THE INFLUENCE OF POSITIVE SCHOOL ORIENTATION AND TEACHER

ATTACHMENT ON ADOLESCENT MENTAL HEALTH OUTCOMES:

INVESTIGATING POSSIBLE GROUP DIFFERENCES, WITHIN A SOCIAL AND

EMOTIONAL LEARNING CURRICULUM

by

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DEDICATION

To all of the faculty of the College of Education at Boise State University, whose wisdom, support, and teachings transformed me as a teacher and human; to my dissertation chair, Carl Siebert, for believing in me when I did not believe in myself; to Sage International School, which the laid the foundation for my knowledge of what it means to be an exceptional educator; and most importantly, to Jesus Christ, who equipped me for His work and loved me through writing this— I could not have done this without all of you.

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ABSTRACT

Social and emotional learning (SEL) interventions can be delivered universally in schools to help equalize opportunities for diverse students and improve their mental health, as well as other outcomes. However, it is not always known or fully understood which underlying mechanisms may be at play that enable these interventions to achieve their effects –or how such mechanisms may develop over time, within an SEL intervention. The primary purpose of this study was to determine how one such intervention, *Positive Action,* was able to improve adolescent students' mental health outcomes, by testing the potential mediational influences of students' levels of positive school orientation and teacher attachment upon different groups' outcomes of self-reported depressive and anxiety symptoms. Findings revealed that both constructs played a significant role in students' outcomes of depressive and anxiety symptoms at the end of their participation in the program.

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ABBREVIATIONS

HRB   health-related behavior

PA   *Positive Action*

SEL   social and emotional learning

SES   socioeconomic status

TTI   The Theory of Triadic Influence

CHAPTER ONE: INTRODUCTION TO THE STUDY

Background of the Problem

In general, people tend to feel happier if and when inequality is lower (Buttrick et al., 2017), and people living in poverty are at an increased likelihood of having feelings of depression, hostility, and psychological stress, resulting from the stressors they experience in their lives (Adler et al., 1994). While many might assume the education system in the United States is equal for all students, it is in fact one of the most unequal in the developed world, in which children of color tend to attend schools with limited access to important resources like school funding, high-quality learning materials, effective teachers, and appropriate curricula (Darling-Hammond, 2004). African American and Latino students are more likely to attend schools that are high-poverty, in comparison to Caucasian and Asian-American students (National Center for Education Statistics, 2007).

For students living in disadvantaged neighborhoods, examples of daily life stressors can also include challenges such as increased levels of crime, homelessness, and substance abuse (U.S. Department of Health and Human Services, 2001). Such inequalities, disadvantages, and challenges may manifest themselves in students' abilities, as one study found that preschoolers with higher family socioeconomic risk factors and greater neighborhood disadvantage had lower cognitive skills than their classmates (Jeon et al., 2014). These factors may also negatively influence their mental health, as researchers have found that children from families experiencing poverty are at

an increased risk of developing mental health problems, in comparison to those from more affluent families (Samaan, 2000).

Neuroscience research has also demonstrated that children living in poverty experience unique stressors that can impact the development of their brains (Blair & Raver, 2016). In general, poverty and social disadvantage have been strongly associated with mental disorders for children growing up in such circumstances, as noted by Patel and colleagues (2007),

> Evidence for the pathways suggests that this association is complex and bidirectional: growing up in a poor household increases the risk of exposure to adversities such as scarcity of food, poor nutrition, violence, inadequate education, and living in a neighborhood characterized by absence of social networks, all of which are risk factors for mental disorder (p. 1302).

People of color are also more likely to experience poverty (Reeves et al., 2016), but after controlling for poverty, ethnic and racial minorities have actually been found to have a lower prevalence of mental health problems, compared to white Europeans (Samaan, 2000). This suggests that it is a poverty problem and not one relating specifically to racial and ethnic backgrounds. Even after accounting for such child- and family-level characteristics, children living in neighborhoods deemed as "disadvantaged" are more likely to meet the clinical threshold for mild and severe mental health problems, findings in line with literature demonstrating the associations between residence in low SES neighborhoods and adult depression, as well (Xue et al., 2005). As schools in such neighborhoods may have limited access to important resources (Li & Lerner, 2011), they

are prime contexts for efforts seeking to help students develop into healthy, balanced individuals.

Furthermore, high-poverty middle schools specifically are an important context for research investigating students' mental health and the ways in which it can be improved. Adolescent students experience the onset of puberty alongside their first major school transition from elementary to middle school, meaning that they must contend with biological changes and environmental changes all at once (Malaspina & Rimm-Kaufman, 2015). During this time, adolescents are at a heightened risk to suffer from feelings of distress (McDougall & Hymel, 1998) as well as a declined sense of self-esteem (Rhodes et al., 2004). Negative behaviors such as bullying and peer victimization increase during the middle school years (Nansel et al., 2001), and peer rejection has been found to be a predictor of adolescent feelings of depression (Prinstein & Aikins, 2004). In general, middle school students are at a heightened risk for developing negative mental health outcomes during this time of their lives (McDougall & Hymel, 1998). Negative mental health can also manifest itself in detrimental mental thought processes such as suicidal ideation, and there are well-documented associations between mental health disorders and suicide attempts (CDC, 2013).

Therefore, research seeking to better understand how to improve the mental health for adolescent students from disadvantaged, minority (racial and/or ethnic) communities is needed and implementing strategic practices to do so will not only improve their lives and mental health trajectories, but the well-being of our future American society, as well.

Universal Social and Emotional Learning Interventions to Improve Students'

Mental Health

Social and emotional learning (SEL) interventions may be an answer to this, as SEL competencies can counteract risk factors and help prepare disadvantaged students to adapt effectively (Reyes & Elias, 2011). Social and emotional competence can also positively impact academic outcomes for students coming from neighborhoods considered to be highly disadvantaged (Elias & Haynes, 2008). This is because social and emotional competence becomes a protective factor for at-risk students, both moderating and mediating the relationship between their individual risk factors and their outcomes (Domitrovich et al., 2017). Students' neighborhood socioeconomic status has been linked to their trajectories for social and emotional development (Collie et al., 2019), suggesting that students coming from lower SES communities may enter schools with lower SEL capabilities to begin with.

The Collaborative for Academic, Social, and Emotional Learning (CASEL) defines social and emotional development as, "the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions" (CASEL, 2015, p. 5). The passage of the Every Student Succeeds Act (ESSA) in 2015 in the United States signifies the first time federal policy has required schools to prioritize educating the whole child by implementing social and academic learning (Corcoran et al., 2018). SEL practices center on five core competencies for learners, to include: self-awareness, self-management, social awareness, relationship skills, and responsible

decision making (CASEL, 2015). This is also often referred to as the hidden curriculum, which is aimed at helping students improve intra- and interpersonal skills to help with their overall school success (Fopiano & Haynes, 2001). SEL interventions make such teachings less hidden and more engrained in the school's structure.

Previous research has demonstrated that SEL interventions employed in urban settings can have a positive impact on students' mental health outcomes (Barnes, 2019). For example, at-risk inner-city urban ninth through twelfth students who participated in the *Transformative Life Skills* program –a yoga-based SEL wellness promotion program –experienced improvements in emotional regulation skills, positive thinking, and coping strategies (Frank et al., 2014). Urban fourth and fifth grade students participating in the *Second Step* curriculum experienced increases in empathy, bullyproofing, self-reliance, impulse control, and anger management skills (Edwards et al., 2005). Third and fourth grade students in inner-city New York City who participated in the *4 R's* SEL intervention experienced improvements in self-reports of interpersonal negotiation strategies and hostile attributional bias, as well as decreases in depression (Jones et al., 2011). Teachers reported improvements in students' attention skills and socially competent behavior, as well as lower levels of aggression for these students, as well (Jones et al., 2011).

Universal SEL interventions may be especially impactful in improving student outcomes, as they target all students within a school setting. A meta-analysis of 19 school-based mental health and behavioral programs in low-income and urban areas found that interventions delivered universally had greater positive impacts on student outcomes than those that targeted specific subpopulations within schools (Farahmand et

al., 2011). Furthermore, the researchers found that interventions targeted at students with problem behaviors actually had a negative effect on their outcomes (Farahmand et al., 2011). When programs are universal, they reduce a variety of risk factors and promote a range of protective factors across a youth population (Greenberg & Abenavoli, 2017), thus enhancing outcomes for all students therein.

In a review of social-psychological interventions to improve student outcomes, researchers have also concluded that successful interventions are ones that directly target students' experience in school from the individual's perspective, while using powerful delivery methods to do so –achieved by enlisting active participation from the students themselves (Yeager & Walton, 2011). Such interventions should also target students' sense of self –that is, the "me" that exists at the center of their experience within their surrounding cultural environment and their perception of what they believe they are capable of achieving, thus helping mitigate inequality and close the social class achievement gap in America (Dittmann & Stephens, 2017). Schools may be especially important contexts in which to implement such programs for students from disadvantaged backgrounds. Thus, universal SEL interventions can become a valuable public resource, benefiting the children who may be experiencing extent challenges and disadvantages in their day-to-day lives because of the circumstances they live within.

The *Positive Action* Curriculum

Positive Action is an example of a universal social and emotional learning intervention with proven positive impacts on many different student outcomes across social, emotional, character, and interpersonal domains (e.g., Bavarian et al., 2013; Bavarian et al., 2016; Snyder et al., 2010; Lewis et al., 2016; Lewis, DuBois, et al., 2013;

Lewis, Schure, et al., 2013; Silverthorn et al., 2017; Stalker et al., 2018). The program as delivered by schools includes four key components: the classroom curricula, school climate kit, teacher and staff training, and family involvement kit. The school-wide materials include posters for classrooms and hallways, tokens for positive behavior, and certificates for recognizing students who exhibit positive behaviors. Information is also provided in the curriculum kits on how to conduct *Positive Action* assemblies, how to create *Positive Action* newsletters for families, and how to establish a *Positive Action* committee to aid in successful program implementation.

The K-8 classroom curriculum is scoped and sequenced across different grade levels, utilizing 15-minute, age-appropriate scripted lessons taught three days per week for middle school students. The curriculum given to school staff includes teachers' kits for each grade level, with a manual and materials for program delivery in each class. Methods for teachers include role-modeling positive behaviors, classroom activities, and using the suggested strategies that are provided. Students and teachers also set goals together, monitor their progress along the way, and with an end result of completion and follow through on the goals they have set. Students are guided by teachers to identify, apply, and practice positive actions in their lives, and then teachers facilitate activities in which students experience and reflect on how they feel when they make positive choices (Ji et al., 2005).

The topics of the *Positive Action* units are outlined in Table 1.

Table 1 **Overview of Recursive Yearly *Positive Action* Units**

	Unit Title	Unit Topics
Unit 1	The *Positive Action* "Thoughts-Feelings-Action" Circle	"You feel good about yourself when you act positively."
Unit 2	*Positive Actions* for Body and Mind.	Nutrition, exercise, sleep, learning, thinking, problem-solving, decision-making, creativity
Unit 3	Social/Emotional Positive Actions for Personal Responsibility.	Managing time, talent, energy, thoughts, feelings, and money
Unit 4	Social/Emotional Positive Actions for Pro-Social Behavior by Treating Others the Way You Like to Be Treated	Respect, empathy, kindness, fairness, cooperation, altruism, core values, and code of conduct
Unit 5	Social/Emotional Actions for Being Honest with Yourself and Others (Personal Responsibility)	Telling self and others the truth, admitting mistakes, not blaming others, and knowing one's strengths and weaknesses
Unit 6	Social/Emotional Positive Actions for Improving Yourself Continually	Setting and achieving goals, believing in your potential, having the courage to try, turning problems into opportunities, persistence, and civic engagement.
Unit 7	Review of All of the Above	

In *Positive Action*, the "Thoughts-Actions-Feelings About Self" circle displays key theoretical aspects of the program, as these three areas of thoughts, actions, and feelings depict a self-reinforcing cycle taught across the varying units and in each year of students' attendance at *Positive Action* schools. This cycle is depicted in Figure 1, in which an individual's thoughts lead to their actions, which then lead to subsequent feelings about oneself; this is a cycle that, depending on one's choices, can be either positive or negative (Flay & Allred, 2010).

Figure 1   "The Thoughts-Actions-Feelings About Self Circle"

Note. **Reprinted from Flay, B. R. & Allred, C. G. (2010). The positive action program: Improving academics, behavior and character by teaching comprehensive skills for successful learning and living. In T. Lovat, R. Tommey, & Clement, R. (Eds.),** *International handbook on values education and student well-being.* **(p. 471-501). Springer.**

According to authors Flay and Allred (2010), "The aim of PA is to get everyone into the positive cycle by making positive choices consciously; this is intrinsically motivated change, where people choose to do positive actions to feel good about his or her self" (p. 476). Because the same seven units are taught each year, students in *Positive Action* schools receive the same message each year and by teachers they know and receive other instruction from, but the curriculum kits are differentiated by grade level for

age-appropriateness and with different activities, based on students' grade level and age group.

An Overview of the Chicago Trial of Positive Action

The students in the present study were part of the Chicago Trial of *Positive Action,* in which the curriculum was taught at schools across six school years, beginning in the fall of 2004. For this study, fourteen participating schools were recruited from sixty-eight high poverty, low-performing K-8 schools in the Chicago Public Schools (CPS) district, assigned randomly into matched pairs (Lewis et al., 2017). This meant that seven comparison schools conducted school business and curriculum as usual, while the other seven schools implemented the *Positive Action* curriculum each year. Effects of the Positive Action program were assessed at the individual student level, both control and intervention schools, on eight occasions from third through eighth grade (Lewis et al., 2017). Demographically, students were 48% African American, 27% Latino/Hispanic, 7% White and 12% other (e.g. Asian, Native American, and other ethnicities), and 53% female (Lewis et al., 2017).

After participation in the program, eighth grade students experienced growth on a wide range of outcomes relating to their well-being, including social-emotional and character development (Lewis et al., 2016), peer and school self-esteem (Silverthorn et al., 2017), as well as increases in levels of self-concept, positive peer affiliation, empathy and altruism (Lewis et al., 2016). Students also experienced decreases in aggressive problem solving and negative morality (Lewis et al., 2016). For mental and emotional health, students experienced decreases in levels of depression and anxiety, as well as increases in positive affect and life satisfaction (Lewis, DuBois, et al., 2013). These

findings revealed the positive impact that a comprehensive, universal SEL curriculum can have on adolescent student outcomes, when implemented in at-risk schools in an urban setting.

Mediation and Moderation: An Overview

According to Mackinnon (2011), "Two common questions in intervention outcome research are 'How does the intervention work?' and 'For which groups does the intervention work?'" (p. 666). The first question pertains to mediating variables –or variables that help describe the process through which an intervention is able to achieve its effects, while the second question is about moderating variables –variables for which the intervention has different effects at different levels of this moderating variable (Mackinnon, 2011). While most research focuses on the relationship between an independent and dependent variable, introducing a third variable causes the possible relationships among the variables to change (Mackinnon, 2011). The questions of how and for whom the intervention works have been asked of successful SEL programs, such as *Positive Action* –often without having clear answers for whom the program is most impactful, or through which mechanisms the program is able to achieve its effects. The present study seeks to fill in some of this missing information to help researchers and school leaders better understand how successful SEL interventions positively impact student outcomes.

As previously discussed, *Positive Action* students experienced growth in several areas of mental health, and the present study will focus on those of depressive and anxiety symptoms, specifically. Utilizing these as outcome variables, this study will investigate two such possible mechanisms for adolescent student mental health

improvement in the sample: the role of students' positive school orientation and their levels of teacher attachment. Both of these constructs fall within the climate domain of "relationships," (Cohen et al., 2009), as they predominantly represent relational aspects of overall school climate. The purpose of this is to determine the role that these aspects of relational school climate may have had in improving students' depressive and anxiety symptoms, as well as to determine which was most impactful, and for whom this was most impactful.

Positive School Orientation, within the Broader Construct of School Climate

Positive school orientation is a construct that has not been widely cited in the school climate research literature, and it is a construct that the present study seeks to better define and describe for future studies seeking to measure key aspects of relational school climate. Jessor and colleagues (1995) first conceptualized a similar construct, which they called positive orientation toward school –measured through capturing students' attitudes toward school (e.g. How do you feel about going to school?) and personal value of academic achievement. Jessor (1995) found that positive orientation toward school served as a protective factor for 7th, 8th, and 9th grade students' engagement in problem behaviors, including drinking, drug-use, delinquent-type behavior (physical aggression, vandalism, theft, and lying) and sexual activity. In regard to the protective influence of this construct, the authors state that,

Having a positive orientation toward school constitutes protection against involvement in problem behavior because it reflects positive engagement with a conventional social institution and commitment to its goals. Such an orientation toward conventionality is not compatible with engaging in behaviors that are

considered inappropriate by adults and that may also jeopardize school

achievement (Jessor et al., 1995, p. 925).

Others have conceptualized positive school orientation as students' bondedness to their

school (Shimada et al., 2013).

The construct of positive school orientation in the present study was established

by Kaminski et al. (2009) and developed in a multi-site study done by the Social and

Character Development (SACD) research consortium; this was designed to evaluate the

effectiveness of seven elementary-based SEL programs (Kaminski et al., 2009). Each

program site administered the same core measures, with the goal to measure program

effects across different domains, including social and emotional competence, behavior,

academics, and perceptions of school climate (Kaminski et al., 2009). To measure

perceptions of school climate, the researchers focused on three sub domains of school

climate –connectedness, victimization, and feelings of safety at school, and with the goal

to measure the extent to which the different programs increased the levels of warmth,

caring, and feelings of safety for students within their school's environment (Kaminski et

al., 2009).

To measure levels of school connectedness, fourteen statements from Roberts et

al.'s (1995) Sense of School Community Scale were selected. In its full form, this is a 38-

item instrument seeking to measure students' perception of their school community, and

items relating to the respect, caring, and support within students' schools were drawn for

the multi-site evaluation (Kaminski et al., 2009). To measure feelings of safety at school,

the SACD Consortium designed a new measure, as no validated, appropriate measures

were readily available for the study (Kaminski et al., 2009; Social and Character

Development Research Consortium, 2010). The research team then conducted rigorous exploratory and confirmatory factor analyses and an in-depth examination of the different scales' psychometric properties to create more reliable and valid outcome measures – ultimately leading to the development of the positive school orientation construct (Kaminski et al., 2009). Positive School Orientation is comprised of nine positively worded items from the Sense of School Community Scale (Roberts et al., 1995) that relate to school connectedness and one item from the Feelings of Safety at School Scale (Kaminski et al., 2009). Unfortunately, after establishing this construct, the researchers did not provide a concrete definition for it or an in-depth examination of what positive school orientation is.

Positive school orientation will be conceptualized in the present study as students' sense of belongingness within and connectedness to others in their school community, as well as the feeling of emotional safety that is a product of this. Students have basic psychological needs for autonomy, belonging, and competence, and how engaged they are in school depends upon the extent to which these needs are met. When such needs are met through a school community, students are more likely to become committed to and bonded with their school and more likely to follow rules and behave according to the school's goals and values (Schaps et al., 2004). Levels of perceived cohesion among adolescent students in school have been associated with their mental health outcomes (Loukas & Robinson, 2004), and it is hypothesized that this construct, positive school orientation, in its representation of relationships and belongingness within a school environment, could serve as a mechanism for change for students' mental health outcomes, within *Positive Action* schools.

Teacher Attachment, Within the Broader Construct of School Climate

Teacher attachment is indicative of the quality of teacher-student relationships within a school, and at the middle school student level, this is representative of each child's perceived attachment to their teachers. With teacher attachment, students might view their teachers as secondary attachment figures, in a relationship similar to their primary attachment figures (Johnson, 2014). This primary attachment figure reference comes from Bowlby's Attachment Theory (1969), in which humans become attached to their mothers as their principal figure. In middle childhood, this attachment continues, as well as in later life, as new figures are adopted and selected (Bowlby, 1969).

Students may seek comfort from teachers when feeling stressed, and a positive relationship with a teacher may help students feel more comfortable within their school environment (Verschueren, 2015). This has also been referred to as the "teacher as secure base and safe haven" for children (Verschueren, 2015, p.79), and such an attachment is important for children from vulnerable populations (Verschueren & Koomen, 2012) – such as those in the present study. One study using a sample of 6th, 8th, and 10th grade students in Chicago found that if students held the perception that their teachers cared about them, respected them, and praised them, they were more likely to like school than students who did not hold such favorable perceptions of their teachers (Hallinan, 2008). Increasing efforts to enhance teacher-student relationships and attachment have been offered as a recommendation to increase the odds of school completion for youth, as well (Marcus & Sanders-Reio, 2001). Bowlby (1969) hypothesized that satisfactory development of attachment is important for human mental health. Previous research has also found associations between young people's reports of insecure parental attachment

and their outcomes of depression and anxiety, with associations being stronger for individuals in the stages of preadolescence and adolescence than those in earlier childhood (Brumariu & Kerns, 2010), suggesting that the role of teacher attachment in adolescence may be especially important in impacting students' mental health.

Although limited research examines the impact of positive school orientation and levels of teacher attachment on student mental health outcomes within an SEL curriculum, related studies provide evidence to support a relationship might exist. Positive social connections with peers and teachers can counteract potential psychological distress students may be experiencing (Li & Lerner, 2011), and adolescents' perception of school connectedness has been significantly related to their levels of general optimism (Thomson et al., 2014). Thus, these two constructs representing aspects of relational school climate could serve as mechanisms of change for students' symptoms of depressive and anxiety symptoms, within *Positive Action* schools.

Chapter Two will further detail positive school orientation and teacher attachment, as well as the related construct of school connectedness and its impacts on student mental outcomes. At present, to my knowledge, no published studies have examined the mediational influence of positive school orientation and/or teacher attachment on depressive and anxiety symptoms, within a universal social and emotional learning intervention such as *Positive Action* –identifying a gap in the research literature that the present study seeks to fill.

Group Differences in Related Studies

To complicate this issue, previous research has also found that differences exist in different groups of students' reports of relational aspects of school climate, suggesting

that different groups of students experience and issues related to school climate differently. Roberts et al. (1995) developed the Sense of School Community Scale and found differences in community perceptions between females and males, as well as across ethnic groups. Research has also found that boys, youth of color, and youth from less advantaged families are in less favorable trajectory groups for emotional engagement (as defined by how much they thought their peers and teachers cared about their well-being) (Li & Lerner, 2011). Boys have also been found to report more friction and competition among classmates, while girls have reported more cohesion among classmates (Loukas & Robinson, 2004).

Latino/Hispanic students in schools with significant Latino/Hispanic and White representation have reported poorer school connectedness and safety, poorer adult-student relationships, as well as fewer opportunities for meaningful participation than their peers of other ethnicities (Voight, et al., 2015). Regarding these findings, the authors state that, "Discussing climate as a whole school phenomenon, therefore, may obscure important inequities" while attributing such differences in perceptions to there being a series of "microclimates" existing in schools, surrounding individual student identity (Voight et al., 2015, p. 263). In other words, a Black/African American student might perceive a lack of community in their school environment, whereas their White peers perceive higher levels school community, as climate perceptions can become a function of race (Voight et al., 2015).

Researchers can also assume that student climate questionnaires do in fact measure each individual student's reality within their perceived school environment. As Duckworth and Yeager state, "Indeed, student self-report questionnaires are arguably

better suited than any other measure for assessing internal psychological states like feelings of belonging" (2015, p. 5). However, as the research suggests, such individual perceptions might vary based on students' racial and ethnic backgrounds, and possibly their gender, as well.

Within the present study, accounting for such group differences will mean taking a moderated mediational approach. Researchers might include moderating variables in a research study because they acknowledge the complexity of human behavior, experiences, and relationships (Mackinnon, 2011). Because extensive past research has demonstrated differences in groups' perceptions of variables related to relational school climate, this study will also group students by their gender and race/ethnicity –first, to see if such differences exist, and second, to take such possible differences into account when determining the role positive school orientation and teacher attachment might have had in influencing their mental health outcomes.

Problem Statement

Students living in poverty are more likely to suffer from negative mental health due to the stress and risk factors inherent in their environment (Adler et al., 1994), as well as encounter many other disadvantages that work against their progress in school and later in life. Integrating SEL practices can improve mental health outcomes, and when delivered universally, can impact a variety of student outcomes across diverse populations. However, schools and researchers do not always have a thorough understanding of how SEL interventions achieve such effects or for whom the intervention is most impactful.

To that end, little is known on how positive school orientation and teacher attachment, facets of relational school climate, may operate to help improve depression and anxiety for different groups of students—especially in relation to how these constructs evolve across a high-poverty school implementing a universal SEL intervention. However, by examining related literature, there is evidence that a relationship may exist, and it is hypothesized that a school with increasing levels of SEL instruction might develop a stronger positive orientation towards school and increased teacher attachment across its students over time, which would work to positively impact student mental health outcomes, as well. Positive school orientation has connections to school community, which has also been characterized as students' "belongingness" within their school, while teacher attachment is indicative of students' attachment to the adults within their school community. It is not known whether belongingness in a community or attachment to school adults would have a greater impact on students' mental health, as measured by depressive and anxiety symptoms. Findings from this study will help schools better understand the importance of cultivating positive communities and enhancing student-teacher relationships to positively impact student outcomes –as well as ideas for how this might be done.

Purpose of the Study

Specifically, to help fill these gaps and build the understanding for how universal SEL curricula achieve their effects, this study will examine the extent to which different groups of students' positive school orientation and levels of teacher attachment mediated improvements in their mental health outcomes of depressive and anxiety symptoms, as they participated in the *Positive Action* SEL curriculum, over time. An overarching goal

is also to determine which had the greatest influence: student positive orientation towards the school community or their attachments to trusted adults in their schools.

To measure students' positive school orientation, this study will rely on nine items drawn from the Sense of School Community Scale, developed by Roberts, Horn, and Battistich (1995), published in a paper entitled, "Assessing students' and teachers' sense of the school as a caring community." This measure was developed to measure the construct of community, as it relates to social relationships (Roberts et al., 1995), and items included in the present study pertain to the respect, caring, and support within their school (Kaminski et al., 2009). These items combined with one item from the Feelings of Safety at School Scale (Social and Character Development Research Consortium, 2010) to establish the construct of positive school orientation (Kaminski et al., 2009). To measure students' teacher attachment, this study will utilize a measure developed in the previously funded *Positive Action* study, which drew items from existing measures developed by Cook and colleagues (1995), Goodenow (1993), and Murray and Greenberg (2001) to measure students' attachments.

Students' mental health will be operationalized by outcomes of student self-reports of depressive and anxiety symptoms. These will be measured utilizing the BASC Depression and Anxiety Scales (Reynolds & Kamphaus, 2002), which yields separate scores for depressive and anxiety symptoms. Chapter Two will provide operational definitions, discussions, and relevant research for each of the variables of interest in the present study.

Because the cohort of *Positive Action* students experienced decreases in levels of depression and anxiety (Lewis, DuBois, et al., 2013), this analysis will investigate the

role that positive school orientation and attachment to teachers may have played in this growth for different groups of students, when "joiners" are added to the original cohort. This study aims to provide perspective on how consistent, universal SEL efforts can help improve students' mental health outcomes, and the role that relational aspects of school climate might have in this process. This research will contribute to the overall conversation on school climate, what it is, and to better understand how it functions to influence at-risk adolescents' mental health outcomes within an SEL curriculum.

Research Questions, Hypotheses, and Diagram

The research questions guiding this study were:

1) To what extent do individual characteristics such as gender and ethnicity/race influence students' positive school orientation?

   H_o1 - No group differences exist in students' perception of positive school orientation.

   $H1$ - Group differences exist in students' perception of positive school orientation.

2) To what extent do individual characteristics such as gender and ethnicity/race influence students' levels of teacher attachment?

   H_o1 - No group differences exist in students' levels of teacher attachment.

   $H1$ - Group differences exist in students' perceptions of teacher attachment.

3) To what extent does positive school orientation (for students grouped by gender) serve as a mediator for condition effects upon students' levels of depressive symptoms?

   H_o3 – For students grouped by gender, no mediational influence exists for students' positive school orientation upon their depressive symptoms.

*H*3 - For students grouped by gender, a mediational influence exists for students' positive school orientation upon their depressive symptoms.

4) To what extent does positive school orientation (for students grouped by ethnicity/race) serve as a mediator for condition effects upon students' levels of depressive symptoms?

*H*o4 - For students grouped by ethnicity/race, no mediational influence exists for students' positive school orientation upon their depressive symptoms.

*H*4 - For students grouped by ethnicity/race, a mediational influence exists for students' positive school orientation upon their depressive symptoms.

5) To what extent does positive school orientation (for students grouped by gender) serve as a mediator for condition effects upon students' anxiety symptoms?

*H*o5 - For students grouped by gender, no mediational influence exists for students' positive school orientation upon their anxiety symptoms.

*H*5 - For students grouped by gender, a mediational influence exists for students' positive school orientation upon their anxiety symptoms.

6) To what extent does positive school orientation (for students grouped by ethnicity/race) serve as a mediator for condition effects upon students' anxiety symptoms?

*H*o6 - For students grouped by ethnicity/race, no mediational influence exists for students' positive school orientation upon their anxiety symptoms.

*H*6 - For students grouped by ethnicity/race, a mediational influence exists for students' positive school orientation upon their anxiety symptoms.

7) To what extent do levels of teacher attachment (for students grouped by gender) serve as a mediator for condition effects upon students' depressive symptoms?

*H*o7 – For students grouped by gender, no mediational influence exists for students' levels of teacher attachment upon their depressive symptoms.

*H*7 - For students grouped by gender, a mediational influence exists for students' levels of teacher attachment upon their depressive symptoms.

8) To what extent do levels of teacher attachment (for students grouped by ethnicity/race) serve as a mediator for condition effects upon students' depressive symptoms?

*H*o8 - For students grouped by ethnicity/race, no mediational influence exists for students' levels of teacher attachment upon their depressive symptoms.

*H*8 - For students grouped by ethnicity/race, a mediational influence exists for students' levels of teacher attachment upon their depressive symptoms.

9) To what extent do levels of teacher attachment (for students grouped by gender) serve as a mediator for condition effects upon students' anxiety symptoms?

*H*o9 - For students grouped by gender, no mediational influence exists for students' levels of teacher attachment upon their anxiety symptoms.

*H*9 - For students grouped by gender, a mediational influence exists for students' levels of teacher attachment upon their anxiety symptoms.

10) To what extent do levels of teacher attachment (for students grouped by ethnicity/race) serve as a mediator for condition effects upon students' anxiety symptoms?

*H*o10 - For students grouped by ethnicity/race, no mediational influence exists for students' level of teacher attachment upon their anxiety symptoms.

*H*10 - For students grouped by ethnicity/race, a mediational influence exists for students' levels of teacher attachment upon their anxiety symptoms.
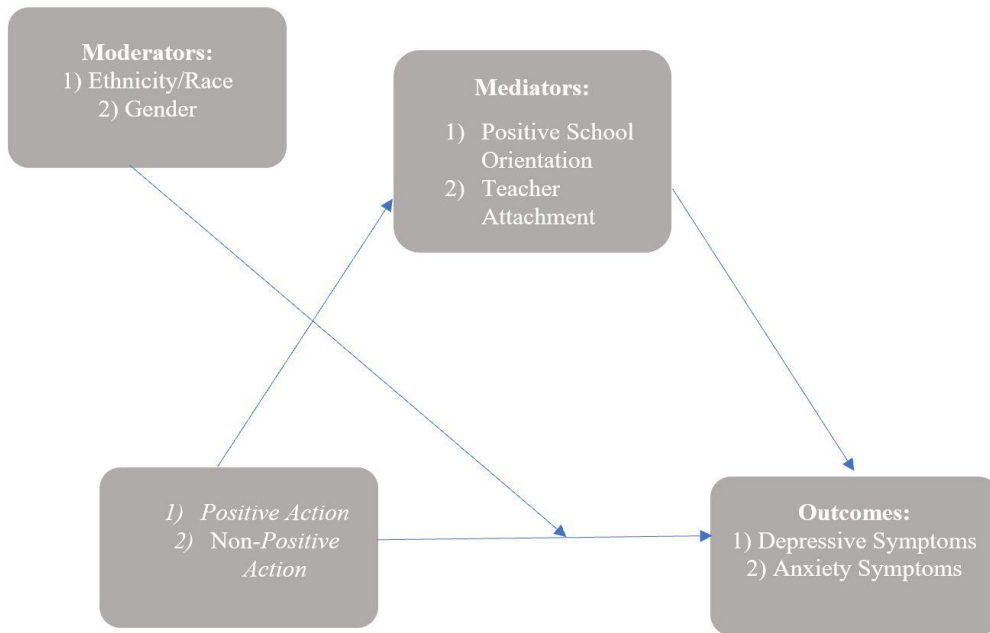
Figure 2   **Hypothesized Moderated Mediational Influences**

Nature of the Study

This study seeks perspectives from *Positive Action* treatment schools and will rely on student-reported perceptions of positive school orientation and attachment to teachers in their school, as well as student-reported answers on the mental health-related measures, utilizing data from adolescent students within the given sample in their seventh and eighth grade years of schooling.

This particular sample was selected because middle school students are at a heightened risk for developing negative mental health outcomes during this time of their lives (McDougall & Hymel, 1998). Such research suggests that there is a need for studies examining how to improve mental health outcomes for adolescents, as they may be especially predisposed for suffering from negative mental health. Furthermore, research has demonstrated that perceptions of school climate dimensions decline as students enter middle school (Rudasill et al., 2013) and that secondary students tend to have less positive perceptions of school climate than elementary students do (Bear et al., 2011). Adolescents have also been found to have increasingly negative perceptions of middle school, over time (Way et al., 2007). Findings will help shed light on how positive school orientation and teacher attachment develops within a universal SEL curriculum, while providing insights for how relational school climate can be improved within a school to positively impact the mental health of students.

It is predicted that there will be a mediational influence on these outcomes, as extensive research has demonstrated the impact that relational aspects of a positive school climate can have upon students' mental health and well-being; this will be discussed in greater detail in Chapter Two. It is hypothesized that positive school orientation will

mediate the improvement of student mental health outcomes, because this construct is related to school community, which has been referred to as students' sense of belongingness within their school, and sense of belongingess has been found to be associated with positive mental health for humans (Baumeister & Leary, 1995). It is also hypothesized that teacher attachment will mediate improvements in students' depressive and anxiety symptoms, as positive teacher relationships have been found to be impactful on emotional outcomes for at-risk youth (Li & Lerner, 2011). Furthermore, by investigating students' positive school orientation and teacher attachment specifically within the wider construct of school climate, findings will shed light on the role of student belongingness in a school community and attachment to trusted adults in the school community, as well as which might have the greater impact on students' mental health.

Theoretical Framework

This study and its hypotheses were informed by two major theories, which are discussed in greater detail below. These theories build a foundational understanding for this study and what it seeks to measure and investigate.

<u>The Ecology of Human Development Theory</u>

Bronfenbrenner's Ecology of Human Development Theory (1979) helps explain student behavioral change and development within the context of their evolving school environment, as well as how the evolution of this development may influence students' outcomes. The overall theory is defined as such:

> The ecology of human development involves the scientific study of the
> progressive, mutual accommodation between an active, growing human being and

the changing properties of the immediate settings in which the developing person

lives, as this process is affected by relations between these settings, and by the

larger contexts in which the settings are embedded (Bronfenbrenner, 1979, p.21).

This theory is based on a principle suggested by Kurt Lewin's (1935) equation: $B = f(PE)$

(as cited in Bronfenbrenner, 1979) in which, according to Bronfenbrenner (1979),

"behavior evolves as a function of the interplay between person and environment" (p.

16).

Bronfenbrenner identifies three levels to this environment, analogous to Russian

nesting dolls, as they are similarly "nested." According to Bronfenbrenner's theory, a

microsystem (the innermost level) is "a pattern of activities, roles, and interpersonal

relationships experienced by the developing person in a given setting with particular

physical and material characteristics" (Bronfenbrenner, 1979, p. 23). A mesosystem (the

middle level) "comprises the interrelations among two or more settings in which the

developing person actively participates (such as, for a child, the relations among home,

school, and neighborhood peer group" (Bronfenbrenner, 1979, p. 25). Finally, an

exosystem (the outermost level), "refers to one or more settings that do not involve the

developing person as an active participant, but in which events occur that affect, or are

affected by, what happens in the setting containing the developing person"

(Bronfenbrenner, 1979, p. 25). This theory also suggests that there is a reciprocal

relationship between an individual's development and their surrounding environment.

According to Bronfenbrenner (1979) on this concept,

First, the developing person is viewed not merely as a tabula rasa on

which the environment makes its impact, but as a growing, dynamic entity that

progressively moves into and restructures the milieu in which it resides. Second, since the environment also exerts its influence, requiring a process of mutual accommodation, the interaction between person and environment is viewed as two-directional, that is, characterized by reciprocity (p. 21-22).

Across the course of development, individuals mature, grow, and inevitably change, and at the same time, changes inevitably occur in their communities, social networks, and personal relationships (Cairns and Cairns, 1995). All of these factors will have an impact on an individual's development.

The *Positive Action* school is a microsystem for student learning, situated within a mesosystem comprised of connections between their school, neighborhood, and home life in inner-city Chicago, situated within an overall exosystem of the wider community of Chicago, in the state of Illinois, within the United States of America. Within the microsystem of a school, the school's environment and community have an impact on student development, as that same student has an impact on their school's environment through their interactions with others in this shared space, across their development. Meanwhile, influences from the mesosystem and exosystem of the wider community and country will impact this development, as well. This takes into account the influences that exist in students' lives outside of school, as children "who have become enmeshed in the social life of the neighborhood are likely to be most deeply affected by the set of peers, institutions, risks, and opportunities in the immediate environment that surrounds them" (Sharkey & Faber, 2014, p. 561). Student development might also have implications for the surrounding neighborhood community, as these students predominantly lived in the same areas of town in which they attended school, and changes in health and behavior

inevitably carried over to their lives outside of school, as well, thus impacting the surrounding community. Universal SEL curricula therefore have implications for the well-being of our wider society, as there will be a ripple effect on communities surrounding the schools in which they are delivered.

At the school level, as common and effective social and emotional practices impact student SEL development, students with improved outcomes will continue to interact with each other within the context of their environment. At the student level, improved SEL outcomes means improved pro-social behavior, honesty, self-development, and self-control for each *Positive Action* child (Ji et al., 2013). Such improved outcomes for children across a school means that students as a group will exhibit more positive, health-related behaviors overall, as an effect of their participation in the curriculum. Interactions with each other and school staff will be reflective of this, which might result in an improved school community overall, as students are helping shape the microsystem in which they reside. They may also become more attached to school members within a more positive community. To that end, students' perception of a negative school environment has been found to have strong association with the likelihood that they will engage in future negative behaviors that will have a subsequent negative impact on their school environment (Goldweber et al., 2013). Therefore, per this example and supported by Bronfenbrenner's theory, there seems to be a reciprocal relationship between students' perception of their environment and how they behave – with future behaviors ultimately impacting the environment, for better or for worse. If students exist in what they perceive as a more positive school environment and with teachers and peers who they respect and are attached to, in theory, they might engage in

fewer problem behaviors –with them and others around them feeling happier as a result of existing in a more positive environment for all.

Key to human development theory is also recognizing that each individual's conception of environment is based on their unique perception of it. This has implications for how researchers measure environment and understand the diversity of perspectives across a study. Kurt Lewin's (1931, 1935, 1951) construct of "life space" or "psychological field" asserts that the most important environment for understanding human behavior and development is not the reality of the objective world, but the world as it is perceived by the humans living within it and interacting with it (as cited in Bronfenbrenner, 1979, p. 23). This will shift and change depending on who this person is and what their view is, so to speak, as Lewin compares this to the view of a shifting landscape as one moves physically across space and time. From each angle, objects in the background and foreground change, and while certain things come closer, others are further away –thus altering what has been seen previously and the perception of the surrounding environment (as cited in Bronfenbrenner, 1979).

As each student in the school will have a unique perception of the school's environment, Bronfenbrenner (1979) states, "One needs to discover empirically how situations are perceived by the people who participate in them" (p. 24). By acknowledging that different groups of students tend to perceive their school climate differently (Buckley et al., 2019), measuring student positive school orientation and levels of teacher attachment for these different groups can help researchers better understand how these areas might evolve with SEL efforts for diverse students in a school. There are also different routes to determining how situations are perceived by

participants in a shared microsystem, suggesting that there are different ways that such perceptions can be measured to accurately capture perceptions of the whole. By focusing on positive school orientation and levels of teacher attachment, the present research will be focusing on students' sense of belongingness within their school environment and their interpersonal relationships with trusted adults to determine how these areas might have influenced their mental health outcomes. The present study also seeks to determine whether belongingness or attachment is most impactful in influencing students' mental health and overall well-being.

The Theory of Triadic Influence

The curriculum of *Positive Action* is based on the Theory of Triadic Influence, which explains how certain behaviors (particularly health-related behaviors) develop and form over time. Understanding how the *Positive Action* curriculum functions to impact student development is key to understanding the role that positive school orientation and teacher attachment may play in influencing students' mental health.

The Theory of Triadic Influence (TTI) was first published by Flay and Petraitis in 1994, proposing a comprehensive health behavior theory with seven tiers that are causes of behavior, (ranging from proximal, to distal, to ultimate outcomes) with three "streams of influence" that flow across these seven tiers. These three streams of influence include intrapersonal, interpersonal, and sociocultural- environmental influences, which flow across the seven tiers of social/personal nexus, evaluations and expectations, affects and cognitions, decisions, and experiences (Flay et al., 2009). The TTI theorists Flay and colleagues (2009) connect their model to Bronfenbrenner's social ecology model, as both have similar interrelated influences. However, unique to the TTI is that it also addresses

the many levels/tiers of causation within its levels rather than just these three nested levels. According to the authors Flay and colleagues (2009),

> Interactions between streams at the upper levels demonstrate the overpowering importance of characteristics of each of (1) a person's biological and personality dispositions, (2) the social situation/context in which the behaviors occur, and (3) the broader socio-cultural environment in which an adolescent is raised and matures, in determining social and HRBs (p. 461).

HRBs are health-related behaviors. The diagram representing the cross-stream and feedback influences within the TTI demonstrate the complexity of this process with the different causes and influences of health behavior creating an interconnected web of effects –and with each one influencing the others in a very systematic and almost predictable way (Flay et al., 2009).

In the TTI, intrapersonal factors are nested within social factors surrounding students in their environment, which are also nested within broader sociocultural environmental factors of the wider community setting (Flay et al., 2009). Students in the present study are from a low socio-economic setting within the Chicago Public School district, and as students growing up in a disadvantaged community face challenges inherent in their environment (Li & Lerner, 2011), such circumstances would ultimately impact the development of their health-related behaviors.

Due to the inherent challenges of their sociocultural environment, an SEL curriculum may be especially impactful for influencing these students' outcomes, as well as in how the different influences may interact within the context of *Positive Action* schools. Relationships with teachers and peers, indicative of the social context described

in the TTI, may also be highly impactful on the development of these outcomes – considering the unique environment such interactions are situated within.

This theory also supports the hypothesis that there may be influences between each individual student's perception of the climate around them and their SEL and mental health development; this is the school community that is receiving the same universal SEL-targeted instruction via the *Positive Action* curriculum. The *Positive Action* curriculum includes individual classroom components to be delivered by teachers, as well as schoolwide components that target the overall climate of the school. The TTI provides theory for how the climate of the school, as developed by the schoolwide components, would interact with and influence students' natural SEL capabilities and mental health, aspects of influence one –their biological and personality dispositions. Within the activities of the curriculum and students' interactions in their daily school life, interpersonal connections and influences with peers would also be developing throughout this process, which fall within influence two –the social context in which their behaviors occur. It is believed that these different influences would work together to help develop a sense of student community and positive orientation towards school, as well as influence students' attachments to their teachers as they learn important SEL competencies from them, which in turn might lead to students feeling happier and less anxious, as hypothesized in this study.

As the TTI proposes that these three influences both independently and interactively impact decisions to behave in a certain way, this accounts for factors that may have direct and/or indirect impacts on behavior (Flay & Petraitis, 1994) and helping to explain health-related outcomes and decision-making. Furthermore, as there are

multiple tiers to the influence, the TTI reminds us that health programs focusing on just one or two levels are unlikely to have a significant impact; instead, they should focus on the three influences across the seven identified tiers (Flay & Petraitis, 1994), as the *Positive Action* curriculum does.

<u>Melding These Two Theories</u>

The concepts described in these theories are also in line with youth development frameworks, which function on the assumption that social environments will be most impactful in fostering healthy development for youth when such environments are also able to create the conditions necessary to meet their unique developmental needs (Whitlock, 2006). Vygotsky (1981) posited that social interactions are important in learning and that such interactions are also foundational to learning. It would hold true then that an SEL curriculum such as *Positive Action* that relies on social interactions and experiences to help students develop SEL competencies within their school environment might be especially powerful in teaching students such social understandings.

Furthermore, as students receive an SEL curriculum with articulated program tenets, they may become unified within a new approach to living their lives, as they are supported with the learning and skills to actualize more positive thoughts and subsequent actions. Meanwhile, as the environment improves and prosocial interactions between students and teachers improve as they participate in the lessons, a sense of community and attachment for the adults facilitating such learning experiences might develop amongst the school body, alongside this unification. This in turn might have a positive impact on mental health outcomes, as students are feeling better about the environment and community in which they find themselves and feeling a deeper sense of

belongingness within it, as well as attachment to the adults delivering the SEL

curriculum.

Definition of Terms

Anxiety – "The tendency to be nervous, fearful, or worried about real or imagined

problems" (BASC, 2016, p. 4)

Depression – *"*Feelings of unhappiness, sadness, and stress that may result in an inability

to carry out everyday activities or may bring on thoughts of suicide" (BASC, 2016 p. 4)

Joiners – Students who joined *Positive Action* schools and were not part of the original

cohort

Positive School Orientation - students' sense of belongingness within and connectedness

to others in their school community, as well as the feeling of emotional safety that is a

product of this (definition developed by the present researcher, based on discussion by

Kaminski et al., 2009)

School Climate - "refers to the quality and character of school life. It is based on patterns

of people's experiences of school life and reflects norms, goals, values, interpersonal

relationships, teaching and learning practices, and organizational structures" (Cohen et

al., 2009, p. 182).

School Community - "… our use of the term 'community' here is focused on the quality

of social relationships among school members… Conceptually, a community is defined

as a place where members: (a) care about and support one another; (b) actively participate

in and have influence on the group's activities and decisions; (c) feel a sense of belonging

and identification with the group; and (d) have common norms, goals, and values

(Roberts et al., 1995, p. 3).

Social and Emotional Development - the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions" (CASEL, 2015, p. 5).

Socio-Economic Status (SES) – "encompasses not just income but also educational attainment, financial security, and subjective perceptions of social status and social class" (American Psychological Association).

Teacher Attachment – "Students can look to teachers as secondary attachment figures, defining a relationship that follows the secure base model of primary attachment" (Johnson, 2014).

Assumptions, Limitations, Scope, Delimitations

This study relies solely on student perceptions of positive school orientation, although teacher data are available on school community and might further inform program effectiveness. Further research ideas include reporting school climate from multiple perspectives –teachers, parents, and/or principals, as well as teacher perception of connectedness and/or attachment to their students and school. This would also address a gap in the literature, as a research synthesis of school climate and SES found only three studies that included climate measurements from more than two perspectives (Berkowitz et al., 2016). The construct of positive school orientation also represents overall climate perception, and students' attachment to teacher is indicative of individual student's personal attachments. The analyses will also group the cohort of *Positive Action* students

with the "joiners" –that is, students who started *Positive Action* in third grade with those who joined *Positive Action* schools at later dates.

Significance of the Study

This study contributes to the wider body of research exploring the impact of school climate and teacher attachment on student mental health outcomes, within a universal SEL curriculum. It is unique as it will be testing the mediational role of relational aspects of school climate upon mental health outcomes for different groups of students, with findings helping explain how SEL efforts achieve their effects for unique learners, and the role of an evolving school climate within such efforts. Findings will help school leaders better understand the importance of developing relational school climate in schools to improve students' mental health outcomes.

Summary

The purpose of Chapter 1 was to provide a summary of the literature on the research problem, as well as the two major theories on which the study is built. Additionally, Chapter One provided a brief overview of the study itself, as well as the research questions it seeks to answer. Chapter Two will dive much deeper into the literature and research on which this study is founded, presenting further theories this study is based upon, related studies, and how these apply. Chapter Three will detail the methodology of the study, and Chapter Four will explain the study results. Chapter Five, the final chapter, will then offer conclusions and next steps for future research on utilizing SEL efforts to positively impact student mental health outcomes, taking into consideration the role that relational school climate has in such efforts.

CHAPTER 2: LITERATURE REVIEW

Introduction

The purpose of this literature review is to provide an in-depth examination of the literature related to the research questions of the present study. This will begin with a discussion of adolescent mental health, especially as it relates to depressive symptoms and anxiety symptoms, highlighting why this population is especially vulnerable and in need of interventions and efforts that target their well-being. Then, the literature review will delve into the construct of climate and previous research suggesting that improving climate can positively impact students' mental well-being. Following this, it will discuss how SEL interventions are one way to improve the complex dimension of school climate, and the importance of relational aspects of climate specifically in improving the mental health of students. Next, the review will focus on literature relating to school community, connectedness, and positive school orientation, sharing related studies and previous findings. After, the review will discuss the construct of teacher attachment and its importance for at-risk adolescents, as well. Finally, the review will close with a discussion on *Positive Action* as an intervention to build school community, connectedness, and school attachment to improve student well-being.

Literature Search Strategy

All literature was found using the databases Education Research Complete, Education Resource Information Center, and Google Scholar. These databases were searched using keywords of *school climate, sense of school as a community, teacher*

attachment, school belonging, school connectedness, student-teacher relationships,

positive school orientation, group differences in school climate, social and emotional

character development, social emotional learning, Positive Action, adolescent anxiety,

adolescent mental health, adolescent mental well-being, and adolescent depression.

Sources were also gleaned from the reference lists of articles found from these internet

searches, as well as related textbooks available from the Boise State University

Albertson's library or from Amazon.com, when the library was closed due to

circumstances of COVID-19.

Depressive and Anxiety Symptoms in Adolescents

There is widespread consensus that mental health promotion and prevention in

children and adolescents is important, but there are also gaps between youth's needs and

resource availability (Unicef, as cited in Kieling et al., 2011). Horney (1945) stated that

"basic anxiety" is the feeling of "being isolated and helpless in a potentially helpless

world" (p. 41). Feelings of anxiety are often associated with stress and decreases in

positive affect. Anxiety symptoms are operationalized in the present study as, "The

tendency to be nervous, fearful, or worried about real or imagined problems." (BASC,

2016, p. 4). Depressive symptoms in the present study are operationalized as, "Feelings

of unhappiness, sadness, and stress that may result in an inability to carry out everyday

activities or may bring on thoughts of suicide" (BASC, 2016, p. 4).

While the prevalence of depression in younger children is low and with no true

gender differences, this increases as students enter adolescence –likely due to the onset of

puberty and with this, maturation of the brain and cognitive abilities (Thapar et al., 2012).

Depression particularly is more often missed in adolescents than it is in adults (Leaf et

al., 1996) likely due to high levels of moodiness and irritability associated with this age

group (Thapar et al., 2012) –which can make it easy for adults to overlook negative

health symptoms in adolescents as being "normal." Gender differences have also been

documented in studies of adolescent mental health with young women being 1.5 – 3

times more likely to suffer from depressive disorders and attempt self-harm than boys are

(Patel et al., 2007). Worry and anxiety have also been associated with inequality, such

that financial security can explain a portion of the difference in well-being between high

and low SES statuses (Buttrick et al., 2017).

A review of psycho-educational interventions for adolescent mental health found

that these programs can target individuals with depression and negative mental health,

informing and empowering them to make decisions about their well-being while also

promoting resilience (Jones et al., 2019). However, pitfalls to such efforts can lie in the

delivery of their programs, communication therein, difficulties in participants' ability to

concentrate and motivation to participate, and participant dependency, to name a few

(Jones et al., 2019). Therefore, a more proactive, universal approach for adolescents in a

school setting may be an answer to improving adolescent mental health and increasing

their well-being.

Previous research has demonstrated that SEL curricula can improve adolescent

students' mental health outcomes (e.g. Barnes, 2019; Edwards et al., 2005; Frank et al.,

2014; Jones et al., 2011). *Positive Action* is a universal SEL curriculum with measured

effects for at-risk students' mental health in outcomes of depression and anxiety (Lewis,

DuBois, et al., 2013). Previous *Positive Action* research from the Chicago Trial has also

demonstrated the curriculum's impact in improving student perceptions of different

aspects of school climate (Bavarian, Lewis, Silverthorn, et al., 2016). In seeking answers

for how these constructs evolve and change through students' participation in the

curriculum, the present study will investigate how two components of relational school

climate –positive school orientation and levels of teacher attachment– mediated decreases

in levels of depressive and anxiety symptoms for students attending *Positive Action*

schools.

Researchers may include mediational variables in a study for a variety of reasons,

and in the present study, the primary reason is to evaluate the process of change, as

mediation analyses can provide insight on the processes by which an intervention was

able to achieve its effects on outcome measures (Mackinnon, 2011). As students in the

original cohort of *Positive Action* experienced decreases in both outcomes of depression

and anxiety (Lewis, DuBois et al., 2013), the present study seeks to understand the

process by which these were influenced, by testing the extent to which positive school

orientation and teacher attachment, aspects of relational school climate, might have

served as mechanisms for these changes when "joiners" are also added to the group.

School Climate: A Powerful Force in Schools

One answer to improving the mental health of disadvantaged youth may lie in

efforts aimed at improving the climate of schools, thus harnessing the power of the

school environment to counteract risk factors inherent in students' lives and to improve

student well-being. For at-risk youth, a perceived positive school climate can serve as a

protective factor for mental health problems (Kuperminc et al., 2001; Loukas &

Robinson, 2004). A positive school environment has been found to be protective by

moderating associations between negative home environments and student engagement in

health risk behaviors, such that the effects of positive school environments are greatest for children coming from the most negative homes (Freeman et al., 2011). In a review of related literature, Cohen and colleagues (2009) discussed school climate, saying that it, "refers to the quality and character of school life. It is based on patterns of people's experiences of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures" (p. 182).

However, research has demonstrated that high poverty schools experience more negative school climate than more affluent schools do (Khoury-Kassabri et al., 2004), with researchers arguing that the disparities existing in disadvantaged neighborhoods and the challenges high poverty people face can have a negative impact on the climate of schools found in such communities (Berkowitz et al., 2016). Community stressors ultimately influence schools' efforts to create positive school climates that are deemed as safe and supportive for students (McCoy et al., 2013). In effect, many of the same contextual influences that negatively impact students' mental health outcomes can also have an adverse effect on the climate of the schools they attend.

While schools can't fix all of the challenges students encounter and experience in their lives outside of school, they can work to build positive school climates that will in turn positively impact the health and well-being of the students they are serving. In research examining the protective influence that positive school climate perception can have on diverse student outcomes, researchers have found that this influence is most powerful for students from high-poverty schools (Battistich et al., 1995). A research synthesis of 78 studies with associations between school climate, socio-economic status (SES), and academic achievement reviewed research demonstrating the positive effects

of climate on low SES students' outcomes (Berkowitz et al., 2016). In light of their findings, the authors concluded that, "Schools with lower SES backgrounds should not necessarily demonstrate poor climate and that positive classroom and school climates can and should be nurtured in schools serving individuals living in poverty" (p. 458). Furthermore, students from families experiencing poverty who perceived a positive school climate have been found to exhibit similar academic behaviors as peers coming from higher-income households, and positive perceptions of school climate have also been associated with higher grades and more positive student behaviors overall (Hopson & Lee, 2011). Regardless of their family structure or background, students with higher school climate perceptions have also been found to report higher GPAs (O'Malley et al., 2015). As the school context plays an important role in young people's overall well-being (Karvonen et al., 2005), and given the importance of improving the mental health for diverse youth across America, school climate may be an answer to this, and research seeking how to improve the climate of schools is needed to inform school practices and student outcomes.

In addition to utilizing climate to help improve student outcomes, the Every Child Succeeds Act (ESSA) also now requires states to measure at least one indicator for student success (ESSA, 2015), and this makes climate an area of focus for research seeking to help schools be equipped to meet such accountability standards. However, the challenge in education is knowing how to cultivate and foster a positive climate, as schools are not given a one-size-fits-all formula or model to follow. Therefore, many schools may suffer from negative school climates while also contending with negative

mental health within their students–often without understanding the ways in which these areas can be improved.

Social and Emotional Learning Practices to Improve School Climate

When faced with the complex task of improving school climate to impact student mental health outcomes, integrating school-wide social and emotional learning (SEL) practices may be one answer, as students' perceptions of their teachers' and school's teaching of social and emotional learning skills have been found to be positively associated with their perceptions of school climate (Bear et al., 2017). Students of teachers who systematically used social and emotional practices experienced an increase in positive perceptions of school climate and also better academic and social behavior overall (Brock et al., 2008). A study investigating the impact of an SEL program found that students in schools with negative school climate in the year prior benefited the most from the program's efforts (McCormick et al., 2015). Students who participated in an anti-bullying SEL curriculum also had more favorable perceptions of their school's climate, over time (Brown et al., 2011). These findings are insightful but not surprising, as Zins and colleagues (2007) state that,

> Intrinsically, schools are social places and learning is a social process. Students do not learn alone but rather in collaboration with their teachers, in the company of their peers, and with the support of their families. Emotions can facilitate or hamper their learning and their ultimate success in school. Because social and emotional factors play such an important role, schools must attend to this aspect of the educational process for the benefit of all students (p. 191).

What is School Climate, and How is It Operationalized?

Within the broader context of school climate, there is extensive research on school climate as reported by members of the school community (Libbey, 2004), but to truly understand the influence and role of school climate, researchers must examine which aspects are most relevant to their particular study, as climate has many different facets. Researchers studying climate have attempted to dissect its key dimensions, developing frameworks that encompass its many dimensions and help explain its key domains for the educational community. Cohen and colleagues (2009) identified four overarching dimensions of climate, which were: safety (i.e. physical safety and social emotional safety), teaching and learning (i.e. quality of instruction; social, emotional, and ethical learning; teacher professional development; and school leadership), relationships (respect for diversity; school community and collaboration; and morale and connectedness), and environmental-structural elements (i.e. cleanliness; space and materials; and curricular/extracurricular activities). Within this wider framework, the dimension of "relationships" captures the essence of the relational aspects of school climate. In a review of twelve different school climate measurements, researchers found that "relationships" was the only domain included in all of these measures (Ramelow et al., 2015) –suggesting its importance in research seeking to accurately measure the climate of schools.

Previous research has also demonstrated that relational climate can be especially impactful upon the mental health of adolescents. In a study on the impact of parent, teacher, and peer relationships on adolescent immigrant mental health outcomes, researchers found that relationships within the school environment (being parental

support at school, teachers support, and peer relationships) were the most significant predictor of mental well-being for these students (Walsh et al., 2010). There are also connections between interpersonal relationships and adolescents' mental well-being, as studies have found that perceived quality of peer relationships predicted symptoms of teenagers' mental health (Eberhart & Hammen, 2006) and levels of perceived teacher support have, as well (Wang, 2009).

Aspects of school climate are malleable (Wang & Degol, 2015), and therefore facets of relational climate such as community and relationships between members can be improved and changed with targeted efforts and strategic interventions (Solomon et al., 1996). As minority youth and students from low SES families also disproportionately attend schools that are characterized as being, "crowded, understaffed, dysfunctional, and inadequately funded" (Li & Lerner, 2011, p. 244), high-quality interventions delivered in such settings can become a public resource by benefitting these schools that may be lacking in other important areas. Researchers have also recommended building a sense of school community as a key component in prevention programs addressing student outcomes such as loneliness and general well-being (Pretty et al., 1996). Within this, improved social interactions between students and teachers can also lead to increases of teacher attachment, possibly improving their mental health in this process.

Positive school orientation and teacher attachment –two aspects of relational school climate utilized in this study –will be discussed in greater detail in the following sections.

Positive School Orientation and School Connectedness

Positive school orientation as measured in the present study is comprised of nine items drawn from the Sense of School Community Scale that focus on school connectedness, as well as one item from the Feelings of Safety at School Scale (Kaminski et al., 2009). Therefore, key aspects of a positive school orientation are that students perceive connectedness amongst school members, and they also feel safe within this school community. This sense of connectedness fits within the wider construct of sense of school as a community that relies on relationships within the school setting and a sense of belongingness within this community (Battistich & Horn, 1997). It is also likely that students who feel more connected to their school, peers, and teachers experience greater attachment to the adults in their schools, as teacher support has been used to describe connectedness, as well (Whitlock, 2006).

Much like other climate-related elements, connectedness has assumed other different names across the research, including: school attachment, school bonding, school climate, school involvement, student satisfaction, and positive orientation toward school (Whitlock, 2006). Whitlock (2006) states that such connectedness is conceptualized as something not merely received (e.g., "To what extent do you feel cared for?") but reciprocated as well (e.g., "To what extent do you care about your school?") (p. 15). This connects to Bronfenbrenner's Ecology of Human Development theory (1979) and tenets of Flay and Petraitis's TTI theory (1994) in that humans impact and influence their surrounding environment as it impacts and influences them, and in a connected school community, students feel cared for by their peers and teachers, just as they care about their schools, peers, and teachers.

In Maslow's hierarchy of human needs (1968) "love and belongingness" are at the center, taking precedence before other needs such as esteem and self-actualization can be achieved (as cited in Baumiester & Leary, 1995). When such a sense of belongingness with others is present, what is known as "sense of community" can also develop (Osterman, 2000; Solomon et al., 1996). In Robert et al.'s (1995) definition of the sense of school as a community, the authors iterate the importance of the relationships that exist between school members and the impact of these on developing community across the members, stating that ":…while it is true that a school is a place where people interact, our use of the term 'community' here is focused on the quality of social relationships among school members…" (p. 3). Terms such as "belongingness," "relatedness," "support," "acceptance," "membership," or "sense of community" seem to synonymously deal with the same concept for students: their psychological experience of support and involvement within their school community (Osterman, 2000, p. 326). Others have posited that students who have a high sense of their school as a community are also more bonded to the schools they attend (Battistich & Horn, 1997; Payne et al., 2003), as a result of this belongingness. Because the Positive School Orientation measure is mainly comprised of positively-worded items from the Sense of School Community Scale, the wider construct of sense of school community will be discussed in greater detail below – helping to explain what positive school orientation is and how it functions for adolescent students.

Conceptualizing Sense of School as a Community

From a general sense, one of the earliest conceptions of a psychological sense of community was given by Sarason (1974), stating this as: "the key to the understanding of

one's society's most pressing problems, the dark side of individualism, manifested in alienation, selfishness, and despair" (p. 157). Within their discussion, one of Sarason's (1974) overarching arguments is that a sense of community is key to individual well-being and the well-being of overall society, and that a lack of community will lead to negative effects on the well-being of the individual and that of the collective society, as well. Other researchers have built upon these concepts, distinguishing between community and social support (these being individual perceptions of their social environment), finding that a sense of community is more impactful than just the existence of social supports alone (Pretty et al., 1994). Furthermore,

> Sense of community is not necessarily rooted in actual experience, but in the perception that one is part of the 'common good' which will be accessible to you should the need arise…Sense of community may be strengthened by actual experiences of social support, but it is not dependent on it (Pretty et al., 1996, p. 366).

In a seminal discussion of sense of community, McMillan and Chavis (1986) define community as:

> A feeling that the members of a community have in relation to their belonging to a community, a feeling that members worry about each other and that the group is concerned about them, and a shared faith that the needs of the members will be satisfied through their commitment of being together (p. 9).

Within their theory, McMillan and Chavis (1986) include the dimensions of *membership, influence, integration,* and *fulfilment of needs* as being integral to this sense of community. Roberts et al. (1995) also utilized this framework for the development of

their full Sense of School Community Scale, however, only the items relating to
relationships and belongingness are included in the Positive School Orientation measure.
The different aspects of McMillan and Chavis's (1986) definition are outlined below, as
well as a discussion of how certain aspects relate to the connectedness within a school
community, as measured by the positive school orientation construct.

    Membership, according to McMillan and Chavis (1986), "…is the feeling of
belonging or sharing a sense of personal relatedness" (p. 9). McMillan and Chavis (1986)
identify that there are boundaries in this, meaning that in a community, there are people
who belong and there are those who do not belong. They also identify aspects of
emotional safety as being nested in a larger sense of safety; such boundaries that are set
forth by members create security for the collective. Meanwhile, within this membership,
the sense of belonging and indentification within the group, "involves the feeling, belief,
and expectation that one fits in the group and has a place there, a feeling of acceptance by
the group, and willingness to sacrifice for the group" (p. 10). Personal investment within
the group then develops and contributes to this, with common symbol systems that create
and thereafter maintain the sense of community. An illustrative example of a common
symbol in the *Positive Action* schools is the use of the Thoughts-Feelings-Action circle
(as depicted earlier in Figure 1) which is referenced across all units and hung up in
posters in the classrooms.

    Influence, according to McMillan and Chavis (1986) is bidirectional. They discuss
that within this, members hold a certain amount of influence over what the group does,
while a cohesive community has an ability to influence its members, as well. However,
Positive School Orientation lacks the items relating to the area of autonomy and influence

from the original Sense of School Community Scale. Other community-related scales that

have been adapted for an adolescent population have also been criticized for their

inclusion of items relating to "influence." For example, the widely-used Sense of

Community Index (SCI) has been adapted for school and neighborhood community

contexts (Pretty et al., 1994; Pretty et al., 1996) and was built based on McMillan and

Chavis's (1986) seminal framework for sense of community (Chavis et al., 1986), but

researchers have found fault with the wording of this measure –and whether it is suitable

to be used to measure adolescents' perception of community for this reason (Chipuer &

Pretty, 1999) –specifically in items relating to community influence, as described by

McMillan and Chavis (1986). For instance, when adapted for use in a neighborhood

setting, a factor analysis found that items relating to the "influence subscale" loaded on

separate factors –suggesting that these didn't hold together well to explain community

influence for students, perhaps because they may feel less of an influence to change

elements existing in their neighborhoods (Chipuer & Pretty, 1999). In a school

community, this sense of influence likely manifests itself differently, for if students feel

like they are a valued member of their school community, they may also feel a sense of

autonomy and empowerment to make decisions within that community they are

contributing to. While these are not included to measure positive school orientation, these

elements of autonomy and influence are included in other sense of school community

definitions (Battistich et al., 1995; Roberts et al., 1995) and research has found students'

perception of how democratic their school's climate is (i.e. how much influence they

have in learning and school-related matters) to be significantly and independently

predictive of their overall school sense of community at the school, classroom, and student level (Vieno et al., 2005).

To that end, studies have examined the impact of students' perceived level of influence and autonomy in relation to their mental health outcomes. It has been found that student sense of autonomy has such an influence, as measured by "whether students felt that they had a say in how things worked in school, helped decide how class time was spent, given a chance to help make decisions, and asked what they would like to learn about" (Way et al., 2007, p. 198). Researchers found that the rate of change in students' perceptions of opportunities for autonomy were significantly related to the rate of their depressive symptoms, behavioral problems, and self-esteem. Furthermore, as these students perceived sharper decreases in opportunities for decision-making, they also reported increases in depressive symptoms and behavior problems, as well increased declines in self-esteem (Way et al., 2007). In another study with a racially-diverse sample of seventh grade students, the level of students' perception of support of autonomy had negative associations with negative behavior and depression (Wang, 2009) –such that the more empowered students felt (as autonomy was measured by "perceptions of opportunities to make decisions in school") the more well-behaved and less depressed they reported being (Wang, 2009, p. 244). Future studies seeking ways to improve adolescent mental health might therefore focus on areas of influence from the wider Sense of School Community Scale, but in the present study, influence is not included in the conceptualization of positive school orientation because the researchers (Kaminski et al., 2009) did not include this in their construct.

The third dimension of McMillan and Chavis's (1986) theoretical framework, *integration and fulfillment of needs,* is, in other words, reinforcement –which acts as a motivator for group members' behavior so that membership within a particular group is rewarding. McMillan and Chavis (1986) cite status of group membership and fellow members' competence as being reinforcers, as well as the group having shared values that all believe in and subscribe by.

The last dimension of this framework is a *shared emotional connection*. Previous research has found associations between students' sense of emotional connection within their school and their mental health outcomes (Bond et al., 2007; Foster et al., 2017; Shochet et al., 2006). McMillan and Chavis (1986) cite features that are key to this, including contact hypothesis (increased interactions between group members will cause them to become closer), quality of interaction (positive experiences and relationships will increase bonding), closure to events (important community tasks and interactions have resolutions), shared valent event hypothesis (important shared events will increase community bond), investment (importance of the community to the member and vice versa), effect of honor and humiliation on community members, and finally, the spiritual bond that exists between members of a community. These items are hypothesized to develop through meaningful interactions within research-based SEL curricula and are reflective of an emotionally connected school.

A qualitative study interviewed forty-six children ages nine to twelve years old on their concept of their school as a community –with results indicating that the children's responses aligned closely with McMillan and Chavis's (1986) model (Pooley et al., 2008). The researchers talked with students about statements such as, "Tell me about

your school community," and children discussed not only belonging in their school but also the importance of aspects of influence, as well as the fulfillment of group needs for healthy functionality (Pooley et al., 2008). According to the authors,

> Overall, the findings suggest that children are able to articulate their understanding of their school community. Most importantly children focus on people and the functionality of their relationships with these people. This most probably reflects the attachments children form within their school microsystem (Pooley et al., 2008, p. 9).

While sense of school as a community is a broad construct, the aspects relating to relationships are key to students' conception of community, as it exists within their school. This provides evidence for their inclusion in the positive school orientation construct as defined in the present study, and its focus on relationships between school members to create a sense of belongingness and connectedness.

How a Caring, Connected Community Develops

Studies have shown that when students are in competition, they are at an increased risk of developing negative mental health outcomes. Among boys, perception of more competition and friction and less cohesion among peers has been found to be predictive of symptoms of depression (Kuperminc et al., 2001; Loukas & Robinson, 2004). Girls reporting more friction among peers have also reported greater depressive symptoms (Loukas & Robinson, 2004). In a connected school community, there is theorized to be less competition and friction, as students feel belongingness within the greater collective. As belongingness is innate to human development (Baumeister & Leary, 1995), not pursuing efforts that integrate at-risk adolescents into adaptive

communities could lead to an increase in "street communities" as adolescents seek to fulfull their need for a community with others (Pretty et al., 1996). This, in turn, might have negative impacts on the students' development and overall mental health outcomes as a result of problem behaviors that could arise from such circumstances.

The famous Robbers Cave Experiment conducted by social psychologists Sherif and colleagues (1961) studied how intergroup relations are formed, and in this, provides a basis for better understanding belongingness and friction within and between groups and how community and connectedness can develop among young people. In this 1961 study, the researchers brought two unacquainted groups of boys together and assigned them into two groups, the Eagles and the Rattlers. The two groups experienced friction and competition both within and between groups, as the researchers had them engage in a variety of games and activities, including sports, tug-of-war, and bean tossing. In little time, a sense of loyalty and group identification quickly formed within these respective groups, as well as a strong sense of competition and opposition to the opposing group, as they were working together to accomplish goals –and in opposition to the other team (Sherif et al., 1961). The researchers emphasized that these were not due to pre-existing feelings or attitudes previously held by the boys, but rather, were outcomes of each group's respective cooperation amongst its team members and their mutual perception of teamwork within their group. What finally reduced friction between the two groups was dissolving the teams and bringing all of the boys together to work on shared subordinate goals that were in the best interest for all; for example, in the first attempt, the researchers cut off the camp water supply, creating a scenario in which both groups would have to work together to come to a solution in order to bring water to the camp (Sherif et al.,

1961). The research team continued this with other scenarios that would require all of the boys from both the Eagles and the Rattlers to cooperate on common goals that were in the best interest of the collective, so that by the end of the camp, the two groups had dissolved into one cooperative group that had, in essence, developed its own sense of community.

This study revealed how belongingness within a group can create a team sense of community and how groups in states of friction can be brought together to achieve goals that are in the best interest of the group, as members will cooperate towards achieving these common goals. Members assumed roles but these were not assigned by the researchers; instead, the boys held autonomy to do what they felt was necessary for the collective and acted accordingly. Over time, this mutual cooperation reduced the tension and animosity between previously-opposed groups and helped develop a sense of community for all members. Their study demonstrated the boys' natural inclination to develop connectedness and bonding with others, both within their original groups and then as a wider group –demonstrating that cooperation, and within this, a group sense of community, can be fostered when youth are brought together to work on achieving common goals for the betterment of the collective.

Building Community and Connectedness to Improve Student Mental Health Outcomes

Baumeister's Need to Belong Theory offers a theoretical basis that connectedness within a community could be a possible mechanism for change in student mental health outcomes. According to theorist and researcher Baumeister (2012), "The core idea of the need to belong theory is that people have a fundamental, strong, and pervasive motivation to form and maintain at least a certain minimum number of social relationships" (p. 124).

This involves two key criteria within this: "first, there is a need for frequent, affectively pleasant interactions with a few other people, and second, these interactions must take place in the context of a temporally stable and enduring framework of affective concern for each other's welfare" (Baumeister & Leary, 1995, p. 497). Sense of community has been characterized as a sense of belongingness within a group (Baumeister & Leary, 1995), and others have characterized sense of school as a community as students' belongingness within their school (Osterman, 2000; Solomon et al., 1996). As Positive School Orientation draws on items related to relationships and social belongingness from the Sense of School Community Scale, the Need to Belong Theory helps explain how changes of a sense of such belongingness within a school could have an impact on students' mental well-being.

Baumeister posits that the need to belong is found in all humans across all cultures, but with variations within how this need is expressed and satisfied (apart from what he describes as "an occasional, seriously warped individual" who may not possess such a need) (Baumeister & Leary, 1995, p. 499). This need stems from internal mechanisms that guide humans to form social groups and relationships, because as early humans, maintaining social bonds would yield reproductive benefits as well as survival benefits in times of scarcity and competition, and being part of a group might provide protection for oneself and access to the necessary resources to survive (Baumeister & Leary, 1995). Humans have thought processes and patterns that appear to be fundamentally concerned with establishing and maintaining social relationships, and real or imagined changes in belongingness will result in certain negative emotional responses (Baumeister & Leary, 1995).

Baumeister and Leary (1995) state that, "If belongingness is indeed a fundamental need, then aversive reactions to a loss of belongingness should go beyond negative affect to include some types of pathology" (p. 500). People who experience meaningful social deprivation might exhibit maladjustment or stress, behavioral or psychological pathology, and possible health problems, as well (Baumeister & Leary, 1995). Similarly, exclusion from social groups will create anxiety, threats to one's social group will create feelings of jealousy, happiness is associated with having close relationships, and less of a sense of belongingness may result in feelings of sadness and depression (Baumeister & Leary, 1995). In theory, if *Positive Action* students are experiencing increases in perception of connectedness within a school community, they are experiencing an increased sense of belongingness as this school community develops -- which according to Baumeister's theory, might also be mitigating feelings of anxiety and depressive symptoms. This theory offers support for the role that positive school orientation –as it encompasses feelings of belongingness within such a community—would have on students' mental health outcomes.

In relation to the broader construct of sense of school as a community, researchers Pretty et al. (1994) adapted the Sense of Community Index to measure school and neighborhood perceptions of community for students 15-19 years of age. They used these measures alongside student perception of five areas of social support (number of supports, satisfaction of support, nondirective support, directive guidance, and tangible assistance) to capture a holistic view of students' perceived support from the people and contexts in their lives. They were seeking associations between these areas and student self-reported levels of loneliness, an indicator of mental health. The researchers

discovered that neighborhood and school community scores and all of the social support scores were significantly and negatively correlated with students' reports of loneliness (Pretty et al., 1994). However, of these different measures, the relationship of students' sense of their school community was the strongest predictor of student loneliness. Their findings revealed that while social supports can predict student levels of loneliness, it is students' sense of community –the combination of the context in which such supports occur, alongside the existence of such supports –that was most impactful. As aforementioned, it was also a sense of school community that was the strongest predictor –rather than the sense of community they perceived as existing in their neighborhood contexts.

In another study, researchers Pretty et al. (1996) examined adolescent sense of neighborhood and school community respectively, alongside measures of student social support. Sampling was done by having research assistants seek participants from adolescent social settings –that is, approaching random adolescents in the downtown malls of a large city. This research was done via interviews to determine associations of these community constructs with students' sense of well-being, as measured by The Subjective Sense of Well-Being Scale (Davidson & Cotter, 1991) which seeks to measure students' levels of happiness, enjoyment of life, worry, and ability to cope. In a study utilizing this measure with an adult sample of participants, Davidson and Cotter (1991) had found that items from The Subjective Sense of Well-Being Scale also had significant correlations with participants' reported sense of community. Pretty et al. (1996) found for the adolescent sample that neighborhood and school community and social support scores were again negatively correlated with loneliness. For subjective well-being, none of the

social support scales correlated, while neighborhood sense of community explained a significant amount of variance for happiness, worry and coping. School sense of community was statistically related to happiness worry and coping, but much less so than sense of neighborhood community. Pretty et al. (1996) found that these younger, adolescent individuals had a higher sense of community in their neighborhoods and schools than students from an older sample did, in previous work by Pretty et al. (1994).

These studies revealed obvious sampling differences, but they also lend support for the impact of community (both school and neighborhood) upon adolescent students' subjective well-being. From an ecological perspective, influences from the neighborhood have impacts on the climate and community of the school, and as students in the present study predominantly attended schools situated within their neighborhoods, there may even be a carryover influence between neighborhood sense of community and that which they perceive within their schools.

Opportunities for involvement in school life and developing identity within school have also been found to serve as protective factors for the mental health of children (Patel et al., 2007). Previous research has found associations between students' sense of emotional connection within their school and their mental health outcomes, as well (Bond et al., 2007; Foster et al., 2017; Shochet et al., 2006). When examining levels of school connectedness –that is, students' sense of belonging, respect, encouragement, and inclusion within their school—researchers discovered a strong correlation between this and students' future depressive and anxiety symptoms, such that more connected students felt less anxious and depressed (Shochet et al., 2006). School connectedness has been found to have significant relationships with eighth grade students' depressive symptoms,

such that the more connected students felt to both their peers and their schools, the less depressed they reported being (Bond et al., 2007). However, eighth grade students with low school connectedness but good social connectedness were at a heightened risk for anxiety and depressive symptoms later in tenth grade (Bond et al., 2007). Such findings suggest that it is the combination of both school and social connectedness that leads to this decrease in negative mental health outcomes (Bond et al., 2007) –as would be present in a connected school community. Another study with a twelve to fifteen year old sample found that students who felt more connected to their schools reported fewer depressive symptoms, less suicidal ideation, and less social anxiety (Foster et al., 2017). The Center for Disease Control has also offered recommendations to promote connectedness among individuals and within institutions as a prevention strategy for suicidal ideation and behavior (CDC, 2013). As connectedness within a school community is integral to positive school orientation (Kaminski et al., 2009), these findings provide evidence for the hypothesis that positive school orientation can positively impact students' mental health.

<div align="center">**Teacher Attachment**</div>

Teacher attachment is indicative of the child's attachment to the adults within their schools; these are the people they are learning from and spending time with each day in school. It is hypothesized in the present study that students' attachment to their teachers mediated their decreases in depressive and anxiety symptoms. To conceptualize teacher-child relationships, scholars have used different models, including attachment-based models, social support models, socialization models, interpersonal theory models, developmental systems models, and social-motivational models (Verschueren, 2015). An

attachment-based model is being used in the present study, as adolescent attachment is theorized to exist as a result of an innate drive humans possess, stemming from attachment to mothers in infancy (Bowlby, 1969). Such attachment is said to influence the child's success in schools through two pathways –one is indirectly, through students' attachment to their parents, the other is through students' direct attachment to their teachers and schools (Bergin & Bergin, 2009).

Bowlby established Attachment Theory, with connections to Freudian thinking that such need for attachment stems from humans' bond to their mothers as infants, and this manifests itself in a need to reestablish similar contact with others as humans progress through life (Bowlby, 1969). Baumeister's Need to Belong theory differs from Bowlby's in that it maintains that the infant's relationship to the mother is a product of an inner drive and need to connect with others –rather than human attachment being a consequence of having had early attachment as infants (Baumeister, 2012). When discussing attachment, "It is *not* synonymous with dependency; instead, secure attachment *liberates* children to explore their world. Attachment is also *not* synonymous with general sociability. Both outgoing and shy children can be securely attached" (Bergin & Bergin, 2009, p. 142). Attachment has also been characterized by closeness and conflict within a relationship (O'Connor et al., 2012), and in a school setting, this would be reflective of a child's relationship to their teachers and peers. Bowlby posits that satisfactory development of attachment is important for human mental health (1969), and attachment theory will be discussed in greater depth to build a foundation for the role teacher attachment might have in influencing at-risk students' mental health outcomes.

In his book, *Attachment and Loss,* Bowlby describes the ill effects of detachment for young children, citing examples from Robertson (1952) who collected observational data of toddlers aged fifteen to thirty months staying in residential nurseries and hospital wards (as cited in Bowlby, 1969). These children had previously held a secure relationship to their mothers, with no previous separation and demonstrated a "predictable sequence of behavior" upon experiencing separation (Bowlby, 1969, p. 27). The data was distilled by Bowlby into three phases described as protest, despair, and detachment –in which the child is first distressed at the separation from its mother, followed by despair marked by hopelessness and a preoccupation with the missing parent, followed by detachment. The phase of detachment is marked by acceptance of the nurse and their care. In this phase, when the mother visits, "it can be seen that all is not well," (Bowlby, 1969, p. 28), as the child exhibits lack of recognition, apathy, and remoteness. Then, if the stay in the hospital or residential nursery is prolonged, and the child continues to have an experience of being attached to different nurses who come and go, this repeats the experience of the first experience of loss to its mother. Over time, observations revealed that the children in the study became less committed to these stand-in mother figures and over time, stopped exhibiting real attachment to anyone. Such findings demonstrated the importance of attachment for young children, and the consequences of insecure attachment patterns in the development of children. Bowlby hypothesized that insecurity in such primary attachments would be positively associated with anxiety and depression (1969).

Ainsworth (1989), who offered major contributions to Bowlby's original Attachment Theory (so much so that they shared authorship of its development in later

versions), stated that an attachment bond is a "relatively long-enduring tie in which the partner is important as a unique individual and is interchangeable with none other" (p. 711). As teachers typically do not spend many years with their same students, it can be difficult to classify students' teacher attachment as such –especially in middle school, when students learn from multiple teachers (Verschueren & Koomen, 2012). It is also more developmentally appropriate to assume that younger elementary students would be more likely than adolescents to have an attachment-bond to their teachers within their attachment-systems (Verschueren & Koomen, 2012). Extensive research has supported the validity of early childhood teacher-child relationships within an attachment-based model, but few studies have included middle childhood samples in such studies (Verschueren, 2015). This may be why there is very limited research examining the relationship between teacher attachment and adolescents' depressive and anxiety symptom outcomes. However, researchers have also contended that, "to some extent, the differences between adolescents' attachment behaviors and those of infants and younger children are clearly not as large as they at first appear" (Allen & Land, 1999, p. 319). Attachment in adolescence seems to evolve to become its own system, based on patterns from early childhood.

To that end, other researchers have argued that adolescents may depend on their peers and teachers to fulfill attachment needs when they do not have access to their primary attachment figure, as in the case of attending school and experiencing physical separation from their parents (Seibert & Kerns, 2009). As children get older, they are also more capable of diversifying their attachment networks –that is, to include a wider array of people in their lives they are attached to (Seibert & Kerns, 2009). This suggests that

middle school students may be at a stage that is developmentally appropriate to forge healthy attachments to other trusted adults in their lives, such as their teachers in a middle school. Other research has found that nonparental supports (i.e. peers and teachers) had stronger influences on adolescents' levels of self-esteem than their parents' support did (Colarossi & Eccles, 2003). It has also been theorized that in adolescence, relationships with non-parental figures may meet young people's attachment needs better than parental relationships can (Allen & Land, 1999). This is because adolescence is a time that may lead young people to actively avoid relying on their parents' support when they feel stressed (Allen & Land, 1999) –perhaps seeking support from other adults, instead.

Other discussions by Bowlby (1969) within Attachment Theory center on what he refers to as children's "principal attachment-figure," stating that this is based upon "who cares for him and on the composition of the household in which he is living" (Bowlby, 1969, p. 305). In his discussion, he cites studies demonstrating that while it is typical for a child's mother to be their principal attachment-figure, the role can be adopted effectively by others, "provided a mother-substitute behaves in a mothering way towards a child, he will treat her as another child would treat his natural mother" (Bowlby, 1969, p. 305). And while these studies draw on data from children much younger than adolescents, they capture the instinctual nature of young people to form attachments to trusted, mothering adults. Bowlby (1969) also maintains that, "attachment behavior does not disappear with childhood but persists throughout life. Either old or new figures are selected…" (p. 350). From an attachment perspective, adolescence is also a time of transition in which children are becoming less dependent on their primary attachment

figures (Allen & Land, 1999), and they may be more capable of forging attachments to other trusted adults.

Researchers have also contended that the quality of the relationship between a teacher and child is impacted by many factors –those for the child, the teacher, as well as in the contexts surrounding them; this includes the size of the class, classroom climate, family economic background, and contact between school and family (Verschueren, 2015). Attachment has also been said to be important for vulnerable children regardless of their age, in which "the role of the teacher as an attachment figure (secure base and safe haven)" may be key to their development (Verschueren & Koomen, 2012, p. 207). According to the researchers, this is because "These children's attachment systems get activated more easily and their capacity for self-regulation is relatively limited, making adult-caregiving support, very likely including help provided by teachers, crucial for their survival and growth" (Verschueren & Koomen, 2012, p. 207). As students in the present study came from disadvantaged, minority communities, they can be classified as vulnerable –thus revealing the potential impact that teacher attachment may have had in their SEL development and mental health.

However, a child who lacks trust in the availability of their parents is more likely to lack trust in the availability of their teachers, as their expectations are based on experiences from their primary attachment figures (Verschueren, 2015). Elementary students with insecure early maternal attachment relationships have also been found to be at a higher risk for developing externalizing and internalizing behaviors in late childhood (O'Connor et al., 2012). The present study hypothesizes that the organization of the *Positive Action* curriculum might aid in helping students develop attachment to trusted

adults in their school community, which will in turn impact their mental health. Previous research also suggests that the organization of adolescent attachments (as related to prior and current attachment patterns) can be influenced by developmental changes as well as by what they encounter in their current environment (Allen & Land, 1999). While teacher attachment focuses on the relationship between the teacher and student, it is important to take extent and contextual factors into account in this discussion. For if a child is coming from a less secure background and possessing less secure experiences with attachment to trusted adults, relationships with teachers may become especially impactful and important in their development and well-being. A research-based, universal social and emotional learning curriculum that is delivered across the school year and becomes engrained in the school's culture may be the means to developing this, with the activities and experiences facilitated therein helping students learn that, in spite of their past experiences, they can count on trusted adults –which may result in improved mental health outcomes, as they learn to trust and be supported.

Attachment and Its Relationship to Mental Health Outcomes

Researchers have contended that attachment theory provides one framework for understanding how anxiety and depression may develop in young people (Brumariu & Kerns, 2010). A meta-analysis done by Brumariu & Kerns (2010) examined associations between parental attachment and interalizing symptoms in preadolescents/adolescents across twelve studies, as well as in nineteen studies for younger children. They discovered that attachment security was more related to anxiety and depression than it was to other global internalizing symptoms, with this relationship being strongest in preadolescence/adolescence. Another study examined the relationship between twelve-

year-old children's self-reported attachment style and their self-reported symptoms of anxiety and depression (Muris et al., 2000). The researchers found that students with insecure attachment to other children (in other words, avoidant or ambivalent attachment) had higher levels of anxiety and depression than those students who classified themselves as being more securely attached (Muris et al., 2000). In a different study, researchers were seeking to determine the relationship between adolescent peer and parental attachment and their outcomes of depression (Armsden et al., 1990). The researchers found less secure attachment was also associated with a greater magnitude of depression for children in the study (Armsden et al., 1990). Another study found that levels of support from the mother had the largest significant effect on adolescent levels of depression –in comparison to peer and teacher support (Colarossi & Eccles, 2003). For young children, closeness in teacher-child relationships has also been found to serve as a pathway for earlier insecure maternal attachment relationships to then have an impact on later internalizing behaviors, with insecure late elementary children being less likely to be close to their teachers and in turn demonstrate higher levels of internalizing behavior problems in early adolescence (O'Connor et al., 2012).

One study comprised of a sample of sixth, seventh, and eighth grade students found that levels of perceived caring from teachers were predictive of students' academic motivation and effort in their different classes, as well as in the pursuit of prosocial and social reponsibility goals –that is, how likely were they were to help other students in school (Wentzel, 1997). In other words, students who felt cared for by teachers were more motivated to learn and help their peers in school, as well. This draws again on the reciprocity described earlier per Bronfenbrenner's Ecological Human Development

Theory (1979), as it applies to social relationships: when a student feels cared for, they in turn are more likely to care for others. Such behaviors could have tremendous implications for a school, for with such increases of caringness, there might be a ripple effect of caringness throughout the student body; this would likely result in improved feelings of happiness and well-being for all. Furthermore, Wentzel (1997) found that these findings held even when accounting for students' feelings of psychological distress and beliefs about their personal control, as well as their motivation and academic performance in previous years (Wentzel, 1997).

The researcher discusses this caringness within the context of "pedagogical caring" – or in what it means to be a teacher who cares, drawing from Noddings' (1999) framework, that caring teachers "(a) model caring behavior to their students, (b) engage students in dialogues that lead to mutual understanding and perspective taking, and (c) expect as well as encourage students to do the best they can given their abilities" (Wentzel, 1997, p. 412). The *Positive Action* curriculum is one in which the scripted lessons direct teachers to model positive prosocial behaviors and SEL understandings, facilitate classroom conversations about the character development content and using real-life scenarios, and via the "The Thoughts-Actions-Feelings About Self Circle" circle, encourage students to reflect on how their thoughts lead to actions and subsequent feelings –with reflection on how this all ultimately feels in their actual lives. These are very much in line with Noddings' (1999) framework, suggesting that this curriculum develops a perception of teacher care through its activities, lessons, and overall theory of change. Wentzel (1997) also contends that perceptions of teachers as supportive and caring might be a proxy for students' psychological well-being. Furthermore, other

researchers have contended that adolescence is a time of transformation in attachment systems, "as the adolescent evolves from being a receiver of care from parents to being a potential caregiver" (Allen & Land, 1999, p. 319). In this caringness and subsequent feelings of well-being in being cared for, students may develop attachment to their teachers, and across the study body, they may experience decreases in depressive and anxiety symptoms, as a result of increased caringness for all.

Teacher emotional support has also been linked to adolescent mental health. One study found significant effects between levels of teacher support and students' outcomes of depression and self-esteem (Colarossi & Eccles, 2003). Another study comprised of a racially-diverse student sample evaluated the relationships between seventh grade students' perceptions of different climate-related dimensions with the existence of their negative behaviors and depressive symptoms later in eighth grade (Wang, 2009). The level of teacher emotional support was found to be the greatest predictor of negative behavior and depressive symptoms for the students (Wang, 2009). This research demonstrates the positive role that the perception of supportive, caring, teachers may have in mitigating negative mental health outcomes for vulnerable, at-risk youth who develop attachment to their teachers in school.

Summary and Conclusions

Positive Action is regarded as a positive youth development (PYD) SEL curriculum, targeting an array of student mental, emotional, and physical outcomes and with positive proven effects for many of these areas. It is also universal as it is delivered across the entire school, for all participants. Researchers have called for prevention programs to help diverse students develop SEL capabilities, but a pitfall in such efforts

can be their delivery; for example, if delivered for youth outside of school, as researchers

Pretty et al. (1996) describe for students: "they may choose not to participate if the

community system in which the program is embedded is perceived to be demanding,

inflexible, and unsupportive; that is lacking in sense of community" (Pretty et al., 1996,

p. 377). A universal SEL curriculum addresses this by making the learning part of daily

school life –to be accessed and taught to all students. When it is recursively taught each

year as is done within *Positive Action* schools, the program tenets and beliefs likely

become embedded in the school culture, as students are experiencing this each day and

each year. Therefore, *Positive Action* may help develop positive perceptions towards

school and increases in teacher attachment, as it is not a one-time intervention, but rather,

it becomes engrained in the students' school life. Developing such relational aspects of

school climate might then in turn have a positive impact on students' mental health

outcomes through their participation in such a curriculum. As adolescents have needs for

belongingness, inclusion, and secure attachments, a lack of these could manifest itself in

negative behaviors, emotions, and thought processes.

Per the theory of the TTI and Bronfenbrenner's Ecology of Human Development

theory, as students are developing across different health and behavioral-related areas,

they are also improving in their interactions with each other within their environment and

possibly building a more positive and connected school community. This should in turn

lead to decreases in negative mental health outcomes, as Baumeister's Need to Belong

theory maintains that as belongingness increases, negative affect and other indicators of

negative mental health will decrease, as well (Baumeister & Leary, 1995). Within this,

students' levels of teacher attachment might also be increasing, which per Attachment

theory, might be fulfilling needs that will also improve students' mental health outcomes (Bowlby, 1969). Longitudinal studies have found that factors relating to a healthy community such as sense of connection, low levels of conflict, and being in environments that encourage the expression of emotions can all serve as protective factors for youth against the development of behavioral and emotional disorders (Patel et al., 2007). Therefore, SEL interventions such as *Positive Action* that seek to build and promote these factors across a school may be the key to not only helping build positive school orientation for students, increasing teacher attachment, and improving other student outcomes within this, but also protect youth from negative mental health outcomes across this development, thus promoting an overall sense of well-being for all. If *all* schools were to implement such an intervention, this could lend itself to bettering the well-being of our overall nation and society.

The next chapter, Chapter Three, will detail the methods and analyses for the present study which seeks to explore these ideas further.

CHAPTER 3: METHODS

Introduction

The *Positive Action (PA)* social-emotional and character development program was implemented starting 2004-05 through 2009-2010 academic school years, across fourteen participating schools. These schools were recruited from sixty-eight high poverty, low-performing K-8 schools in the Chicago Public Schools (CPS) district and assigned randomly into seven matched pairs (Lewis et al., 2017). Across these schools, a cohort of students was followed, with data collection waves in third grade (Fall 2004 and Spring 2005), and again at six additional waves over six years, including the beginning and end of fourth grade (Fall 2005 and Spring 2006), end of fifth grade (Spring 2007), beginning and end of seventh grade (Fall 2008 and Spring 2009), and end of eighth grade (Spring 2010), as represented in Table 2 below. These uneven waves are due to gaps in research funding along the way (Lewis et al., 2017)

Table 2   Breakdown of Waves, Grades, and Time Periods of Data Collection

Wave	Grade	Time Period
1	3rd	Fall 2004
2	3rd	Spring 2005
3	4th	Fall 2005
4	4th	Spring 2006
5	5th	Spring 2007
6	7th	Fall 2008
7	7th	Spring 2009
8	8th	Spring 2010

Note. Information from Table 2 is from Lewis, K. M., DuBois, D. L., Ji, P., Day, J., Silverthorn, N., Bavarian, N., . . . Flay, B. R. (2017). Meeting the challenges of longitudinal cluster-based trials in schools: Lessons from the Chicago trial of positive action. Evaluation & the Health Professions, 40, 450-482. doi:10.1177/0163278716673688

Schools in the treatment condition implemented the *Positive Action* curriculum across the six-year time period, while the seven comparison schools conducted "business as usual," with program effects measured by the research team each year, at all sites (Lewis et al., 2017). As discussed by Lewis et al. (2017) on the participation of control school teachers,

> Teachers completed surveys about whether they used SECD-like activities in their classroom, including specifics on the target domain (e.g. peace promotion, character education), program name (if they used a program), strategies at the classroom and school level for promoting SECD, and attitudes toward promoting SECD (p. 16).

It was discovered that certain control schools reported SECD-like activities, but the extent to which this was done was unknown (Lewis et al., 2017).

Sample

This study is known as the Chicago trial of *Positive Action*. All students included in the Chicago trial were sampled from a wider population of the Chicago Public School (CPS) district. Prior to recruiting CPS schools, the research team established the criteria necessary for being included in this study. Each school needed 50-140 students per grade level. The student population also needed more than 50% from low-income backgrounds and less than 50% passing state achievement tests (Ji et al., 2008). Under this criteria, sixty-eight schools in the CPS district qualified for the study. Invitations were then extended to these schools, with 36 either attending an information session about the study or electing to have a research team member visit them at their school to explain such things in person. Of these 36 schools, 18 agreed to participate, with the understanding they would need to be successfully matched with another school demographically, and each would also need to accept their random designation (Ji et al., 2008).

After identifying schools meeting the inclusion criteria, the research team used the SAS statistics program to match the 18 schools into 9 pairs (Ji et al., 2008). This was informed by school-level demographic variables such as ethnicity, attendance rate, percent meeting and exceeding state achievement test criteria, free and reduced lunch, number of students, percent of parents involved, and information about crime rate in the school's neighborhood. The research team conducted independent t-tests on the different school-level variables and student demographics to determine if the schools were different from each other, and no significant differences were found (Ji et al, 2008).

Ultimately, only 7 of the pairs were included due to funding, for a total of 14 schools (Ji et al., 2008) –from which the sample of participants in this study was drawn.

The total number of students in the sample, across all eight waves of data collection, was 1,170. Demographically, these students were 53% female, 48% African American, 27% Latino/Hispanic, 7% White and 12% other (e.g. Asian, Native American, and other ethnicities) (Lewis et al., 2017). In the present sample, only 130 (or 21%) of the original 624 Grade 3 cohort remained in the study at the end of Grade 8 (Lewis et al., 2017).

Researchers used a cluster-focused intent-to-treat analysis, which:

…acknowledges the focus on schools and follows all schools randomized to condition to trial endpoint, regardless of how well the intervention is implemented (or not) in treatment schools. It also requires collecting and analyzing data from all students who are in the appropriate grade cohort in the schools at the time of each assessment (Lewis et al., 2016, p. 467).

The researchers assessed students who joined the study after it had started (called "joiners") but did not follow students who stopped attending study schools (called "leavers"). Parent consent and student assent were obtained prior to participation when students were in third grade. Once consent was given, it lasted through the length of the study –except for reconsent at Wave 6, when the study was granted additional funding (Lewis et al., 2017). At this stage, consent rates were lower; at the collection of baseline data at Wave 1, parent consent was 79%, while at Waves 6-8 it was approximately 58-64% (Lewis et al., 2017).

The Present Study

The current study will conduct a secondary data analysis on the data set from the Chicago Trial of *Positive Action,* examining how student perception of positive school orientation and teacher attachment might have influenced students' symptoms of depression and anxiety. In this study, positive school orientation and teacher attachment are used to operationalize aspects of students' perception of relational school climate. Mental health outcomes will be operationalized by depressive and anxiety symptoms.

The present study will examine results for the original cohort plus all "joiners" who were added to the schools and were present at Waves 6, 7, and 8 to determine changes that may have occurred over time. This research design was used to examine the impacts that school climate can have on students' mental health who have joined an SEL-focused school, alongside those who had been a part of an SEL curriculum in previous years. Previous analyses have also not demonstrated any significant differences in program effects by patterns of mobility (Lewis et al., 2017). This suggests that "joiners" can experience the positive effects of *Positive Action,* in spite of this shorter duration of attending *Positive Action* schools and their participation in fewer *Positive Action* lessons and activities.

As previously discussed, there were gaps in research funding during the study, and therefore data were not available from students' sixth grade year nor at the beginning of their eighth grade year. Therefore, the results from Waves 6 and 7 represent the students' scores at the beginning and end of their seventh grade year respectively, and Wave 8 represents their scores at the end of their eighth grade year. Table 3 outlines the

mobility rates of students by study condition for Waves 6, 7, and 8. The "total students

overall" row represents the total sample at each wave in the present study.

Table 3   Mobility of Students by Study Condition for Waves 6, 7, and 8

Wave	6	7	8
Year and Season	Fall 2008	Spring 2009	Spring 2010
Grade	7	7	8
Treatment			
Total Number of Participating Students	104	187	195
Number of Joiners	0	83	50
Number of Leavers	158	0	42
Control			
Total Number of Participating	92	92	168
Students	0	0	27
Number of Joiners	161	1	31
Number of Leavers			
Total Numbers			
Total Students	**196**	**359**	**363**
Overall	0	164	77
Number of Joiners	319	1	73
Number of Leavers			

Note. Table 3 was adapted from Lewis, K. M., DuBois, D. L., Ji, P., Day, J., Silverthorn, N., Bavarian, N., . . . Flay, B. R. (2017). Meeting the challenges of longitudinal cluster-based trials in schools: Lessons from the Chicago trial of positive action. Evaluation & the Health Professions, 40, 450-482. doi:10.1177/0163278716673688

Research Design and Approach

This longitudinal study employed a repeated measures longitudinal match-paired, cluster-randomized design, with repeated measures given over time. Randomly-matching fourteen schools and following them for multiple years allowed the research team to study a cohort of students from third through eighth grade across *Positive Action (PA)* schools as well as non-*PA* schools, as well as any students who had joined these schools at later dates.

This study seeks to advance current understanding of how social-emotional learning and social, emotional, and character development programs achieve their effects, over time. Such programs encompass the skills youth need to handle themselves, their relationships, and their work (Zins et al., 2004) –thus preparing them for success as adults. This is achieved in such programs by teaching students to be good communicators, cooperative team members, effective leaders, and caring community members (Ji et al., 2013). These skills are taught in conjunction with academic content in a school, thus attending to the education of the whole child and addressing cognitive as well as noncognitive abilities. This current study seeks to help further explain the mechanisms through which *Positive Action* and similar SEL/SECD program efforts achieve their effects on student outcomes.

Measures

While this study relies on student self-reported data only, student, teacher, and parent/primary caregiver questionnaires were given across multiple waves of data collection. According to Lewis et al. (2016), "Measures were selected by a team of researchers from the sites participating in the Social and Character Development

Research consortium trial as well as the members of the Consortium. Researchers and members attempted to identify measures of high reliability and validity in previous research with diverse samples of elementary school students" (p. 454). All measures were compiled into a larger test that included all of the response items from these different measures. According to authors Ji et al. (2013) on the diverse measures used across this study,

> We altered the original response scales of several measures to fit this format. It was viewed as important to do so, however, both for ensuring the measures were suitable for use with younger students and for minimizing potential confusion arising from having different response scale across measures. In several instances, briefer versions of measures also were used to maintain a reasonable length for the overall survey battery. Unless otherwise noted, the briefer versions of measures were derived on the basis of selecting items judged appropriate for younger students as well as the results of reliability analyses conducted using data from the pilot sample referred to above. All measures were scored by averaging responses across items, with items scored such that higher scores indicated greater levels of the construct (p. 126).

On the questionnaire, students were also given the instructions: "You give the answer that is MOST TRUE FOR YOU. Please remember that there are no right or wrong answers– we just want your honest opinions" (Lewis et al., 2017). Research staff gave the questionnaires to students to help assure confidentiality for students as they completed them (Lewis et al., 2017, p.11).

Seventy-four total self-reported student, teacher, and parent scales were tested for baseline equivalency, and only 8 showed significant differences: 4 favored control students, while 4 favored PA students (Lewis et al., 2016) According to authors Lewis et al. (2016), "The low number of statistically significant differences and their varying directions suggest that the matching and randomization were successful and that threats to internal validity were minimized" (p. 462).

The present study relies on data from three of these student self-reported measures to measure the four constructs of interest in this study. These are described in greater detail in the sections below.

Positive School Orientation

The construct of positive school orientation in the present study was established by Kaminski et al. (2009) and developed in a multi-site study done by the Social and Character Development (SACD) research consortium, designed to evaluate the effectiveness of seven elementary-based SEL programs (Kaminski et al., 2009). To measure levels of school connectedness, fourteen statements from Roberts et al.'s (1995) Sense of School Community Scale were selected. In its full form, this is a 38-item instrument seeking to measure students' perception of their school community, and items relating to the respect, caring, and support within students' schools were drawn for the multi-site evaluation (Kaminski et al., 2009). To measure feelings of safety at school, the SACD Consortium designed a new measure, as there were no readily available or validated appropriate measures for the study (Kaminski et al., 2009; Social and Character Development Research Consortium, 2010). The research team then conducted rigorous exploratory and confirmatory factor analyses and an in-depth examination of the different

scales' psychometric properties to create more reliable and valid outcome measures –

ultimately leading to the development of the positive school orientation construct

(Kaminski et al., 2009). Positive school orientation is comprised of nine positively

worded items from the Sense of School Community Scale (Roberts et al., 1995) that

relate to school connectedness and one item from the Feelings of Safety at School Scale

(Kaminski et al., 2009). The stem for all of these items were: "Do you agree with the

following statements?" Students responded to each these items on a four point scale,

with response options being: "NO!, no, yes, or YES!"

These items include:

- Students at this school really care about each other.

- Students at this school are willing to go out of their way to help someone.

- When I'm having a problem, some other student will help me.

- Teachers and students treat each other with respect in this school.

- People care about each other in this school.

- Students at this school work together to solve problems.

- Students in this school treat each other with respect.

- My school is like a family.

- Students feel safe at this school.

- Students in this school help each other even if they are not friends.

Teacher Attachment

This measure was designed to assess students' sense of attachment towards their

teachers in school and was developed for the present research. It draws items from three

existing measures from Cook, Greenberg, and Kusche (1995), Goodenow (1993), and

Murray and Greenberg (2001). Sixteen total items were selected from these measures and adapted based on age appropriateness, with a reliability analysis conducted on initial pilot data. These sixteen items encompass teacher attachment, as well as attachment to school, parents, and friends –for a total of four items per subconstruct. Teacher attachment is the construct of interest in this study. The stem for all of these items were: "Do you agree with the following statements?" Students responded to each these items on a four-point scale, with response options being: "NO!, no, yes, or YES!"

The items measuring the teacher attachment construct include:

- I like my teachers.

- I get along with my teachers.

- Most of my teachers treat me fairly.

- My teachers are nice to me.

Depression and Anxiety

The BASC Depression and Anxiety Scale was developed by Reynolds and Kamphaus (2002). The present research utilizes twelve items that were selected from this 26-item scale; this selection was based on an exploratory factor analysis from a Social and Character Development study at New York University. The measure yields separate scores for depression and anxiety, to include the following items listed below.

Depression:

- Nothing ever goes right for me.

- Nothing is fun anymore.

- Nothing about me is right.

- I feel depressed.

- No one understands me.

- I feel like my life is getting worse and worse.

  - Anxiety:

- I often worry about something bad happening to me.

- I worry but I don't know why.

- I worry when I go to bed at night.

- I worry about what is going to happen.

- I get nervous when things do not go the right way.

- Little things bother me.

Students responded to these on a two-point true or false scale, with a check box underneath for students to identify if they wanted to talk to a counselor.

Data Analysis

To answer the research questions of the present study, a moderated mediational analysis was conducted using SPSS v27 software. First, a reliability analysis was conducted for each measure (positive school orientation, teacher attachment, depressive symptoms, and anxiety symptoms) to determine its level of internal consistency as measured by its Cronbach's alpha score.

To investigate Research Questions 1 and 2, this study first examined group differences for positive school orientation and teacher attachment. This was done using chi-square and ANOVA analyses to see what differences exist for these constructs, depending upon students' gender (boy or girl) and ethnicity/race: Black/African American, Latino/Hispanic, or other; Black/African American or other; and Latino/Hispanic or other, respectively. Examining ethnicity/race in this way does present

limitations, in that student ethnicity/race covaried with each school, as evidenced by

aggregate data, in that "…three pairs of schools were >99% Black/African American, two

pairs were 75% Latino/Hispanic, and two pairs were mixed (50% Latino/Hispanic, 31%

Black/African American, 9% White, and 9% Asian) (Lewis et al., 2017, p. 20). This

means that results reflect the overall perceptions of these groups in schools that might

have wide representation of their particular ethnic/racial group. Results therefore revealed

students' experiences across all of the schools, taken together. The present study also

examined differences in "joiners'" perceptions of these aspects of relational school

climate at the later waves, as well, to ensure there were no differences according to

mobility patterns.

In the present study, the overarching goal was to determine how two important

aspects of relational school climate might have mediated different groups of students'

depressive and anxiety symptoms, within an SEL curriculum. This was ultimately

accomplished by running a series of moderated mediation and mediation models to

answer Research Questions 3-10, utilizing the PROCESS command in SPSS. PROCESS

is "…a computational tool for observed variable path analysis-based moderation and

mediation analysis as well as their integration as conditional process analysis" (Hayes,

2017, p. 551). It is available as a free download at

http://processmacro.org/download.html.

In total, Hayes (2017) identifies 92 Process Models with diagrams to demonstrate

different potential effects for mediation, moderation, and/or conditional process analyses.

According to Hayes (2017), "Conditional process analysis is used when one's research

goal is to describe the conditional nature of the mechanism or mechanisms by which a

variable transmits its effect on another and testing hypotheses about such contingent effects" (p. 10), and moderated mediation is one example of a form this can take. To fully answer each of the remaining research questions, the present study utilized Process Models 7, 8, 14, and 15 from Hayes' (2017) text for the measures that had significance in differences of means for the different student groups being examined.

Figure 3 illustrates these four different models and includes variables X, Y, W, and M, as well as the pathways of a path, b path, and c-prime path. X represents the independent variable, Y represents the dependent variable, M represents the mediator, and W represents the moderator. The specific variables for Research Question 3 are also included in Figure 3 to help illustrate the general modeling that will be used for the research questions that remain.

Edwards and Lambert (2007) also identified models that combine mediation and moderation and align with many of those presented by Hayes (2017). Process Model 7 is a first-stage moderation model (Edwards & Lambert, 2007), in which W is moderating the effect of the independent variable X on the mediator of M, noted by path a. Process Model 8 combines both first-stage and direct effect moderation (Edwards & Lambert, 2007), in which W moderates the effect of X on M in both path a and the c-prime path of X on Y. Process Model 14 is a second-stage moderation model (Edwards & Lambert, 2007), in which W is moderating the effect of M on the dependent variable of Y, in path b. Process Model 15 combines both second-stage and direct effect moderation (Edwards & Lambert, 2007), in which W moderates both the effect of M on Y in path b, as well as the direct effect of X on Y in the c-prime path.
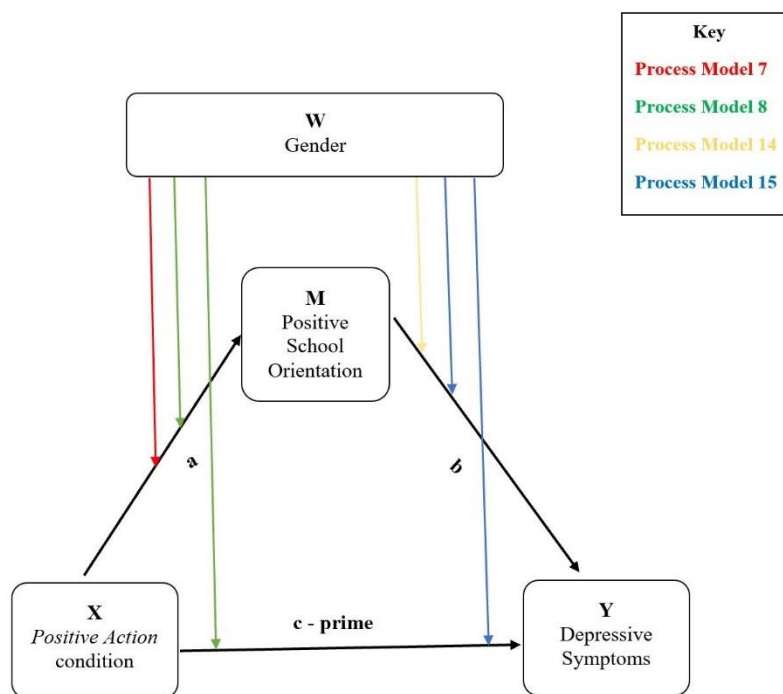
Figure 3   **Color-Coded Moderated Meditation Process Models for Research Question 3**

These four models were run for each of the research questions that had group differences in their perceptions of the school climate variables. When no group differences were found, the research questions were answered utilizing Process Model 4, which is a simple mediation model and does not have the moderation component.

To investigate the appropriateness of a given sample size, the PROCESS macro can use bootstrapping methods to test the stability of models and determine confidence intervals in a moderated mediational model. The primary goal of bootstrapping is to determine if the sample size in a study accurately represents the larger population from which it is drawn. According to the SPSS guide, this feature is used to "Estimate the sampling distribution of an estimator by resampling with replacement from the original sample" (IBM, 2020). This feature also allows the user to estimate standard errors and

confidence intervals to test the stability of analytical models and procedures (IBM, 2020).

In the present study, the bootstrapped samples were set to 10,000.

Summary

In summary, the present study is a secondary data analysis on data from the

Chicago Trial of *Positive Action*. The *Positive Action (PA)* social-emotional and character

development program was implemented in the 2004-05 through 2009-2010 academic

school years, across fourteen participating schools in the Chicago Public Schools (CPS)

district, assigned randomly into seven matched pairs (Lewis et al., 2017). Across these

schools, a cohort of students was followed, with data collection in third grade (Fall 2004

and Spring 2005), and again at six additional waves over 6 years, including the beginning

and end of fourth grade (Fall 2005 and Spring 2006), end of fifth grade (Spring 2007),

beginning and end of seventh grade (Fall 2008 and Spring 2009), and end of eighth grade

(Spring 2010) (Lewis et al., 2017). The present study examines results from students at

Wave 6, Wave 7, and Wave 8 –or in other words, at the beginning of students' seventh

grade year, end of seventh grade year, and end of eighth grade year. The sample of the

present study will include "joiners" as well as students who have attended *Positive Action*

schools in previous years.

The primary purpose of this study was to examine the moderated mediational

influence of relational school climate on students' anxiety and depressive symptoms,

across *Positive Action* and non-*Positive Action* middle schools. This utilized Process

Models 7, 8, 14, and 15; when there were no group differences found, Process Model 4

was utilized. All of this was done to determine the influence that school climate might

have on different groups of middle school students' mental health outcomes. The next

section, Chapter 4, will discuss the results from this statistical investigation.

CHAPTER 4: RESULTS

Introduction

The overarching purpose of this study was to investigate the influence of positive school orientation and teacher attachment on depressive and anxiety symptoms for middle school students, within a social and emotional learning curriculum called *Positive Action.* This chapter outlines the steps taken in SPSS to answer the present study's research questions, as well as the results associated with each research question.

After the data were entered in SPSS, the first step was to address missingness in the data set. Using the "Transform" menu, and "Recode into Same Variables," each missing case was set to 9999. The response items that comprised each measure were then transformed into individual scale variables for each wave, utilizing the "Transform" and "Compute Variable" function in SPSS. This allowed the researcher to compute scale variables for positive school orientation, teacher attachment, and depressive and anxiety symptoms at each wave within the dataset.

Next, the researcher identified significant outliers in the data set. This was done at this stage because previous research found that outliers can inflate the Cronbach's alpha when determining scale reliability (Liu et al., 2010). Outliers were identified by creating Z-scores for each case across the four different measures and across all three waves of data, followed by visually inspecting each case. Any Z-scores less than -2.68 and greater than 2.68 were trimmed from the data set.

Reliability Analyses

The next step was to check the reliability for each measure of the present study. For Waves 6, 7, and 8, reliability analyses were conducted for the items comprising positive school orientation, teacher attachment, depression, and anxiety. The results from these analyses are represented in the table below:

Table 4   **Reliability Analyses for Measures, by Wave**

Scale Name and Wave	Cronbach's Alpha
Teacher Attachment – Wave 6	.869
Teacher Attachment – Wave 7	.870
Teacher Attachment – Wave 8	.836
Positive School Orientation – Wave 6	.862
Positive School Orientation – Wave 7	.869
Positive School Orientation – Wave 8	.881
Depression – Wave 6	.799
Depression – Wave 7	.778
Depression – Wave 8	.782
Anxiety – Wave 6	.807
Anxiety – Wave 7	.744
Anxiety – Wave 8	.793

The scales all had an acceptable level of internal consistency, based on the Cronbach's Alpha scores that were above .70. According to research examining key findings regarding the use of Cronbach's Alpha in science education studies, "A value of .70 or greater is widely considered desirable…The examples reviewed here show that alpha values of .70 or above can be achieved even when an instrument is exploring

multiple constructs or testing for several different aspects of knowledge of

understanding" (Taber, 2018).

Univariate Statistics for Scales

Univariate statistics for each of the scales are outlined in the tables below.

Table 5 **Univariate Statistics on Teacher Attachment, by Wave**

Wave	Number of Items	N	Mean	Standard Deviation
6	4	186	3.10	0.65
7	4	313	3.07	0.67
8	4	320	3.10	0.58

Table 6 **Univariate Statistics on Positive School Orientation, by Wave**

Wave	Number of Items	N	Mean	Standard Deviation
6	10	189	3.10	0.65
7	10	326	3.07	0.67
8	10	317	3.10	0.58

Table 7 **Univariate Statistics on Depression, by Wave**

Wave	Number of Items	N	Mean	Standard Deviation
6	6	184	1.2	0.26
7	6	327	1.23	0.29
8	6	324	1.18	0.25

Table 8   **Univariate Statistics on Anxiety, by Wave**

Wave	Number of Items	N	Mean	Standard Deviation
6	6	192	1.5	0.35
7	6	327	1.44	0.32
8	6	331	1.43	0.34

The next step was to examine what within-group differences existed for the relational school climate measures.

Research Questions 1 and 2

To what extent do individual characteristics such as gender and ethnicity/race influence students' positive school orientation?

To what extent do individual characteristics such as gender and ethnicity/race influence students' levels of teacher attachment?

The present study first sought to answer Research Questions 1 and 2 by examining group differences for the two relational school climate variables: positive school orientation and teacher attachment. Gender was examined first and was treated as a binary variable, coded as "1" for boy and "0" for girl. A chi-square analysis was used for gender across Waves 6, 7, and 8 to determine which differences might exist for these two categories. The assumptions for chi-square were met, which include having independence of observations, having two variables measured at an ordinal or nominal level, as well as having two variables consisting of two or more categorical, independent groups. Results from the chi-square analysis are outlined below:

Table 9   **Chi-Square Analyses for Gender Differences**

Wave	Scale	Percent Female	Percent Male	Pearson Chi-Square Value	Asymptotic Significance
6	Teacher Attachment	58.4%	41.6%	6.504	0.838
6	Positive School Orientation	59%	41%	27.994	0.359
7	Teacher Attachment	54.8%	45.2%	8.499	0.668
7	Positive School Orientation	53.9%	46.1%	19.276	0.784
8	Teacher Attachment	54.1%	45.9%	8.557	0.663
8	Positive School Orientation	53.5%	46.5%	31.381	0.300

These findings revealed no significant differences in how boys and girls perceived these two aspects of their school's climate. This is in line with previous research demonstrating limited and inconsistent gender differences across student outcomes in the Chicago trial of *Positive Action* (Lewis et al., 2017).

On their questionnaires, students also noted their ethnicity/race, choosing from six options: "White," "Black/African American," "Latino/Hispanic," "Native American," "Asian," or "Other." Many students marked multiple choices on the form, highlighting the diversity of the population and the difficulty of certain students by just one single ethnicity/race. Therefore, to honor and thoroughly examine this diversity in ethnicity/race, the students' ethnicity/race data was examined in three different ways and analyzed using different models.

First, a one-way ANOVA analysis was conducted on students' ethnicity/race differences according to three categories: "Black/African American," "Latino/Hispanic,"

and "Other." For this analysis, students were coded with a "1" if they marked *only*

"Black/African American" for their ethnicity/race, a "2" if they marked *only*

"Latino/Hispanic" for their ethnicity/race, and if students had noted any combination of

ethnicities/races and/or "Native American," "Asian," "White," or "Other," they were

treated as "Other" and coded with a "3."

Table 10 details the sample sizes of these three groups, across all three waves of

data collection.

Table 10   **Sample Sizes of Three Ethnic/Racial Groups, Across Waves 6, 7, and 8**

Wave	Only Black/African American: N	Only Black/African American: Percent:	Only Hispanic/Latino: N	Only Hispanic/Latino: Percent	Other – Any Combination of Other Races/Ethnicities: N	Other – Any Combination of Other Races/Ethnicities: Percent:
6	89	45.6%	55	28.2%	51	26.2%
7	164	48.1%	93	27.3%	84	24.6%
8	156	46.8%	106	31.8%	71	21.3%

The assumptions for a one-way ANOVA were first checked, including having an

independent variable that was categorical, independence of observations, and no

significant outliers. A standardized residual was created for each test and a histogram

generated to view the distribution of scores. On a visual inspection, each example

revealed a normal distribution resembling a bell curve, except for teacher attachment at

Wave 8, which was skewed to the right. The following table shows the significance levels

for the Levine, Welch, and Brown-Forsythe scores, in testing for this assumption. This

revealed that homogeneity of variance had been violated for several of these.

Table 11   Homogeneity of Variance for Three Ethnicity/Racial Groups - Only Black/African American, Only Latino/Hispanic, and Other (Any Combination of Other Ethnicities/Races) and Relational School Climate Variables

Wave	Scale Name	Levine	Welch	Brown-Forsythe
6	Teacher Attachment	0.029	0.114	0.074
6	Positive School Orientation	0.436	0.14	0.020
7	Teacher Attachment	0.003	0.353	0.416
7	Positive School Orientation	0.800	0.000	0.000
8	Teacher Attachment	0.895	0.946	0.946
8	Positive School Orientation	0.881	0.003	0.003

The results from this One-Way ANOVA are outlined in the table below, as well

as the descriptive statistics for each racial group across all three waves of data collection

and for each scale:

Table 12   One-Way ANOVA Analyses for Ethnicity/Race Differences – Three Groups: Only Black/African American, Only Latino/Hispanic, and Other (Any Combination of Other Ethnicities)

Wave	Scale Name	F-Value	Asymptotic Significance	Only Black/African American: Mean	Only Black/African American: Standard Deviation	Only Latino/Hispanic: Mean	Only Latino/Hispanic: Standard Deviation	All Other Ethnicities/Races: Mean	All Other Ethnicities/Races: Standard Deviation
6	Teacher Attachment	2.273	0.106	3.0	0.77	3.21	0.503	3.2	0.56
6	Positive School Orientation	4.097	0.018	2.1	0.60	2.4	0.56	2.24	0.66
7	Teacher Attachment	0.788	0.421	3.02	0.704	3.14	0.54	3.1	0.751
7	Positive School Orientation	8.924	0.000	2.2	0.61	2.5	0.56	2.44	0.6
8	Teacher Attachment	0.56	0.946	3.1	0.57	3.1	0.6	3.1	0.6
8	Positive School Orientation	6.061	0.003	2.4	0.59	2.64	0.58	2.5	0.59

These findings revealed no significant differences in perceptions of teacher attachment for the three different groups of ethnicities/races across these different waves, but there was evidence of significant differences in means for positive school orientation across all three waves.

Because a one-way ANOVA analysis is traditionally used for variables that are continuous, the data failed to meet this assumption, and furthermore, it was not normally distributed for teacher attachment and had variances that were different. Therefore, a second analysis was conducted for the three groups to ensure these findings of group differences were accurate; this next step utilized a Kruskal-Wallis Test, which is a nonparametric test. The scores' distributions had a similar shape for all groups, as determined by examining the boxplots for each. Analyses using the Kruskal-Wallis Test were therefore repeated for the different relational climate measures, in relation to the three ethnicity/racial groupings. The results from this are outlined below:

Table 13   Kruskal-Wallis Test for Ethnicity/Race Differences – Three Groups: Only Black/African American, Only Latino/Hispanic, and Other (Any Combination of Other Ethnicities)

Wave	Scale Name	Kruskal-Wallis H	Asymptotic Significance
6	Teacher Attachment	2.038	0.361
6	Positive School Orientation	8.450	0.015
7	Teacher Attachment	0.899	0.638
7	Positive School Orientation	17.141	0.000
8	Teacher Attachment	0.861	0.650
8	Positive School Orientation	12.640	0.002

Findings from this test revealed significance for positive school orientation and at the same waves of data collection as the one-way ANOVA had determined, with no significance found for teacher attachment.

To examine the ethnicity/race data in a second way that acknowledged the diverse ethnicities/races in this sample, ethnicity/race differences were also analyzed according to "Black/African American" and "Other" for each of the two relational school climate measures, utilizing a chi-square analysis. This time, if students had noted "Black/African American" for *at least one* of their ethnicities/races, they were treated as "Black/African American" and coded with a "1"; students marking any combination of the other ethnicities/races were treated as "Other" and coded with a "2." The table below outlines

the number of students in each of these two groups, across all three waves of data

collection.

Table 14   Sample Sizes of Two Ethnic/Racial Groups (Black/African American and Not Black/African American) Across Waves 6, 7, and 8

Wave	N: Black/African American	Percent: Black/African American	N: Not Black/African American	Percent: Not Black/African American
6	105	53.8%	90	46.2%
7	188	55.1%	153	44.9%
8	182	54.7%	151	45.3%

This data also met the assumptions for a chi-square test. The results from this are

outlined in the table below:

Table 15   Chi-Square Analyses for Ethnicity/Race Differences – Black/African American and Not Black/African American

Wave	Scale Name	Pearson Chi-Square Value	Asymptotic Significance
6	Teacher Attachment	10.702	0.469
6	Positive School Orientation	43.060	0.019
7	Teacher Attachment	11.267	0.421
7	Positive School Orientation	35.521	0.188
8	Teacher Attachment	8.476	0.670
8	Positive School Orientation	35.148	0.166

These findings revealed significant differences in perceptions of positive school orientation for these two groups of ethnicities/races at Wave 6 only, with no significant differences across any of the waves for teacher attachment.

Because these schools also had significant Latino/Hispanic representation, the same chi-square procedure was conducted for Latino/Hispanic students, as well. If students had noted "Latino/Hispanic" as *at least one* of their ethnicities/races, they were treated as "Latino/Hispanic" and were coded with a "1"; students marking any combination of the other ethnicities/races were treated as "Other" and coded with a "2." The table below outlines the number of students in each of these two groups, across all three waves of data collection.

Table 16   Sample Sizes of Two Ethnic/Racial Groups (Latino/Hispanic and Not Latino/Hispanic) Across Waves 6, 7, and 8

Wave	N: Latino/Hispanic	Percent: Latino/Hispanic	N: Not Latino/Hispanic	Percent: Not Latino/Hispanic
6	65	33.3%	130	66.7%
7	111	32.6%	230	67.4%
8	126	37.8%	207	62.2%

The results from the chi-square analysis are outlined in the table below:

Table 17   Chi-Square Analyses for Ethnicity/Race Differences – Latino/Hispanic and Not Latino/Hispanic

Wave	Scale Name	Pearson Chi-Square Value	Asymptotic Significance
6	Teacher Attachment	9.848	0.544
6	Positive School Orientation	26.522	0.435
7	Teacher Attachment	15.199	0.174
7	Positive School Orientation	36.845	0.150
8	Teacher Attachment	5.394	0.911
8	Positive School Orientation	39.172	0.078

The findings revealed that there were no significant differences for Latino/Hispanic students' perception of the two relational school climate variables when the groups were examined in this way.

Although previous research has demonstrated similar program effects for "joiners" in comparison to students who had been attending *Positive Action* schools in previous years, the data were analyzed for students who joined at Waves 7 and 8 to confirm no difference in means for the two relational school climate variables. Wave 6 had no "joiners," which is why "N/A" is used as a placeholder in the tables below.

Table 18   **Chi-Square Analyses for "Joiners" at Wave 7**

Wave	Scale	Pearson Chi-Square Value	Asymptotic Significance
6	Teacher Attachment	N/A	N/A
6	Positive School Orientation	N/A	N/A
7	Teacher Attachment	11.050	0.439
7	Positive School Orientation	27.238	0.559
8	Teacher Attachment	12.184	0.350
8	Positive School Orientation	22.093	0.777

Table 19   **Chi-Square Analyses for "Joiners" at Wave 8**

Wave	Scale	Pearson Chi-Square Value	Asymptotic Significance
6	Teacher Attachment	N/A	N/A
6	Positive School Orientation	N/A	N/A
7	Teacher Attachment	N/A	N/A
7	Positive School Orientation	N/A	N/A
8	Teacher Attachment	13.802	0.314
8	Positive School Orientation	33.766	0.209

Findings demonstrated no significant differences in means for these different groups of students –thus revealing that "joiners" did not have significant differences in relational school climate perceptions, compared to students who had attended *Positive Action* schools in previous years.

Research Question 3

To what extent does positive school orientation (for students grouped by gender) serve as a mediator for condition effects upon students' depressive symptoms?

Because no significant gender differences were found for positive school orientation across Waves 6, 7, and 8, Research Question 3 utilized a simple mediation model to determine the influence that these constructs had on students' depressive symptoms, when examined as a whole group at each wave. Hayes identifies a simple mediation model as Process Model 4, which is depicted for reference in the figure below.
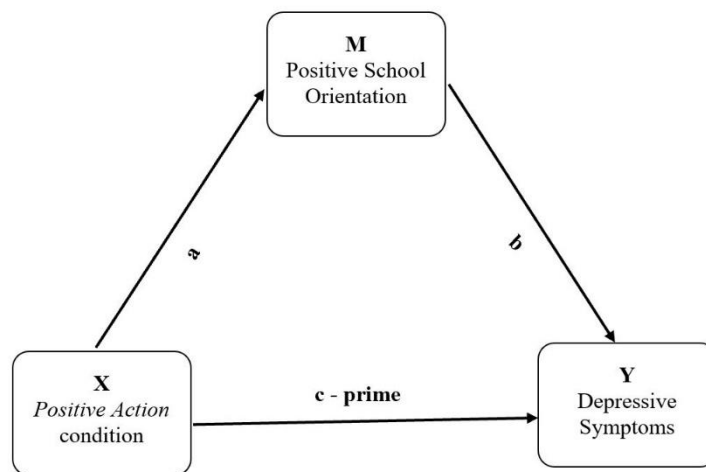
Figure 4   **Process Model 4 for Research Question 3**

Before conducting these analyses, the assumptions for a linear regression were checked for all stages of the research questions, as these are required for mediation and moderated mediation analyses. The assumption of independence of observations was checked. At each stage, the Durbin-Watson statistic fell between 0 and 4, falling at or close to a 2 in each case. Scatterplots of the Normal P-P Plot of Regression Standardized

Residuals were generated for each path, revealing linear relationships between variables. There was some evidence of homoscedasticity across these as well, as determined by a visual inspection of the plots of each dependent variable against regression standardized residuals; these plots were not all completely homoscedastic. To correct for this, a heteroscedasticity-consistent inference of HC3 (Davidson-MacKinnon) was applied to all models to ensure that all heteroscedasticity was accounted for. On this topic, Hayes and Cai (2007) cite work by Long and Ervin (2000), stating that they "…recommended that HC3 always be used because it can keep the test size at the nominal level regardless of the presence or absence of heteroskedasticity (and there is only a slight loss of power associated with HC3 when the errors are indeed homoskedastic)" (as cited in Hayes & Cai, 2007, p. 713). Taking this step increased the confidence that each model did in fact meet the assumption of homoscedasticity. Multicollinearity was assessed by examining the coefficients table. For all research questions, the Tolerance values were greater than 0.1 and the VIF values were at or just above 1, meaning that the data met the assumption for no multicollinearity between variables. These same assumptions were tested for paths of the remaining research questions, as well.

The data did not meet the assumption of normal distribution. This was determined by visual inspection of distributions and examining the Shapiro-Wilk's scores, which revealed significance for different measures. However, the mediation models utilized bootstrapping samples set to 10,000, and according to Preacher and Hayes (2008), "Bootstrapping, a nonparametric resampling procedure, is an additional method advocated for testing mediation that does not impose the assumption of normality of the

sampling distribution" (p. 880). Therefore, with bootstrapping applied, it was deemed

appropriate to move forward with answering Research Questions 3-10.

When creating each model in SPSS, "Mean centering" for "Only continuous

variables that define products" was selected in the dialogue box, and for probing the

interaction, "-1 standard deviation below the mean and +1 standard deviation above the

mean" were also selected. The same process was followed for all of the research

questions requiring a mediation model, as outlined in the findings in the tables and

sections of these results.

Findings from the analyses for Research Question 3 are outlined in the table

below.

Table 20   Mediational Influence of Positive School Orientation on Depressive Symptoms Across Waves 6, 7, and 8

Wave	N	BootLLCI	BootULCI
6	177	-0.0194	0.0040
7	306	-0.0111	0.0034
8	306	-0.0307	-0.0035

In these analyses, no evidence of mediation for positive school orientation on

depressive symptoms was present at Waves 6 or 7. A significant effect was present at

Wave 8, as the bootstrapping lower limit confidence interval was -.0307, and the

bootstrapping upper limit confidence interval was -.0035. If "0" falls outside of the lower

and upper bound of these confidence intervals, it can be concluded that there is evidence

of mediation. If "0" falls between the lower and upper bound, there is no evidence of

mediation. Because "0" does not fall between -.0307 and -.0035, there was evidence at

Wave 8. This means that positive school orientation did significantly mediate students'

depressive symptoms, at the eighth wave of data collection –or the end of students'

eighth grade year.

Table 21   Wave 8 Significant Mediational Effect: Examining X (*Positive Action* Condition) on M (Positive School Orientation) and M (Positive School Orientation) on Y (Depressive Symptoms)

Model Name	Coefficient	P-Value	LLCI	ULCI
PA Condition →				
Positive School Orientation	0.2089	0.0024	0.0747	0.3432
Positive School Orientation →	-0.0403	0.0019	-0.1171	-0.0267
Depressive Symptoms				

This reveals that the *Positive Action* condition had a significant positive effect on

positive school orientation, and positive school orientation had a significant effect on

decreasing students' depressive symptom outcomes.

Research Question 4

To what extent does positive school orientation (for students grouped by

ethnicity/race) serve as a mediator for condition effects upon students' depressive

symptoms?

At Wave 6 only, a significant difference in positive school orientation perceptions

for students grouped by two ethnicity/race categories of "Black/African American" or

"Not Black/African American" was found (when this was coded for students having

marked "Black/African American" for *at least one* of their ethnicities/races and students

marking any combination of the other ethnicities/races being treated as "Not

Black/African American"). Therefore, a moderated mediation model was next conducted

for this research question, examining ethnicity/race in this way for these two groups of

students. This model utilized Process Models 7, 8, 14, and 15 to determine at what stage

the interaction might exist, represented in the figure below:
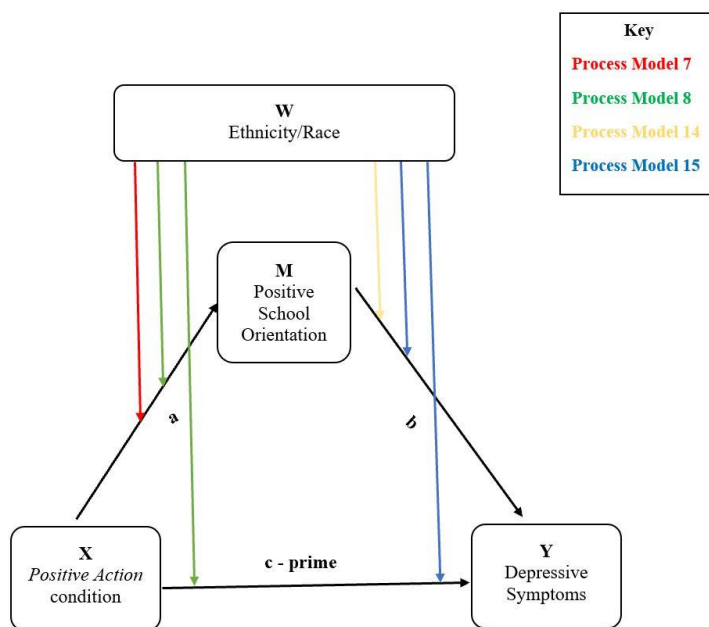
Figure 5   **Wave 6 Moderated Mediation Model**

Findings for these specific analyses for Research Question 4 are outlined in the

table below.

Table 22   Wave 6 Moderated Mediational Influence of Positive School Orientation on Depressive Symptoms, by Ethnicity/Race Coded as Black/African American and Not Black/African American

Wave	N	Process Model	BootLLCI	BootULCI
6	173	7	-0.0621	0.0036
6	173	8	-0.0727	0.0044
6	173	14	-0.0412	0.0111
6	173	15	-0.0425	0.0117

No significant effects were found for the moderated mediational influence of positive school orientation on depressive symptoms at Wave 6 for students grouped by ethnicity/race in these two categories of "Black/African American" and "Not Black/African American." This is because the BootLLCI and BootULCI were not both positive and/or negative, for any of the process models.

When the students were grouped according to three ethnicity/racial groups, significant differences in means were found for positive school orientation across all three waves. Therefore, a four-step moderated mediation model that examined the influence of positive school orientation on these three ethnic/racial categories' depressive symptoms was conducted for each of the waves. Findings from these analyses are outlined in the tables below.

Table 23   Wave 6 Moderated Mediational Influence of Positive School Orientation on Depressive Symptoms, by Ethnicity/Race Coded as Three Groups: Only Black/African American, Only Latino/Hispanic, and Other (Any Combination of Other Ethnicities/Races)

Wave	N	Process Model	BootLLCI	BootULCI
6	173	7	-0.0389	0.0021
6	173	8	-0.0485	0.0007
6	173	14	-0.0178	0.0094
6	173	15	-0.0197	0.0083

Findings revealed no significant effects at Wave 6 of data collection for positive school orientation on these students' depressive symptoms.

Table 24 **Wave 7 Moderated Mediational Influence of Positive School Orientation on Depressive Symptoms, by Ethnicity/Race Coded as Three Groups: Only Black/African American, Only Latino/Hispanic, and Other (Any Combination of Other Ethnicities/Races)**

Wave	N	Process Model	BootLLCI	BootULCI
7	302	7	-0.0084	0.0087
7	302	8	-0.0094	0.0097
7	302	14	-0.0175	0.0034
7	302	15	-0.0185	0.0034

Findings revealed no significant effects at Wave 7 of data collection for positive school orientation on students' depressive symptoms.

Table 25 **Wave 8 Moderated Mediational Influence of Positive School Orientation on Depressive Symptoms, by Ethnicity/Race Coded as Three Groups: Only Black/African American, Only Latino/Hispanic, and Other (Any Combination of Other Ethnicities)**

Wave	N	Process Model	BootLLCI	BootULCI
8	303	7	-0.0132	0.0139
8	303	8	-0.0144	0.0132
8	303	14	-0.0247	0.0032
8	303	15	-0.0276	0.0013

Findings revealed no significant effects at Wave 8 of data collection for positive school orientation on students' depressive symptoms.

Research Question 5

To what extent does positive school orientation (for students grouped by gender)

serve as a mediator for condition effects upon students' anxiety symptoms?

Because no significant gender differences were found for positive school

orientation across Waves 6, 7, and 8, Research Question 5 utilized a simple mediation

model, Process Model 4, to determine the influence that positive school orientation had

on students' anxiety symptoms.

Table 26   **Mediational Influence of Positive School Orientation on Anxiety Symptoms**

Wave	N	Process Model	BootLLCI	BootULCI
6	185	4	-0.0098	0.0147
7	306	4	-0.0118	0.0038
8	313	4	-0.0316	-0.0014

In these analyses, no evidence of mediation was found at Waves 6 or 7; a

significant effect was found at Wave 8. This is because "0" falls outside of the

bootstrapping lower limits confidence interval of -.0316 and bootstrapping upper limits

confidence interval of -.0014. This means that positive school orientation mediated

program effects on students' anxiety outcomes at Wave 8, only.

Table 27   Wave 8 Significant Mediational Effect: Examining X (*Positive Action* Condition) on M (Positive School Orientation) and M (Positive School Orientation) on Y (Anxiety Symptoms)

Model Name	Coefficient	P-Value	LLCI	ULCI
PA Condition → Positive School Orientation	0.2042	0.0027	0.0715	0.3368
Positive School Orientation → Anxiety Symptoms	-0.0708	0.0258	-0.1330	-0.0086

Findings revealed that the *Positive Action* condition had a significant positive effect on positive school orientation, and positive school orientation had a significant effect on decreasing students' anxiety symptom outcomes.

Research Question 6

To what extent does positive school orientation (for students grouped by ethnicity/race) serve as a mediator for condition effects upon students' anxiety symptoms?

Because a significant difference in positive school orientation perceptions was found for students grouped by two ethnicity/racial categories ("Black/African American" or "Other") at Wave 6, a moderated mediation model was conducted to determine the impact of this construct on students' anxiety symptoms.

Table 28   Wave 6 Moderated Mediational Influence of Positive School Orientation on Anxiety, by Ethnicity/Race Coded as Black/African American and Not Black/African American

Wave	N	Process Model	BootLLCI	BootULCI
6	180	7	-0.0308	0.0510
6	180	8	-0.0262	0.0655
6	180	14	-0.0442	0.0187
6	180	15	-0.0362	0.0253

Findings revealed no significant influence at any of the stages of the moderated

mediation model for the impact of positive school orientation on the two different

ethnic/racial groups' anxiety symptoms.

When students were grouped by three ethnicities/races, significant differences in

means were found across all three waves. Therefore, Process Models 7, 8, 14, and 15

were next conducted on Waves 6, 7, and 8, utilizing anxiety symptom outcomes, this time

–to determine at what stage such an interaction might exist. Findings from these analyses

are outlined in the tables below:

Table 29   Wave 6 Moderated Mediational Influence of Positive School Orientation on Anxiety Symptoms, by Ethnicity/Race Coded as Three Groups: Only Black/African American, Only Latino/Hispanic, and Other (Any Combination of Other Ethnicities/Races)

Wave	N	Process Model	BootLLCI	BootULCI
6	180	7	-0.0176	0.0286
6	180	8	-0.0177	0.0318
6	180	14	-0.0196	0.0162
6	180	15	-0.0157	0.0202

Findings revealed no significant effect for Wave 6 across any of the four process models. Next, the same analysis was conducted for Wave 7 data, with findings presented in the table below:

Table 30 **Wave 7 Moderated Mediational Influence of Positive School Orientation on Anxiety Symptoms, by Ethnicity/Race Coded as Three Groups: Only Black/African American, Only Latino/Hispanic, and Other (Any Combination of Other Ethnicities/Races)**

Wave	N	Process Model	BootLLCI	BootULCI
7	302	7	-0.0076	0.0088
7	302	8	-0.0074	0.0088
7	302	14	-0.0143	0.0041
7	302	15	-0.0142	0.0042

Findings revealed no significant effect for Wave 7 across any of the four process models.

Finally, an analysis was conducted on Wave 8 that utilized the three ethnicity/racial categories as moderators for the impact of positive school orientation upon students' anxiety symptom outcomes. Findings from this analysis are presented below:

Table 31   Wave 8 Moderated Mediational Influence of Positive School Orientation on Anxiety Symptoms, by Ethnicity/Race Coded as Three Groups: Only Black/African American, Only Latino/Hispanic, and Other (Any Combination of Other Ethnicities/Races)

Wave	N	Process Model	BootLLCI	BootULCI
8	310	7	-0.0133	0.0145
8	310	8	-0.0144	0.0137
8	310	14	-0.0222	0.0143
8	310	15	-0.0251	0.0113

These findings also revealed no significant effect for Wave 8 data across any of the four process models for the effect of positive school orientation on anxiety symptoms.

Research Questions 7 and 8

To what extent do levels of teacher attachment (by gender and ethnicity/race, respectively) serve as a mediator for condition effects upon students' depressive symptoms?

Because no significant gender or ethnicity/racial differences were found for teacher attachment across Waves 6, 7, and 8, Research Questions 7 and 8 utilized a simple mediation model (Process Model 4) to determine the influence these constructs had on students' depressive symptoms. Findings from this analysis are presented in the table below.

Table 32 **Mediational Influence of Teacher Attachment on Depressive Symptoms**

Wave	N	Process Model	BootLLCI	BootULCI
6	176	4	-0.0214	0.0040
7	309	4	-0.0206	0.0003
8	310	4	-0.0453	-0.0092

In these analyses, no evidence of mediation was found at Waves 6 and 7, but a significant effect was found at Wave 8. At Wave 8, the bootstrapping lower limits confidence interval was -.0453 and the bootstrapping upper limits confidence interval was -.0092, demonstrating evidence of a significant mediational effect at Wave 8.

Table 33 **Wave 8 Significant Mediational Effect: Examining X (*Positive Action* Condition) on M (Teacher Attachment) and M (Teacher Attachment) on Y (Depressive Symptoms)**

Model Name	Coefficient	P-Value	LLCI	ULCI
PA Condition → Teacher Attachment	0.2225	0.0008	0.0927	0.3524
Teacher Attachment → Depressive Symptoms	-0.1135	0.000	-0.1606	-0.0664

Findings revealed that the *Positive Action* condition had a significant positive effect on teacher attachment, and teacher attachment had a significant effect on decreasing students' depressive symptom outcomes.

Research Questions 9 and 10

To what extent do levels of teacher attachment (by gender and ethnicity/race, respectively) serve as a mediator for condition effects upon students' anxiety symptoms?

Because no significant gender or ethnicity/racial differences were found for

teacher attachment across Waves 6, 7, or 8, Research Questions 9 and 10 utilized Process

Model 4 to determine the influence these constructs had on students' anxiety symptoms.

Table 24 presents the findings from these analyses.

Table 34   **Mediational Influence of Teacher Attachment on Anxiety Symptoms**

Wave	N	Process Model	BootLLCI	BootULCI
6	184	4	-0.0981	0.0154
7	309	4	-0.0168	0.0056
8	317	4	-0.0540	-0.0101

For these analyses, no evidence of mediation at Waves 6 and 7 was found, and a

significant effect was found at Wave 8. This is because at Wave 8, the BootLLCI was -

.0540 and the BootULCI was -.0101, and "0" falls outside of these two numbers.

Table 35   **Wave 8 Significant Mediational Effect: Examining X (*Positive Action* Condition) on M (Teacher Attachment) and M (Teacher Attachment) on Y (Anxiety Symptoms)**

Model Name	Coefficient	P-Value	LLCI	ULCI
PA Condition → Teacher Attachment	0.2093	0.0013	0.0820	0.3367
Teacher Attachment → Anxiety Symptoms	-0.1419	0.000	-0.2073	-0.0765

These findings demonstrate that the *Positive Action* condition had a significant

positive effect on teacher attachment, and teacher attachment had a significant effect on

decreasing students' anxiety symptom outcomes.

Summary

In summary, no gender differences were found for students' perceptions of either positive school orientation or teacher attachment across Waves 6, 7, or 8 of the data. Ethnicity/race differences were found for students grouped by "Black/African American" and "Other" at Wave 6 of the data for positive school orientation only. No significant effects were found in a moderated mediation model utilizing these ethnicity/race variables at Wave 6. When students were grouped by three ethnicity/race categories, significant differences were found for positive school orientation across all three waves of data collection, but no significant effects were found across any of the waves in these moderated mediation models. Process Model 4, simple mediation, was conducted for the rest of the research questions examining the influence of teacher attachment on depressive and anxiety symptom outcomes, examining each wave as a whole group. Results revealed significant findings at Waves 8 for teacher attachment on students' depressive symptoms, as well as on students' anxiety symptoms. In a simple mediation model, a significant effect was also found at Wave 8 for positive school orientation on these students' depressive and anxiety symptom outcomes, as well.

CHAPTER 5: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The aim of the present study was to determine the role of relational school climate in influencing students' depressive and anxiety symptoms. Students' perceptions of school tend to decline during their middle school years (Way et al., 2009), and the present study seeks to contribute to the growing body of research investigating the potential impact SEL efforts can have in improving students' perception of their school's climate as well as the impact that this may have on their mental health outcomes. In the present study, relational school climate was operationalized through the constructs of positive school orientation and teacher attachment, while mental health was operationalized by using outcomes of depressive and anxiety symptoms. A discussion of the findings, as well as general conclusions and recommendations for schools, educators, and researchers are discussed further in the sections below.

Discussion and Conclusions

Few teachers have training in mental health support (Minahan, 2019), yet 49% of students enter classrooms with a mental health disorder (Merikangas et al., 2010). Children of poverty are also more likely of suffering from mental health problems (Adler et al., 1996). Previous research has found that SEL efforts can improve students' mental health outcomes (e.g. Barnes, 2019; Edwards et al., 2005; Frank et al., 2014; Jones et al., 2011). Prior research from the Chicago trial of *Positive Action* found that students in *Positive Action* schools had greater improvements in depression and anxiety, in

comparison to students attending the control schools (Lewis, DuBois et al., 2013).

Therefore, the present study sought to dig deeper to determine the role that relational

school climate might have had in these improvements, with "joiners" added to the

sample.

Differences in Groups' Perceptions of Relational School Climate

Previous research has demonstrated that different groups of students within a

school perceive their school climate differently (Li & Lerner, 2011; Loukas & Robertson,

2004; Roberts et al., 1995; Voight et al., 2015). In light of this, the present study first

determined whether differences in climate perceptions existed for students, based on their

gender and ethnicity/race. There were no differences in boys' versus girls' perceptions of

positive school orientation or teacher attachment across any of the waves of data. This is

contrary to Roberts et al.'s (1995) findings in an analysis from the Sense of School

Community Scale, in which differences in community perceptions were found between

boys and girls. Other research has found that boys also report more competition and

friction among their peers, while girls report more cohesion (Loukas & Robinson, 2004).

The findings of the present study suggest that positive school orientation (measuring both

school connectedness and feelings and safety) and teacher attachment (measuring

students' attachment to and relationships with their teachers) are viewed similarly by both

boys and girls in this sample. This is in line with previous *Positive Action* studies that

have not found consistent gender differences (Lewis et al., 2017).

As previously discussed, there were limitations in the measurement of

ethnicity/race across the participating schools. Students' perception of relational school

climate is representative of their climate perceptions in their particular school, and these

differences in ethnicities/races reveal that in certain instances, different schools comprised of different ethnic/racial groups in this study perceive their school's climate differently. The differences in ethnicities/races might also be indicative of whole-school perceptions of climate, as revealed by the dominant ethnicity/race group for certain schools in the sample. Results therefore revealed students' experiences across all of the schools, taken together.

This study also acknowledges how diversity in ethnicity/race can be challenging to categorize, as many students marked multiple ethnicities/races on their forms. Because "Black/African American" and "Latino/Hispanic" were the two dominant ethnicities/races identities that students in the sample indicated, these ethnic/racial groups were coded in one analysis according to those who had only marked "Black/African American" and those who had only marked "Latino/Hispanic," respectively –alongside a third category of students who had marked any of the other ethnicities/races on the form as well as a combination of "Black/African American," "Latino/Hispanic" and any of the other options ("White," "Native American," "Asian," or "Other").

When students were coded by marking "Black/African American" for at least one of their ethnicities/races and "Not Black/African American" for any other combination of ethnicities/races, significant differences in means were found at Wave 6 for positive school orientation, only. By Wave 7, this difference was no longer present, nor was this present in Wave 8. The significance at Wave 6 reveals that upon entering seventh grade, students with any Black/African American lineage felt differently about their school community than their peers did, but by the end of seventh grade and onward into eighth grade, this difference was no longer there. This suggests that positive school orientation

changed for these students over time. These scores across all three waves were lower than the significance levels for teacher attachment, revealing that ethnicity/race differences were greater for positive school orientation than teacher attachment when examined in this way. When students were grouped according to three ethnicity/racial categories (coded with a "1" if they marked *only* "Black/African American" for their ethnicity/race, a "2" if they marked *only* "Latino/Hispanic" for their ethnicity/race, and if students had noted any combination of ethnicities/races and/or "Native American," "Asian," "White," or "Other," they were treated as "Other" and coded with a "3") there were differences across all three waves of data collection for positive school orientation, as well. These differences revealed that Black/African American students had lower perceptions of positive school orientation.

Finally, "joiners" at Waves 7 and 8 were analyzed in relation to positive school orientation and teacher attachment, finding no differences in how these students perceived their school's climate, in comparison to students who had been in the study in previous years.

Mediation and Moderated Mediation Findings

Due to the difference in the two ethnicity/race groups' ("Black/African American" and "Other") perceptions of positive school orientation at Wave 6, a moderated mediation (with Process Models 7, 8, 14, and 15) was run to determine at what stage of the interaction an influence on depressive and anxiety symptoms might have existed for this wave. There were no significant findings from these analyses, nor when positive school orientation was examined for the entire wave as a whole. Wave 6 was also much smaller in size than Waves 7 and 8 which could help account for this lack of

significance. Wave 6 also represents the start of their seventh grade year, meaning they had received fewer *Positive Action* lessons than the later waves.

The mediational analyses utilizing Process Model 4 found that positive school orientation acted as a mediator for both depressive and anxiety symptoms at Wave 8. These findings suggest that it might take time for positive school orientation to develop amongst middle school students in order to have an impact on their mental health, as this effect was found at the end of their eighth grade year and not previously in seventh grade.

Teacher attachment had a mediational influence on students' depressive symptoms at Wave 8, as well as on students' anxiety symptom outcomes at Wave 8. There were no group differences for teacher attachment across any of the waves. Teacher attachment represents each students' individual feelings towards their school teachers, so this might account for the lack of group differences (as positive school orientation represents the perception of the whole school as a connected community.)

Taken together, these findings demonstrate that the effect of these contructs was most pronounced near the end of students' participation in *Positive Action,* suggesting that it takes time for such an effect to take place. This in line with other research stating that a longer duration with SEL efforts is more effective in influencing student outcomes (Collaborative for Academic, Social, and Emotional Learning, 2008). It might also take time for school climate to develop. The lack of significant findings at Waves 6 and 7 reveals that at the start of seventh grade, students' perception of the two relational school climate variables did not have an impact on their mental health outcomes –possibly because they were in the beginning years of their middle school *Positive Action* learning experience. The sample size was also smaller at Wave 6 of data collection.

Both positive school orientation and teacher attachment represent aspects of relational school climate; that is, both constructs are indicative of the relationships students build in school. Prior research has found that students discussing their school as a community tend to focus the conversation on people and their relationships with others (Pooley et al., 2008). According to Osterman (2000), how secondary "…students feel about school and their coursework is in large measure determined by the quality of the relationship they have with their teachers in specific classes" (p. 344). Relationships with teachers and peers are fundamental in influencing students' perception of and experience in their school. As discovered in this study, these relationships may take time to develop, but once they do, they can be impactful for all students' mental health.

Positive school orientation as a construct measures students' perception of their school environment as a caring, connected community (Kaminski et al., 2009). This sense of community is imperative, as all humans have basic needs for a sense of belonging, and this feeling is innate to human nature (Baumeister, 2012). When humans lack a feeling of belongingness with others, it can result in negative outcomes such as stress, negative affect, and anxiety (Baumeister & Leary, 1995). Therefore, developing community and relationships in school can help students increase their innate need for belongingness and experience improvements in their mental health, as a result. Sense of belongingess has also been found to be associated with positive mental health for humans, in general (Baumeister & Leary, 1995). Because the influence of positive school orientation was only significant at Wave 8 for depressive and anxiety symptoms, the findings suggest that school community plays a greater role in the mental health of students as they grow older and have spent more time in an SEL learning environment.

It is also possible that a universal SEL curriculum with common program tenets will develop cooperation and cohesion amongst the students who are receiving such instruction and working together to enact the vision of the program. Within the context of the present study, it is important to note that the *Positive Action* curriculum has activities that students and teachers complete together, including establishing goals and monitoring progress towards them. Because the *Positive Action* curriculum is delivered each day and recursively taught each year for students in *Positive Action* schools, there is likely a sense of cooperation that develops within these shared learning experiences and across the themes students become familiar with, over time. Furthermore, the main concept of the program, "The-Thoughts-Actions-Feelings Circle" is integral to activities and discussions of the lessons. Students may develop a sense of cooperation with their peers, as they work alongside them and develop such concepts within themselves, as guided by their teachers. In turn, students are receiving character education lessons from their teachers, which may also be helping to build trust and attachment. A sense of community might then develop across students' participation in these activities, ultimately infuencing their depressive and anxiety symptoms.

Teacher attachment –which measures students' level of attachment to their teachers in school –was also found to have a significant impact on depressive and anxiety symptoms at Wave 8. Because these findings were not significant at Waves 6 and 7, this suggests that teacher attachment is more influential for students who are older and have spent more time in a social emotional learning environment. In their seventh grade year (Waves 6 and 7) these students might not have had an opportunity to build relationships

with their teachers yet; results indicate that this might take time to develop in order to have a significant influence.

Attachment theory can help researchers as well as educators better understand how anxiety and depression develop in diverse youth (Brumariu & Kerns, 2010). Previous research has found relationships between young people's attachment style and their mental health outcomes (e.g. Brumariu & Kerns, 2010; Muris et al, 2000). For instance, poorer family relationships and anxious attachments predicted the onset of depressive episodes for senior class female students (Eberhart & Hammen, 2006). It is estimated that one third to one half of all children have an insecure attachment with at least one parent, and so it is very common for teachers to have insecure children in their classrooms (Bergin & Bergin, 2009).

Developmentally, older students are more capable of diversifying their attachment networks to include other trusted figures outside of their immediate family (Seibert & Kerns, 2009). A mother or father is most likely to be a child's principal attachment-figure (Bowlby, 1969), but as children grow into adolescence, they become more capable of forming attachments to non-parent attachment figures (Seibert & Kerns, 2009). Adolescence is also a time when children become less dependent on their primary attachment figure (Allen & Land, 1999), but if a child has a history of insecure attachments with this figure, then they may be less trusting in forming attachments with others (Verschueren, 2015). Teachers in middle school might then become trusted figures that students can form secure attachments with, and SEL efforts might be a means for such attachments to develop. This also helps explains the present study's findings of teacher attachment having significance at the later ages of middle school.

Other research has found associations between parent-attachment measures and teacher measures of middle childhood youth's ability to adapt in school (Kerns et al., 2000). As a lack of secure parent/caregiver attachment can result in feelings of depression and anxiety for preadolescent and adolescent students (Brumariu & Kerns, 2010), this is when relationships with teachers may become especially important in helping students adjust in school and in life. In general, healthy teacher-child relationships have characteristics of low conflict, warmth, open communication, and child autonomy – characteristics of all secure attachments (Marcus & Sanders-Reio, 2001). Thus, a perception of caringness within the teacher-student relationship may be indicative of how attached students are to their teachers. If a student is coming from an environment with insecure attachments and poorer relationships, their relationships within the school environment might then become a powerful force for improving their mental health.

Previous research has also provided evidence that in-school relationships are impactful in improving student outcomes. A meta-analysis of 99 studies focusing on relationships between teachers and students revealed positive associations between positive teacher-student relationships and student engagement and achievement, as well as negative associations between negative teacher-student relationships and student engagement and achievement (Roorda et al., 2011). A different meta-analysis of 119 studies found that learner-centered relationships had an above-average association with student outcomes, as well (Cornelius-White, 2007). Based on the findings of the present study, SEL efforts are a means to help improve teacher-student relationships, increase students' attachment to their teachers, build their sense of school community and connectedness with others, and improve their mental health outcomes, as a result.

Reccomendations

The findings of the present study demonstrate that schools can utilize SEL efforts to build relationships and sense of community within their school buildings and improve the mental health of students. While this might take time and fidelity for effective implementation, the results of the present study indicate that this can be a very impactful endeavor in improving students' depressive and anxiety symptom outcomes. The mental health of youth in America is an area of great concern, as 8.4% of 13-14 year olds suffer from major depression, and this rate nearly doubles to 15.4% by the age of 17-18 (Merikangas et al., 2010). The middle school environment is therefore a prime location to enact interventions and efforts that will help mitigate this growth that happens over time.

The passage of ESSA mandates schools across America attend to the social and emotional education of each child (ESSA, 2015), but diverse states, districts, and schools approach this instruction differently, and this legislation does not require that a comprehensive, universal, research-based SEL curriculum be used in all schools. Although there is a growing body of research on diverse SEL programs and their effectiveness, not all programs are created equal –nor are all curricula as comprehensive as they need to be in order to be effective and positively impact student outcomes. Therefore, a recommendation is for the federal government to offer stronger support and guidance to states in selecting and financing the costs of comprehensive, research-based SEL curriculum.

Without a formal SEL curriculum in place in every school, limited teacher preparation and ability to provide SEL instruction can become a barrier, as not all teachers may possess the necessary skillset for effective SEL delivery. An analysis of

3,916 required courses in teacher education programs across 304 colleges in the United States discovered that 51-100% of these teacher education programs did not address any of the five core student SEL dimensions in their courses (Schonert-Reichl et al., 2017). An NCATE report also determined that teacher education programs in the United States are not providing sufficient coursework for teachers in the child development sciences and that a gap tends to exist betw studied theory and new teachers' classroom practice (Leibbrand & Watson, 2010). In light of this, SEL curriculum kits such as *Positive Action* actually make SEL delivery feasible and straight-forward. In other words, ESSA mandates the instruction, and such curriculum provides the tools for successfully bringing it to schools and teachers.

Positive Action is the curriculum of focus in the present study, and it is a comprehensive, universal (rather than targeted) program. Universal interventions for preventing depression specifically have been found to be less effective than selective and indicated prevention programs (Horowitz & Garber, 2006). However, *Positive Action* is a universal SEL program that seeks to improve mental, emotional, *and* social outcomes of students. Therefore, it is likely the comprehensive nature of *Positive Action* that makes it effective in its universality and ability to reach all students. *Positive Action* also seeks to develop the whole child and improve different aspects of their social emotional well-being; depressive and anxiety symptoms are just two facets of this. Because *Positive Action* is comprehensive, a variety of student outcomes can be positively influenced – and not just the constructs of interest in the present study. Previous research of *Positive Action* has found the curriculum effective in improving student outcomes across diverse social, emotional, mental, and physical health domains (e.g., Bavarian et al., 2013;

Bavarian et al., 2016; Snyder et al., 2010; Lewis et al., 2016; Lewis, DuBois, et al., 2013; Lewis, Schure, et al., 2013; Silverthorn et al., 2017; Stalker et al., 2018). *Positive Action* is also based on child development theories and has a growing body of research to support its effectiveness; in other words, *Positive Action* has been proven to work. Therefore, implementing *Positive Action* across all schools might help improve not only the climate of schools across the United States but also lead to reduced depression and anxiety for diverse students, among other proven positive outcomes.

Another recommendation is the integration of SEL with Positive Behavioral Interventions and Supports (PBIS) practices in schools. Research has demonstrated that a combination of SEL and PBIS produced a greater improvement in students' overall mental health, in comparison to an SEL-only or PBIS-only environment (Cook et al., 2015). SEL and PBIS are typically implemented and researched separate from each other; however, "…each of the approaches offers unique theoretical underpinnings and practices that complement the other and produce potentially synergistic effects" (Cook et al., 2015, p. 169). Therefore, schools can utilize both SEL and PBIS efforts in conjunction with one another, as both focus on preventing problems that mitigate student success, emphasize positive approaches rather than punitive ones, and place value on helping students develop skills that will help them be academically successful (Cook et al., 2015). Future research might therefore explore the impact that these two approaches in tandem can have in influencing students' mental health and academic outcomes.

If a school lacks the time and resources for such a comprehensive SEL endeavor but still wants to reap the benefits of positive relational school climate, there are other means to build this and improve students' mental health outcomes. Previous research has

demonstrated that involving parents in students' education can influence overall school community, for instance (Belenardo et al., 2001). If parents respond and participate in school involvement activities, then they become active participants in school life and feel a stronger sense of community within their child's school as a result (Belenardo, 2001). Furthermore, when inactive parents receive the information and resources necessary to become more involved in their child's school, then the feeling of community extends to all parents –that is, all parents at the school feel a greater sense of community (Belenardo, 2001). This sense of community can then extend to other members of the school and strengthen the sense of community for all.

Schools can also offer a variety of extracurricular activities to help improve community and students' connection to their teachers and schools. High school students feel more connected to their school when there is high participation in extra curricular activities in addition to positive classroom climate (McNeely et al., 2002). Middle school students who participated in extracurricular activities were less likely to later drop out of high school, as well (Mahoney & Cairns, 1997). School staff can also work to incorporate team-building and culture-building activities into the day-to-day activities of school life. For example, staff can organize assemblies that help build a sense of community for students and staff.

Cross-age peer mentoring is another means to help build school community for students who might feel disengaged from their school environment. Older students serving as mentors for younger students resulted in a greater sense of school community for the mentoring students, as well as provided a means for them to give back to their school community (St. Vil & Angel, 2018). Additionally, the mentored students

experienced the benefits of having an older peer's social guidance. The researchers also contended that there is a "…dearth of prosocial activities or options that adolescents and young adults are restricted to in deciding how to spend their time," (p. 334). Opportunities for students to become involved in school life and develop identity within their school have been found to be protective factors for the mental health of children (Patel et al., 2007). Integrating efforts for at-risk adolescents to have an important role in a school community can also lessen their participation in "street communities" such as gangs, as adolescents seek to fulfull their need for a community with others (Pretty et al., 1996).

Principals and school leaders might also offer professional development on the child development sciences such as Attachment Theory and the Need to Belong Theory. This will help fill any gaps in their own preparation and better equip teachers to attend to diverse students' social and emotional needs. Thereafter, if children with a history of a lack of belongingness and/or insecure attachments are in their class, the teachers will have a better understanding of how best to serve their unique needs. Children with a history of insecure attachments tend to exhibit negative behaviors that can make it challenging for adults to attach to them (Bergin & Bergin, 2009). As a result, teachers tend to interact with insecure children in a controlling manner, are less likely to expect compliance from these students, and tend to use repeated directives in their interactions with them (Bergin & Bergin, 2009). Helping teachers build a repertoire of strategies for doing so can help improve the mental health of diverse youth.

Furthermore, principals might offer professional development for teachers on school climate and culture; specifically, how diverse groups of students within their

school might be perceiving the school's climate differently. Creating an inclusive environment in which all students feel that they are accepted and valued members of the community may be key to helping improve the mental health of diverse youth. Teachers can be trained in strategies for doing so, as well as be granted time for staff discussions on how a caring community for all students can be cultivated within their school's walls.

Relationship-building in school is also a recommended strategy, but "The suggestion to 'build a relationship' may be too vague to be helpful – teachers need more specific information about effective ways to engage and relate" (Minahan, 2019). Strategies for achieving positive relationships between teachers and students can include conversing with fellow staff about students' top interests, greeting students at the door and commenting and/or asking questions about their interests, and utilizing opportunities for one-on-one time with students, such as taking time to have lunch with them (Minahan, 2019). Previous research has found that students' perceived levels of caring from their teachers predicted their academic motivation and effort (Wentzel, 1997), and a positive relationship with teachers helps students feel more comfortable in their school environment (Verschueren, 2015). Being mindful of how praise is given in class and providing students choices rather than directives are also offered as strategies to help students who suffer from mental health challenges (Minahan, 2019).

Summary

As the findings from the present study reveal, relational school climate is influential in improving the mental health of at-risk youth, and targeted SEL instruction is an effective means to facilitate this. Results indicated that this influence was most pronounced at students' later years of school, which also reflects longer participation in

Positive Action, meaning students had more time for SEL instruction as well as for relational school climate to develop in the school setting. Students categorized by gender and ethnicity/race did not have significant differences in their perceptions of teacher attachment. Differences in ethnicity/race ("Black/African American" or "Other") for positive school orientation were found only at Wave 6, but when grouped by three ethnicities/races ("Black/African American," "Latino/Hispanic," or "Other"), differences were found across all three waves. In a moderated mediation model utilizing these three ethnic/racial categories, no significance was found for positive school orientation's mediational influence on depressive or anxiety symptoms across any waves of the data. When examined as a whole group, positive school orientation was found to mediate students' depressive and anxiety symptoms at Wave 8, and teacher attachment was found to mediate depressive and anxiety symptoms at Wave 8, as well.

In this final chapter, recommendations were given on how to develop a caring, inclusive community within school settings that focuses on building relationships between school members. Strategies include integrating PBIS and SEL efforts together, employing universal SEL curriculum in schools, utilizing cross-age peer mentoring, increasing opportunities for parental involvement, implementing extracurricular activities, as well as employing intentional professional development for teachers in the child behavioral sciences and relationship-building strategies.

The literature research of this study has revealed a pressing problem in the United States –that youth (and adults) of poverty are at-risk of developing negative mental health outcomes due to the unique stressors they experience in their lives. Furthermore, schools' climates can be negatively impacted by negative student behaviors as well as contextual

factors of the neighborhoods in which they live. Comprehensive, universal SEL curriculum can be delivered on a mass scale in the United States, helping to close gaps in students' mental health, as well as improve school climate for both teachers and students –thus helping to improve the well-being of our nation.

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