.185
“Once I make a plan to get something done, I stick to it.”	.477	-.283	-.021	.484	-.023	-.181
“There are people in my life who really care about me.”	.463	-.197	-.053	-.328	.148	-.089

**Table A1** (continued).

“I finish whatever I begin.”	.489	-.301	-.023	.464	-.024	-.201
“I think good things are going to happen to me.”	.444	-.176	-.052	-.077	-.046	.294
“I feel happy.”	.650	-.266	-.079	-.260	-.158	.042
“When I do an activity, I enjoy it so much that I lose track of time.”	.180	.077	.703	-.052	.059	.096
“I am a hard worker.”	.488	-.240	-.065	.379	.071	.022
“I believe that things will work out, no matter how difficult.”	.565	-.298	-.048	.103	.033	.185
“When I have a problem, I have someone who will be there for me.”	.523	-.174	-.061	-.287	.182	-.004
“I have a lot of fun.”	.615	-.122	.020	-.298	-.113	-.037
“When I am learning something new, I lose track of time.”	.137	-.047	.655	.056	.053	.067
“In uncertain times, I expect the best.”	.448	-.209	.163	.089	-.040	.271
“When something good happens to me, I have people to share news with.”	.509	-.087	.041	-.319	.292	-.025

**Table A1** (continued).

“I am optimistic about my future.”	.407	-.119	-.037	.010	.061	.348
“I invite others to my home.”	.331	.239	.001	-.053	-.017	-.441
“I understand others' feelings like when they are happy, sad, or mad.”	.254	.424	-.186	.081	.419	.273
“I try to comfort others when they are upset.”	.347	.364	-.091	.077	.508	.038
“I am open and direct about what I want.”	.362	.214	-.034	.226	-.160	.118
“I join group activities without being told to.”	.352	.335	-.010	.216	-.043	.085
“I make friends easily.”	.525	.339	-.049	-.047	-.358	-.124
“I am self-confident in social situations.”	.456	.259	-.101	.047	-.448	.030
“I easily change from one activity to another.”	.322	.406	.056	.043	-.180	.201
“I show interest in a variety of things.”	.389	.432	-.047	.084	.065	.199
“I start conversations rather than waiting for others to talk first.”	.394	.419	.045	.085	-.171	-.160
“I am liked by others.”	.474	.328	-.112	-.110	-.150	-.124

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**Table A2***Principal Components Analysis for Negative Adolescent Functioning*

Item	Component loading	
	1	2
“I feel I cannot shake off the blues, even with help.”	.534	.003
“I have spells of terror or panic.”	.626	.268
“I feel tense or keyed up.”	.571	.159
“I feel sad.”	.760	-.179
“I feel happy.”	-.410	.699
“I get suddenly scared for no reason.”	.647	.283
“I feel life is not worth living.”	.591	-.436
“I feel depressed.”	.740	-.315
“I feel nervous or shaky inside.”	.744	.200
“I feel fearful.”	.535	.403
“I feel so restless I can't sit still.”	.450	.236

**Table A3***Principal Components Analysis for Positive Family Characteristics*

Item	Component loading				
	1	2	3	4	5
“Talked about current events with youth in past month.”	-.352	.535	.132	-.116	-.044
“Talked about youth's day with youth in past month.”	-.372	.489	-.048	-.092	.015
“Helped youth with homework in past month.”	-.218	.360	.380	.118	.436
“Did activities with youth in past month.”	-.399	.495	.091	.069	.125
“How often knows what youth does during free time?”	.322	-.386	.475	-.119	.190
“How often knows what youth spends money on?”	.287	-.397	.490	-.039	.209
“Explained why something youth did was wrong in past year.”	.015	-.309	-.185	.571	-.237
“How close do you feel to youth?”	.454	-.272	.027	-.377	.016

**Table A3** (continued).

“Primary caregiver knows what you do during your free time.”	.453	.250	.491	.096	-.261
“Primary caregiver knows what you spend money on.”	.404	.242	.490	.083	-.388
“How often spend time alone in home without adult present?”	.148	.156	.087	-.257	-.554
“Primary caregiver explained to you why something you did was wrong.”	.354	.127	.043	.598	.000
“Primary caregiver listened to your side of an argument.”	.515	.221	.036	.139	.056
“How close do you feel with biological mother?”	.668	.224	-.167	-.215	.133
“How well do you and your mom share ideas/talk?”	.653	.271	-.166	-.164	.159
“Biological mother talked about current events in past month.”	.489	.103	-.152	.188	.244
“Biological mother talked about your day in past month.”	.618	.173	-.049	.151	.169

**Table A3** (continued).

“Biological mother helped with school assignments in past month.”	-.521	-.067	.328	.002	.167
“Biological mother did other activities with you in past month.”	.561	.179	-.226	-.116	.016

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**Table A4***Principal Components Analysis for Positive School Characteristics*

Item	Component loading		
	1	2	3
“I feel close to people at my school.”	.547	.542	-.055
“I feel like I am part of my school.”	.571	.548	.072
“I am happy to be at my school.”	.629	.440	.034
“I feel safe at my school.”	.544	.331	-.158
“Teachers in school really care about students.”	.674	-.094	.308
“Teachers in school treat the students with respect.”	.682	-.111	.201

**Table A4** (continued).

“Teachers accept nothing less than our full effort.”	.564	-.095	.346
“Teachers make lessons interesting.”	.589	-.180	.225
“Teachers explain difficult things clearly.”	.616	-.178	.205
“In my classes we learn a lot every day.”	.612	-.236	.217
“In my classes we stay busy and don't waste time.”	.644	-.236	.065
“Kids in this school treat their teachers with respect.”	.691	-.164	-.468
“Kids in this school work hard.”	.631	-.193	-.416
“Kids in this school behave the way the teachers want them to.”	.656	-.192	-.510

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**Table A5***Principal Components Analysis for Positive Community Characteristics*

Item	Component loading					
	1	2	3	4	5	6
“Neighbors would get involved if children spray paint buildings with graffiti.”	.705	-.262	-.061	.265	.232	.092
“Neighbors would get involved if children show disrespect to an adult.”	.724	-.288	-.071	.257	.215	.049
“Neighbors would get involved if fight broke out in front of a house/building.”	.716	-.289	-.064	.276	.214	.061
“Neighbors would get involved if a fire station was threatened and budget cut.”	.619	-.254	-.020	.162	.174	.008
“People around here are willing to help their neighbors.”	.720	-.212	.028	-.080	-.238	-.115
“Neighbors would get involved if children skip school and hang out on the street.”	.723	-.236	-.049	.163	.156	-.035
“This is a close-knit neighborhood.”	.701	-.168	.015	-.097	-.244	-.155

**Table A5** (continued).

“People in this neighborhood generally don't get along with each other.”	.554	-.106	.058	-.189	-.550	.024
“People in this neighborhood do not share the same values.”	.532	-.130	.078	-.238	-.541	.002
“Spend time on athletic or sports teams.”	.119	.122	.305	-.061	.075	-.461
“Spend time on group performance activities.”	.069	.151	.437	.139	-.007	.133
“Spend time on scouts or hobby clubs.”	.070	.147	.604	.221	-.004	.192
“Spend time on school activities.”	.058	.210	.631	.199	-.074	.153
“Spend time on religious services.”	.130	.152	.550	.121	.001	-.153
“Spend time on volunteer service activities.”	.095	.220	.621	.151	.068	-.140
“People around here are willing to help their neighbors.”	.433	.295	.085	-.530	.268	-.222
“This is a close-knit neighborhood.”	.353	.269	.035	-.545	.303	-.334

**Table A5** (continued).

“People in this neighborhood generally don't get along with each other.”	.363	.192	.106	-.552	.094	.398
“People in this neighborhood do not share the same values.”	.301	.158	.102	-.436	.179	.557
“Neighbors would get involved if children skip school.”	.316	.629	-.175	.109	.030	-.070
“Neighbors would get involved if children spray paint buildings.”	.349	.722	-.255	.209	-.094	.063
“Neighbors would get involved if children show disrespect to adults.”	.306	.726	-.263	.228	-.075	-.014
“Neighbors would get involved if a fight broke out in front of the house.”	.331	.682	-.260	.253	-.096	.046

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