

THE RELATIONSHIP BETWEEN SELF-EFFICACY BELIEFS AND SOCIAL-EMOTIONAL
COMPETENCE IN AT-RISK GIRLS

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ABSTRACT

Little is known about the relationship between self-efficacy beliefs and social-emotional competence in ethnic minority middle school girls. These children face a number of challenges related to their minority status, peer relationships, school transition, and entry into adolescence. School psychologists have attempted to increase the chances of success among this population by trying to build their resilience. Unfortunately, there is little prior research on the relationship between protective factors such as self-efficacy, optimism, social skills, and pro-social classroom behaviors for this unique population. A goal of this study was to generate data that would appropriately inform social and emotional interventions. This study examined the relationship between self-efficacy beliefs and social-emotional competence in 16 at-risk 7th and 8th grade students over the course of one school year. A cross-lagged panel design determined the trajectory of change among self-efficacy beliefs and social-emotional competence variables over time. Crosstab and chi-square analyses examined relationships among variables on an individual level. The strongest relationships were found among the same variables over time, indicating that interventions should focus on a single skill set of concern for the greatest improvement in that skill set over time. Some data suggest a relationship between optimism and social-emotional competence, which would indicate that optimism interventions may be helpful in improving social-emotional competence for this population. Optimism may be necessary but not sufficient for improvement in social-emotional competence. Future research may benefit from examining these relationships across a longer period of time and examining how different cultural variables may impact our understanding of the relationship between self-efficacy beliefs and social-emotional competence.

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CHAPTER I

INTRODUCTION & OVERVIEW

Population Specific Challenges

Ethnic minority middle school girls face a number of challenges. As academic demands increase, middle school students are faced with the physical, cognitive, social, and emotional changes that adolescence brings (Elias & Bruene Butler, 2005). In addition to these middle school difficulties, these students face the ethnic achievement gap and unique societal demands. This unique population may experience less support to excel academically from parents and teachers. In my experience, this population often seems entrenched in a peer culture that does not value academic excellence, while endorsing aggression as a means to solve social problems. In order for these girls to overcome their difficulties and still function appropriately in school, they must have a fit between their environment and development that reduces outside risks (Wyman, 2003). Dubois et al. (1992) highlight that in the face of such adversity outside school, it is even more important for the students to have positive experiences in the school.

Middle school is a time of great transition. Middle school usually lasts 2-3 years, after which the students transition into high school. School psychologists working in

middle schools must be able to help children transition into the middle school environment, while also preparing the children for their transition into high school. Middle school represents an expectation of personal academic and behavioral responsibility that did not exist in primary school, paired with a decrease in academic and behavioral supports. Meanwhile, students are placing much more value on social relationships, and experimenting with their personal identities (Elias & Bruene Butler, 2005). This transitional time provides numerous opportunities for the children to develop self-efficacy and social-emotional competence.

Generally, middle school girls may struggle with their newly emerging identities, often brought on by the onset of puberty (Mazarella, 2005). Adolescent girls outnumber boys in prevalence of eating disorders (APA, 2000; Wykes & Gunter, 2005), anxiety (Beesdo, Knapp, & Pine, 2009; Lewinsohn, Lewinsohn, Gotlib, Seeley, & Allen, 1998), and depression (Hankin, Mermelstein, & Roesch, 2007; Nolen-Hoksema & Girgus, 1994), which are, of course, concerns to school psychologists. There are also differences among genders in terms of self-efficacy beliefs, which also begin to emerge in middle school. Self-efficacy beliefs begin to conform to gender-role stereotypes (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001), which may hinder school performance. For example, math motivation for girls has been shown to significantly drop at the onset of puberty (Meece, 2006). Since there are differences in both risk for difficulties and responsiveness to interventions based on gender, gender should be considered as a factor when providing school mental health services (Friedrich, Raffaele Mendez, & Mihalas, 2010).

Ethnic minority students have additional struggles in school, relating to their minority status. The experience of racial discrimination at school predicts a decline in grades, academic self-efficacy, and mental health, as well as the increased association with friends who are disengaged from school and have problem behaviors (Wong, Eccles, & Sameroff, 2003). Minority girls are among the most likely to become disengaged and drop out of school, particularly Latina girls (Garcia-Reid, 2007). Latinas, depending on their immigration history and level of acculturation, may have varying levels of English proficiency which can impact their social-emotional competence in an English-speaking classroom (Gertner & Rice, 1994; Oades-Sese & Esquivel, 2007; Oades-Sese, Esquivel, Kaliski, & Maniatis, 2011). Immigration history, level of acculturation, and English proficiency would certainly be important variables to consider when working with any minority student, regardless of country of origin. It is important for schools to provide enough understanding and support for minority children, to help them offset risks that may hold them back from reaching their full potential.

Both McLoyd and Ogbu discuss the overrepresentation of ethnic minorities among poverty groups (as cited in Luthar, 1999, p. 28). Socioeconomic disadvantage is related to difficulties in middle school adjustment, such as poorer academic performance, increased absences, and behavioral problems at school (DuBois, Felner, Meares, & Krier, 1994). Since conditions of socioeconomic disadvantage aggregate, students with greater socioeconomic disadvantages experience greater difficulty (DuBois, Felner, Meares & Krier, 1994). Poor neighborhoods often have higher crime rates, which can impact school engagement in Latinas (Garcia-Reid, 2007). Therefore, a low socioeconomic level can make middle school life even more challenging.

Ethnic minority girls often lack successful same gender role models from the same racial and cultural background (HISPA, 2006; Network of Executive Women, 2008). As a result, these girls may not believe that a career path necessarily exists for them. Such girls don't spend a great deal of time dreaming about their future because they don't believe it will be especially bright, limiting the value placed on education. Education is seen as something that must be done, rather than a vehicle for success. This may be a contributing factor to the high rates of academic disengagement, problem behaviors in school, and drop-out that exists for ethnic minority students (Garcia-Reid, 2007; Wong, Eccles, & Sameroff, 2003).

With peer relationships becoming more important during middle school (Elias & Bruene Butler, 2005), it seems that most girls do believe that they can be successful in peer relationships. This does not necessarily equate with being pro-social. School psychologists are quite familiar with girls who were proud of making fun of another student, as it can be viewed as evidence of social success to show dominance over a schoolmate. For these girls, the peer culture encourages acting out in school as a sign of leadership, and a pro-social stance can be a sign of weakness.

Middle school at-risk girls are also characterized by strong social networks, rich with "drama." "Drama" refers to the ever-evolving social jungle where social statuses fluctuate, relationships break and mend, and the most aggressive girls dominate. They may dominate through physical force by "fighting someone," or they may dominate through the use of relational aggression such as gossiping, spreading rumors, ostracizing, keeping secrets, etc. Each girl struggles to stay in the social circle and to climb the social ladder. This environment may be seen as antisocial, or it may be seen as an adaptive

culture in a way that is in line with the hostility and hurdles this population faces outside of school. Perhaps creating an aggressive peer culture is a way in which at-risk girls can unite and relate. In fact, research suggests that some aggression can be normative, and even beneficial, to social development adjustment in adolescents (Little, Brauner, Jones, Nock, & Hawley, 2003). Therefore, it is important for school personnel to understand the peer culture of ethnic minority girls. They must understand the dynamics of social interaction in order for an intervention targeting social-emotional competence to be successful. School personnel may view these negative behaviors as evidence for a lack of resilience, when it may simply be a cultural difference in the way that resilience is expressed among this population.

Rationale for this Study

According to the National Association of School Psychologists (NASP) Practice Model (NASP, 2010) school psychologists should support positive behaviors and socially successful students, support diverse learners, and create safe, positive school climates. Therefore, best practices for school psychologists requires them to consider cultural differences of this population and do what is necessary to support these students on an individual, group, and even system level. The NASP Practice Model (NASP, 2010) also explicitly addresses the importance of understanding the diversity in development among students and populations, which is directly addressed by this study. The model urges school psychologists to make ethical, data-based decisions to address these issues. The present study is designed to inform school psychologists about the various ways to conceptualize strengths, competencies, and resilience among disadvantaged, at-risk middle school girls, as well as to provide data about the relationship of self-efficacy

beliefs and social and emotional competence in this population. It is important to know how these constructs may relate among this unique population, so that school psychologists can make informed decisions about interventions.

CHAPTER II

LITERATURE REVIEW

Protective Factors

When adolescents are exposed to multiple stressors, including, but not limited to, the risks mentioned previously, they may face negative outcomes such as a decrease in academic performance, disengagement from school, and delinquency. There are many adolescents who overcome the risks they face and manage to obtain positive outcomes, even when others do not overcome similar risks. These adolescents are believed to have had protective factors, which contributed to their resilience.

According to the National Association of School Psychologists (NASP) Principles for Professional Ethics, Standard I.3.2, school psychologists must pursue knowledge about a number of factors that may influence child development, behavior, and student learning (NASP, 2010). Many school psychologists use the ecological framework (Bronfenbrenner, 1979) which considers the multiple levels that may influence a child's development, behavior, and even student learning. In considering the multiple levels which may influence a child, it is also helpful to consider Elias' environment-centered formula of coping and prevention (Dalton, Elias, & Wandersman, 2007). The formula

considers risk and protective processes that are at play, influencing the population's outcome. The formula highlights that even in the face of adversity, the population may have enough protective influences to overcome the adversity and have positive outcomes.

Resilience

The field of resilience has greatly contributed to our current understanding of protective processes. Resilience is defined as “a dynamic process encompassing positive adaptation within the context of significant adversity” (Luthar, Cicchetti, & Becker, 2000, p. 543). Resilience is a complex and multi-dimensional construct, referring to the phenomenon of good outcomes in spite of threats to development (Masten, 2001). Resilience refers to the child's ability to overcome substantial adversity, while maintaining high self-esteem and a positive internal locus of control (Edwards, Mumford, & Serra-Roldan, 2007). Many variables are correlated with resilience that include, but are not limited to, high self-esteem, social-emotional competence, and self-efficacy (Masten, 1998; Werner & Smith, 1992).

Although the concept of resilience varies across theorists, most theories involve some sort of interaction between the individual and their environment, indicating that resilience is not simply an internal attribute, nor a fixed trait. According to Garmezy (1985) and Werner and Smith (1992), resilience is seen as deriving from three factors: attributes within the child, aspects of family life, and characteristics of wider social environments (as cited in Luthar, 2000, p. 552). Based on Bronfenbrenner's ecological model (1979), Cicchetti and Lynch (1993) developed the ecological-transactional model of resilience, which highlights the individual as being surrounded by a number of contexts in which various transactions between levels take place, impacting resilience (as

cited in Luthar, 2000, p. 552). Garcia Coll, et al. (1996) developed an integrative model of resilience that takes into account the unique risks and supports which surround minority children.

Integrative Model of Resilience

The integrative model of resilience (Garcia Coll, et al. 1996; Garcia Coll & Garrido, 2000) seems appropriate in considering the influences that may impact resilience in at-risk ethnic minority middle school girls, since it was developed for minority children. According to the model, social position variables such as race, social class, ethnicity, and gender influence the experience of social stratification mechanisms such as racism, prejudice, discrimination and oppression. In considering the social position variables of at-risk ethnic minority middle school girls, it is reasonable to assume that they have experienced some level of social stratification mechanisms inside or outside of school. Due to their minority status, unjust assumptions may have been made about their potential, or they may have not been considered for certain academic opportunities.

Social stratification mechanisms go on to influence segregation (residential, economic, social, and psychological), as well as promoting and inhibiting environments. It is likely that social stratification mechanisms have influenced where these children are born and raised, economic opportunity for themselves and their families, as well as who they interact with socially, and how they think of themselves psychologically. In addition, social stratification mechanisms impact environments such as schools, neighborhoods, and health care as either promoting or inhibiting. Due to social stratification mechanisms, these girls may very well experience inhibiting environments due to the mechanisms that lead to less school funding for their public school district, less

opportunities for healthy neighborhood involvement, and less access to high quality health care.

Social stratification mechanisms, segregation, and promoting or inhibiting environments all influence a child's adaptive culture. Adaptive culture refers to the culture that forms in an effort to negotiate the contextual situation. Such cultural adaptations vary and may include traditions and cultural legacies, economic and political histories, migration and acculturation, as current contextual demands. At-risk ethnic minority middle school girls may develop a confrontational culture in an effort to thwart social stratification mechanisms. Perhaps, the extended family develops a culture of protection and unity in order to help each other succeed in the face of their social stratification struggles.

In addition to impacting the adaptive culture, promoting or inhibiting environments also impact child characteristics (such as age, temperament, health status, biological factors, and physical characteristics) and family (structure and roles, values, beliefs and goals, racial socialization, and socioeconomic status). For example, an inhibiting health care environment may lead to a low health status. An inhibiting neighborhood may lead to parental drug use, impacting the child's biological factors. On the contrary, a promoting neighborhood may lead to healthy family roles, or quality family values.

Child characteristics, family, and adaptive culture impact the developmental competencies in minority children. According to Garcia Coll et al. (1996), developmental competencies include cognitive, social, emotional, linguistic, biculturalism, and coping with racism. When considering competencies, it is important

to consider the context in which these competencies developed as well as how different the competencies may be from what we expect. What may be perceived as a competency in one culture may not be perceived as a competency in another.

In thinking about ethnic minority middle school girls who face chronic daily struggles, it is important to consider how their resilience is expressed. When many educators think of resilient students they often think about the students who raise their hand, answer questions thoughtfully, behave appropriately, and engage in school activities even though they face a number of risk factors. While these students may in fact have resilience, it should be considered that resilience may be expressed in a number of ways. A girl with resilience may show her resilience by acting aggressively. Aggression may be the coping skill she uses to overcome the adversity of her family and peer culture. A girl with resilience may become the most popular girl in school by using her social-emotional competence to manipulate other students through relational aggression. When considering resilience, it is important to help students use their negatively focused competencies in a more positive way.

Optimism

Optimism is a positive attitude related to the current and future state of one's life and the world (Prince-Embury, 2007). Optimists typically hold steady expectations that things in life will go in their favor (Baily, Eng, Frisch, & Snyder, 2007), even when obstacles arise (Scheier & Carver, 1985). It is generally believed that upholding optimistic beliefs gives strength and determination to the individual, increasing the chance of a favorable outcome. In fact, optimism predicts both emotional and physical well-being (Karademas, 2006). Optimism has been found to be a predictor of life

satisfaction in both middle school and high school students (Shogren, Lopez, Wehmeyer, Little, & Pressgrove, 2006). Furthermore, optimistic beliefs have been associated with resilience, as they encourage individuals to cope during stressful events (Riollo, Savicki, & Cepani, 2002).

Research has shown that optimists display problem-focused coping and planning skills, but this does not mean that they necessarily have the self-efficacy needed to follow through on their plan (Baily, Eng, Frisch, & Snyder, 2007). Optimism and self-efficacy are both needed in order for people to believe that an outcome will be favorable, and that they have the ability to make that outcome happen. Research has studied the relationship between optimism and self-efficacy. Karademas (2006) determined that optimism is a mediator for the relationship between both self-efficacy and perceived social support to well-being. In addition, daily emotional support and self-efficacy predicted optimism (Karademas, 2006).

In adults, reduced optimism is related to maladjustment and resilience is related to high optimism (Riollo, Savicki, & Cepani, 2002). Research has attempted to explore the relationship between optimism and social emotional competence in school age children as well. Optimism was found to predict lower levels of externalizing problems in children over time (Ey et al., 2005). In school-aged girls, optimism about peer relations was negatively associated with feelings of isolation (Deptula, Cohen, Phillipsenn, & Ey, 2006).

Considering the research, optimism may be an important protective factor for children, especially those who are at-risk. Optimism may help this unique group of students to overcome their daily struggles and give them the motivation they need to

succeed in school. More specifically, optimism, along with self-efficacy, may lead to an increase in social-emotional competence displayed by ethnic minority middle school girls.

Self-Efficacy

Self-efficacy refers to the belief in one's own ability to execute action required to deal with a situation (Bandura, 1982). It is correlated with resilience (Masten, 1994; Masten, 1998) and also linked to the concepts of optimism, goal setting, empowerment, and emotional awareness (Reivich, 2010). Children who have self-efficacy are more likely than others to show resilient adaptational outcomes (Werner & Smith, 1992).

Self-efficacy may impact how much effort and persistence will be exerted when facing obstacles (Bandura, 1982). For example, if someone lacks self-efficacy (has self-inefficacy), they may not spend time on trying to solve a problem because they do not believe they will be successful. If someone has strong self-efficacy, they may spend extensive time in attempting to solve the problem because they believe that they will eventually be successful. Resilience is the overcoming of obstacles, while self-efficacy is the motivation to attempt to overcome the obstacles, regardless of whether that attempt is positive or negative.

People who have self-efficacy also have an internal locus of control (Zimmerman & Cleary, 2001). They believe that they have control over events that happen, rather than being controlled by external forces. It has been found that disadvantaged youth with an internal locus of control have better outcomes than those who believe that one's life events are influenced by external factors (Werner & Smith, 1992). While an internal locus of control is obviously very important, self-efficacy encapsulates not only an

internal locus of control, but also a sense of confidence that the individual can elicit positive outcomes (Zimmerman & Cleary, 2001).

Self-efficacy impacts whether an individual thinks optimistically or pessimistically (Bandura, 2001). Self-efficacy is rooted in one's beliefs about their ability to solve problems or complete a task. If an individual does not believe they can solve problems, they will not exert effort to fix the problems, and they are often unhappy because the problem will likely persist. On the other hand, if a person does believe they can solve problems (which in itself is an optimistic belief), they will exert effort into fixing the problem, which may solve the problem and lead to satisfaction. If the person with self-efficacious beliefs does not succeed, they will likely try again to solve the problem because they are resilient to adversity (Bandura, 2001). Self-efficacy does not indicate how they will attempt to solve the problem.

Self-efficacy has been conceptualized as an antecedent due to its proactive impact on performance and its importance in the self-evaluation that takes place after a performance (Zimmerman & Cleary, 2001; Usher & Pajares, 2008). At the same time, self-efficacy is thought to derive from previous mastery experiences, as well from vicarious experiences (i.e. observation of others), persuasion (such as verbal encouragement), and physiological reactions (such as an increase in heart rate while performing). The experience of a success raises self-efficacy, while the experience of a failure lowers self-efficacy (Usher & Pajares, 2008; Zimmerman & Cleary, 2001). Since self-efficacy is perceived as being both an antecedent thought and a consequential belief, it is better thought of as an ever-evolving process. Self-efficacy is not a fixed trait because it is continually being impacted by the environment. Family, school experiences,

and peer networks can all impact self-efficacy (Schunk & Meece, 2001). According to the integrative model (Garcia Coll et al. 1996; Garcia Coll & Garrido, 2000), it is likely that factors such as social position, social stratification mechanisms, and segregation may also impact self-efficacy in at-risk minority girls.

Previous research on self-efficacy has not yielded a clear developmental picture, most likely due to differing contextual factors. Some researchers have found a decline in self-efficacy beginning at the middle school transition, while some have found an increase in self-efficacy (Schunk & Meece, 2001). As discussed earlier, the middle schools years can be difficult ones, characterized by a lack of pro-social behaviors. In considering the various contextual factors that influence the risk and protective factors among at-risk ethnic minority girls, it may be interesting to study the relationship between self-efficacy and pro-social behaviors among this population. Since self-efficacy is strongly related to psychosocial well-being (Vieno, Santinello, Pastore, & Perkins, 2007), it may be helpful to focus on building self-efficacy in interventions to help benefit the psychosocial well-being of middle school ethnic minority girls, in hopes of helping them cope with the struggles they face.

Social-Emotional Competence

Social-emotional competence is a rather broad term referring to acquired social and emotional skills. The Collaborative for Academic, Social, and Emotional Learning (CASEL), described social and emotional competence as involving key emotional, cognitive, and behavioral skills across various settings (Elias & Haynes, 2008). More specifically, a child with social and emotional competence has skills that facilitate social interaction with peers (Elias & Haynes, 2008). Social-emotional competence may be

evident through community and activity involvement, peer relations, appropriate behavior in the classroom, and self-regulation. Schools often focus on building social-emotional competence for its immediate benefits, such as pro-social behaviors in the classroom, academic success, and a positive school climate, as well as long-term benefits such as teaching students to be effective citizens of the world (Payton, et al., 2008). Social-emotional competence is a protective factor and is believed to help children to navigate struggles they may face in life. Resilience is associated with social-emotional competence displayed among peers, in the classroom, in the community, and at home (Masten, 1998; Werner & Smith, 1992).

While traditional research conceptualizes social-emotional competence as positive social behaviors, some kinds of social-emotional competence may in fact be expressed negatively. Middle school girls often engage in relational aggression. For success in relational aggression, a student needs a high level of certain social-emotional competencies to determine what social assaults will impact others in a negative way (Underwood, 2003).

“Stinging” is a term used among children to identify verbal insults. It is often used to influence the social hierarchy. The students who engage in “stinging” are able to identify their social threats and use this form of relational aggression to change the social dynamic. This, again, takes competence. It is important to recognize the strengths that exist among the negative behaviors when considering the competencies of at-risk middle school minority girls. School psychologists should see those strengths and work on interventions to help the students use their strengths in a way that improves the child’s chances of success inside and outside of school.

Efficacy has been linked both to the presence of positive behaviors and the relative absence of problem behaviors in the classroom. Research has shown that self-efficacy is associated with lower levels of problem behaviors (Spoth, 1999). Problem behaviors measured in studies have varied, yet there was a link between these problem behaviors and self-efficacy. Bandura, Caprara, Barbaranelli, Gerbino, and Pastorelli (2003) found that adolescents who had emotional self-efficacy, also refrained from delinquent behaviors. Chung and Elias (1996) found that problem behaviors are less likely to be displayed in adolescents who also experience high academic self-efficacy, active involvement in non-academic activities, and more positive life events. Based on self-report, Vera, Shin, Montgomery, Mildner, and Speight (2004) found that high self-efficacy predicted verbally assertive conflict resolution strategies among urban middle school students, rather than aggressive conflict resolution strategies. This study will determine if these overall trends still exist in the unique context which surrounds at-risk ethnic minority middle school girls, while integrating the teacher's perspective of students' social-emotional competence.

The Present Study

Self-efficacy and social-emotional competence are associated with resilience (Werner & Smith, 1992), yet a causal relationship has not been found between self-efficacy and social-emotional competence. The present study explores the relationship of Self-Efficacy Beliefs and Social-Emotional Competence in a population of at-risk ethnic minority middle school girls. It is distinctive because it will look at the direction of relationship of these variables and it will integrate the teacher's perspective of

students' social-emotional competence, rather than relying only on student self-report.

The study is organized around two research questions:

1. *What is the relationship between Self-Efficacy Beliefs and Social-Emotional Competence?* Based on the prior research, it is hypothesized that there will be a positive relationship between Self-Efficacy Beliefs and Social-Emotional Competence in the at-risk population that is the focus of this study.
2. *What is the direction of the relationship between Self-Efficacy Beliefs and Social-Emotional Competence? Specifically, do Self-Efficacy Beliefs tend to lead to greater Social-Emotional Competence, or do higher levels of Social-Emotional Competence lead to greater Self-Efficacy Beliefs?* The implication in the literature cited for this study is that children's competence follows their having a sense of self-efficacy and optimism. If optimism and self-efficacy are not present, even skills that they do possess are less likely to be expressed, and therefore not recognized by others. Therefore, it is hypothesized that changes in self-efficacy and optimism, as defined by the Self-Efficacy Beliefs construct will lead to changes in the Social-Emotional Competence construct.

Few studies have used a cross-lagged panel design, which helps give insight into the causal relationship between factors. No study has used a cross-lagged panel design to determine a causal relationship between Self-Efficacy Beliefs and Social-Emotional Competence in at-risk ethnic minority middle school girls. Burns et al. (2003) used this approach to determine if cognitive changes early in treatment would produce later changes in outcome. Reyes, Elias, Chu, Young, and Mocerri (under review) used a cross-lagged panel design to understand the causal relationship between community violence,

social skills, internalizing and externalizing behaviors, and academic competence among Latino and African-American children. Among their findings was that exposure to community violence was a predictor of behavioral outcomes, rather than lower competence levels leading to greater exposure to community violence. This study is relevant, not only for its design approach and target population, but also to what it contributes to the understanding of how greater contextual risk factors such as community violence can impact the development among ethnic minority children, especially in the area of social-emotional competence.

It is hoped that this current study will contribute further to the research in at-risk populations. It may inform school psychologists about the nontraditional expressions of resilience that may be the norm for this population. In addition, it may inform school psychologists about how to most effectively build interventions to maximize both constructs in order to build overall resilience among this particular population.

CHAPTER III

METHODS

Participants and Setting

The participants were eighteen 7th and 8th grade girls attending a multi-ethnic suburban New Jersey middle school during the 2009-2010 school year. During the 2008-2009 school year, 66% of the students in this district were Hispanic, 22% were Black, 11% were White, 1% Asian/Pacific Islander, and less than 1% were American Indian/Alaskan Native. Of these students, 72% were eligible for the free or reduced-cost lunch program.

The eighteen participants were divided into two groups based on their grade. The seventh grade group was comprised of eight students initially, but seven students ($N = 7$) completed the program; the eighth grade group began with 10 students but nine ($N = 9$) students finished the program. Two Hispanic students who changed schools did not complete the program. As a result, they were dropped from this study. At the time of the initial data collection, the mean age of the remaining sixteen participants was 13 years and 2 months. Of the sixteen participants, 50% were African-American, 25% were

Latina, 12.5% were Caucasian, and 12.5% were biracial. Of the two biracial students, both were partially Latina.

These students were considered “at-risk” by their teachers and administrators (i.e. principal, dean of students) because they lacked self-esteem, were disengaged from school, or displayed aggressive behaviors. These girls were referred to a secondary-level intervention program to help provide them with additional skills and protective factors to offset their risk factors and prepare them for their transition into high school. The program combines emerging findings on social-emotional character development, student voice, empowerment, leadership, and service learning to offer a strong, positive alternative approach to dealing with at-risk girls (Hamed, Reyes, Mocerri, Morana, & Elias, 2011). This program offers 1 hour weekly after-school sessions during the school year. Trained Rutgers University students (comprised of graduate and undergraduate level students) facilitated two groups, one for 7th graders and one for 8th graders. This project was reviewed by the Rutgers IRB; parents gave informed consent, and children gave their assent. The participation rate was 95%, i.e. one identified child did not get parental permission.

Measures

Self-Efficacy Beliefs. The Resiliency Scales for Children and Adolescents (RSCA; Prince-Embury, 2007) consists of three scales: Sense of Mastery, Sense of Relatedness, and Emotional Reactivity. The three Resiliency Scales may be used together or alone (Prince-Embury, 2008). The Sense of Mastery Scale was administered in this study. The scale includes 20 items that take about 5 minutes. Children rate themselves on a 5-point scale (0=Never to 4=Almost Always) to assess their optimism, self-efficacy, and

adaptability. While the scale has good reliability ($\alpha = .89$), the subscales that comprise the scale have varying reliability (Prince-Embury, 2007). For this study, the optimism and self-efficacy subscales were used to measure self-efficacy beliefs. In the present sample, Cronbach's alpha for both the optimism subscale ($\alpha = .79$) and self-efficacy ($\alpha = .69$) subscale were both acceptable for an exploratory study. Self-Efficacy Beliefs reflect both optimism as well as a belief in one's abilities. For the purposes of this study, the items on these two separate subscales (Optimism Subscale and Self-Efficacy Subscale) both encapsulate the larger construct of Self-Efficacy Beliefs. Examples of items include, "I can make good things happen," "I do things well," "I make good decisions," and "Good things will happen to me."

Social-Emotional Competence. The Devereux Student Strengths Assessment-Mini (DESSA-mini; DESSA; LeBuffe, Shapiro, & Naglieri, 2009) is an 8 item measure that takes about 2-3 minutes per child to complete. The DESSA-mini assesses social-emotional strengths and resilience (i.e., positive behaviors) of the student as perceived by the teacher, through the use of the Social Emotional composite score. Each item is on a 5-point Likert scale (0 = Never to 4 = Very Frequently). There are four equivalent versions of the DESSA-mini ($\alpha = .91-.92$), which allows for repeated assessment (LeBuffe, Shapiro, & Naglieri, 2009). In the present sample, Cronbach's alpha for the DESSA-mini ($\alpha = .92$) was very good. The scale asks the teacher to consider how often the student showed various examples of social-emotional competence in the classroom during the past 4 weeks. Examples of socially competent behaviors include, showing appreciation of others, making a suggestion or request in a polite way, and encouraging

positive behavior in others. For this study, this measure will be used to measure Social-Emotional Competence.

The Social Skills Domain from the Social Skills Rating System (SSRS-T; Gresham & Elliott, 1990) was adapted for this study. This measure contains 13 items and takes about 3-4 minutes per child to complete. The Social Skills Scale is comprised of 3 subscales (Cooperation Subscale, Assertion Subscale, and Self-Control Subscale). The Cooperation Subscale is comprised of four items which assesses cooperative behaviors such as helping, sharing, following rules, and complying with directions. The Assertion Subscale is comprised of four items which assesses assertive behaviors such as asking for help, introducing oneself, and responsiveness to others. The Self-Control subscale is comprised of five items and assesses conflict and non-conflict responses such as responding to bullying and compromise. The Social Skills Scale on the SSRS-T requires teachers to rate specific behaviors on a 3-point scale (0 = Never, 1 = Sometimes, 2 = Very often) to indicate the frequency of the behavior. The SSRS-T has adequate reliability ($\alpha = .73-.88$) and has been recommended as among the strongest teacher-rating measures of social-emotional competence (Haggerty, Elgin, & Woolley, 2011). In the present sample, Cronbach's alpha for the SSRS-T ($\alpha = .96$) was very good. For the purposes of this study, the SSRS-T, along with the DESSA-mini, assesses the construct of Social-Emotional Competence.

Procedure

The students were asked to complete a survey to help the school evaluate the impact of the intervention program. All surveys were completed during the second week of the intervention, as well as during the week prior to completion of the program. The

participants were advised that the results were confidential. Students completed the Sense of Mastery Scale from the Resiliency Scale for Children and Adolescents (Prince-Embury, 2007).

Teachers completed the Devereux Student Strengths Assessment-Mini; DESSA (LeBuffe, Shapiro, & Naglieri, 2009) and the Social Skills Rating Scale (Gresham & Elliott, 1990). Teachers were chosen based on amount of contact with that student throughout the school day. Teachers independently completed the surveys during the second week of the intervention, as well as during the week prior to completion of the program. Teachers were advised that all results were confidential.

CHAPTER IV

RESULTS

Descriptive Information on Study Variables

Mean scaled scores and standard deviations for all variables at Time 1 for the entire sample are presented in Table 1. The mean scaled score on the Optimism Subscale ($M = 17.40, SD = 4.31$) fell within the Average range. The mean scaled score on the Self-Efficacy Subscale ($M = 25.07, SD = 4.52$) fell within the Average range. The mean scaled score on the DESSA-mini ($M = 18.51, SD = 5.20$) fell within the Typical range. The mean scaled score on the Social Skills Subscale ($M = 43.94, SD = 13.28$) fell within the Low range.

Mean scaled scores and standard deviations for all variables at Time 2 for the entire sample are also presented in Table 1. The mean scaled score on the Optimism Subscale ($M = 19.25, SD = 4.28$) fell within the Average range. The mean scaled score on the Self-Efficacy Subscale ($M = 27.10, SD = 4.82$) fell within the Average range. The mean scaled score on the DESSA-mini ($M = 14.19, SD = 7.04$), fell within the Low range. The mean scaled score on the Social Skills Subscale ($M = 36.38, SD = 14.57$) fell within the Low range.

Missing Data

Two students moved to a new school and consequently dropped out of the intervention program. Time 2 data could not be obtained, but Time 1 data for these participants are complete. For these two students, the mean scaled score on the Optimism Subscale ($M = 16.00$, $SD = 2.82$), fell within the Below Average range. The mean scaled score on the Self-efficacy Subscale ($M = 29.50$, $SD = 12.02$) fell within the Average range. The mean scaled score on the DESSA-mini ($M = 25.50$, $SD = 4.95$) fell within the Typical range. The mean scaled score on the Social Skills Subscale ($M = 21.25$, $SD = 2.47$) fell within the Low range. Compared to the rest of this sample's scores at Time 1, as presented earlier, these two participants only varied in the area of optimism.

Correlations

Table 2 presents Pearson correlations among all variables at Time 1. Table 3 presents Pearson correlations among all variables at Time 2. It was predicted that there would be a positive relationship between Self-Efficacy Beliefs (as measured by the Self-Efficacy and Optimism Subscales) and Social-Emotional Competence (as measured by the DESSA-mini and SSRS-T) in the at-risk population that is the focus of this study. The overall pattern of correlations was inconsistent with this hypothesis.

Cross lagged panel analyses

Cross lagged panel analyses (CLPA) were used to examine whether or not an increase in Self-Efficacy Beliefs is associated with an increase in Social-Emotional Competence across time. Four variables were generated from these two variables over time (Self-Efficacy Beliefs Time 1, Self-Efficacy Beliefs Time 2, Social-Emotional Competence Time 1, Social-Emotional Competence Time 2). Six correlations can be

computed from these variables (2 autocorrelations, 2 synchronous correlations, and 2 cross-lagged correlations) (Kenny, 1975). This will determine the causal priority between the pair of variables that seem to mutually impact one another (Taris, 2000). For example, if Self-Efficacy Beliefs (X) causes a change in Social-Emotional Competence (Y), then Self-Efficacy Beliefs Time 1 (X_1) and Social-Emotional Competence Time 2 (Y_2) should be significantly stronger than the correlations between Social-Emotional Competence Time 1 (Y_1) and Self-Efficacy Beliefs Time 2 (X_2).

Comparing cross-lagged correlations alone can be misleading, since this approach does not allow for the researcher to control for extraneous variance (Reyes, Elias, Chu, Young, and Mocerri, under review; Taris, 2000). Therefore, hierarchical regression is used to control for the impact that Y_1 may have on the association between X_1 and X_2 . Two regression equations are computed. First, Y_2 is regressed onto X_1 , after controlling for the effects of Y_1 and X_2 . Second, X_2 is regressed onto Y_1 , after controlling for the effects of Y_2 and X_1 . This allows for the standardization regression estimates of the effect of X_1 on Y_2 , and of Y_1 on X_2 to be compared to determine a directional influence (Burns et al., 2003; Reyes, Elias, Chu, Young, and Mocerri, under review; Taris, 2000). This procedure has been utilized in the current study. Figure 1 depicts the cross-lagged panel analysis model for this study.

Optimism Subscale and DESSA-mini. Figure 2 demonstrates the autocorrelations, synchronous correlations, and cross-lagged correlations between the Optimism Subscale and DESSA-mini across two time points. After controlling for Time 1 DESSA-mini and Time 2 Optimism Subscale, Time 1 Optimism Subscale did not emerge as a significant predictor explaining Time 2 DESSA-mini ($\beta = -.43$, $t = -1.29$, $p = .28$). Time 1 DESSA-

mini did not emerge as a significant predictor in the model explaining Time 2 Optimism Subscale ($\beta = -.13, t = -.53, p = .61$). Results do not suggest that a directional influence of the Optimism Subscale on the DESSA-mini is evident. Results are presented in Table 4.

Optimism Subscale and SSRS-T. Figure 3 demonstrates the autocorrelations, synchronous correlations, and cross-lagged correlations between the Optimism Subscale and SSRS-T across two time points. After controlling for Time 1 SSRS-T and Time 2 Optimism Subscale, Time 1 Optimism Subscale did not emerge as a significant predictor explaining Time 2 SSRS-T ($\beta = -.39, t = -1.30, p = .22$). Time 1 SSRS-T did not emerge as a significant predictor in the model explaining Time 2 Optimism Subscale ($\beta = -.35, t = -1.40, p = .19$). Results do not suggest that a directional influence of the Optimism Subscale on the SSRS-T is evident. Results are presented in Table 5.

Self-Efficacy Subscale and DESSA-mini. Figure 4 demonstrates the autocorrelations, synchronous correlations, and cross-lagged correlations between the Self-Efficacy Subscale and DESSA-mini across two time points. After controlling for Time 1 DESSA-mini and Time 2 Self-Efficacy Subscale, Time 1 Self-Efficacy Subscale did not emerge as a significant predictor explaining Time 2 DESSA-mini ($\beta = -.29, t = -.89, p = .39$). Time 1 DESSA-mini did not emerge as a significant predictor in the model explaining Time 2 Self-Efficacy Subscale ($\beta = .08, t = .24, p = .81$). Results do not suggest that a directional influence of the Self-Efficacy Subscale on the DESSA-mini is evident. Results are presented in Table 6.

Self-Efficacy Subscale and SSRS-T. Figure 5 demonstrates the autocorrelations, synchronous correlations, and cross-lagged correlations between the Self-Efficacy Subscale and SSRS-T across two time points. After controlling for Time 1 SSRS-T and

Time 2 Self-Efficacy Subscale, Time 1 Self-Efficacy Subscale did not emerge as a significant predictor explaining Time 2 SSRS-T ($\beta = -.32, t = -1.14, p = .28$). Time 1 SSRS-T did not emerge as a significant predictor in the model explaining Time 2 Self-Efficacy Subscale ($\beta = -.02, t = -.06, p = .95$). Results do not suggest that a directional influence of the Self-Efficacy Subscale on the SSRS-T is evident. Results are presented in Table 7.

Nonparametric Analyses

Nonparametric analyses were used to examine the patterns of change. This is a nonparametric version of the cross-lagged panel design, with the focus on individual, as a complement to the analysis that focuses on variables. These analyses considered theoretically significant change as well as any change in scores.

Crosstab analyses. Crosstab analyses were conducted to determine the relationship between gains in Self-Efficacy Belief scores and gains in Social-Emotional Competence scores of individuals. To determine a theoretical change in a given measure, individual scores were compared over time. A positive change was considered theoretically significant, if the score at Time 2 was in a theoretical level higher than where the score fell at Time 1. In order for a positive change to be considered theoretically significant in the Optimism Subscale or the Self Efficacy Subscale, a score must have changed from the Low range to the Below range, the Below range to the Average range, the Average range to the Above Average range, or from the Above Average range to the High range over time. In order for a positive change to be considered theoretically significant in the DESSA-mini, a score must have changed from the Need range to the Typical range or from the Typical range to the Strength range over

time. In order for a positive change to be considered theoretically significant in the SSRS-T, a score must have changed from the Below Average range to the Average range or from the Average range to the Above Average range over time. Table 8 displays the relationship of theoretically significant gains in the Optimism Subscale and DESSA-mini over time. Table 9 displays the relationship of theoretically significant gains in the Optimism Subscale and SSRS-T over time. Table 10 displays the relationship of theoretically significant gains in the Self-Efficacy Subscale and DESSA-mini over time. Table 11 displays the relationship of theoretically significant gains in the Self-Efficacy Subscale and SSRS-T over time.

Additional crosstab analyses were conducted to determine the relationships between any increase in score in Self-Efficacy Belief scores and any increase in score in Social-Emotional Competence scores. Table 12 displays the relationship of gains in the Optimism Subscale and DESSA-mini over time. Table 13 displays the relationship of gains in the Optimism Subscale and SSRS-T over time. Table 14 displays the relationship of gains in the Self-Efficacy Subscale and DESSA-mini over time. Table 15 displays the relationship of gains in the Self-Efficacy Subscale and SSRS-T over time.

Overall, there was a pattern in the data that suggested an asymmetric relationship between gains in optimism and gains in both Social-Emotional Competence measures (DESSA-mini and SSRS-T). That is, gains in social competence were unlikely to occur without gains in optimism, but gains in optimism were not necessarily accompanied by gains in social competence. The same pattern was not found for self-efficacy.

Chi-square test of independence. Numerous chi-square tests of independence were performed to examine the relationship between theoretically significant gains in the Self-Efficacy Beliefs scores and the Social-Emotional Competence scores over time. Table 16 displays the results of these analyses. The relationship between the Optimism Subscale and DESSA-mini was not significant. The relationship between the Optimism Subscale and SSRS-T showed a tendency toward being significant. The relationship between the Self-efficacy Subscale and DESSA-mini was not significant. The relationship between the Self-efficacy Subscale and SSRS-T was not significant.

Additional chi-square tests of independence were performed to examine the relationship between *any* gains in the Self-Efficacy Beliefs scores and *any* gains in Social-Emotional Competence scores, contrasted with no gains. Table 16 also displays the results of these analyses. The relationship between the Optimism Subscale and DESSA-mini was significant. The relationship between the Optimism Subscale and SSRS-T was not significant. The relationship between the Self-efficacy Subscale and DESSA-mini was not significant. The relationship between the Self-efficacy Subscale and SSRS-T was not significant.

CHAPTER V

DISCUSSION

Building on prior research, this study examined the relationship between Self-Efficacy Beliefs and Social-Emotional Competence in at-risk middle school girls. Two hypotheses were tested in this study: 1) There will be a positive relationship between Self-Efficacy Beliefs and Social-Emotional Competence for this at-risk population. 2) Changes in Self-Efficacy Beliefs will lead to changes in Social-Emotional Competence. A significant positive relationship between Self-Efficacy Beliefs and Social-Emotional Competence did not emerge. Changes in self-efficacy or optimism did not lead to significant changes in social skills or pro-social behaviors in the classroom. However, there were some data that suggested a relationship between optimism and Social-Emotional Competence such that all children showing any gains in Social-Emotional Competence also showed gains in optimism. Not all gains in optimism led to gains in Social-Emotional Competence, however, which implies that change in optimism may be necessary but not sufficient for change in Social-Emotional Competence. This was found for both indicators of Social-Emotional Competence and was not found at all for self-efficacy.

Optimism may play a large role in students' beliefs and behaviors. School psychologists should pay attention to further research that may support the significance of optimism in the development of self-efficacy, and social-emotional competence. Optimism training can easily be integrated into individual counseling, group interventions, or even the classroom.

Without intervention, ethnic minority middle school girls may be resistant to optimistic ideas. When considering the impact of their minority status and the chronic daily struggles they may face, they may naturally develop a more pessimistic outlook. For this reason, school psychologists should be culturally sensitive when evaluating optimism and when first attempting to build optimism within this population. Providing these students with experiences of success, building an optimistic school climate, providing them with positive role models, helping them plan for a successful future, and building their self-esteem, may be helpful in building optimism in this specific population. School psychologists should be willing to attempt multiple optimism interventions across time, for the greatest impact.

The correlations among different variables at the same time (synchronous correlations) were consistently low throughout the study. While this was quite surprising, it indicated that there was not a strong relationship among these variables at any given time. Considering this, it is not surprising that relationships did not emerge among the variables over time.

Some strong correlations did emerge with implications for intervention. The Optimism Subscale, Self-efficacy Subscale, and SSRS-T, were significantly correlated from Time 1 to Time 2. The DESSA-mini was almost significantly correlated from Time

1 to Time 2. This has important implications for school psychologists who work with at-risk ethnic minority middle school girls. From the data collected, the strongest relationships were among the same variable over time. So, if you want to increase self-efficacy, use self-efficacy interventions. One might infer that self-efficacy interventions would be most likely to lead to changes in self-efficacy and social skills interventions would most likely to produce changes in social skills. The previous finding would add the caveat that social-emotional skill gains are most likely if also accompanied by interventions related to optimism. Perhaps this reflects the idealism of early adolescents and their willingness to be positive about their future when this is conveyed to them by individuals for whom they have respect.

Implications for Future Research

Various implications for future research emerged from this study. Future research will need to have a larger sample size, leading to stronger power. This study suffered from a lack of power to find even large effects. However, this is frequently the case with school-based studies of subgroups that are not large in number. There may very well have been a positive relationship between Self-Efficacy Beliefs and Social-Emotional Competence, and changes in Self-Efficacy Beliefs may lead to changes in Social-Emotional Competence. Unfortunately, this study could not detect such changes definitively, even if they existed.

This study examined the relationship of Self-Efficacy Beliefs and Social-Emotional Competence in a unique population; at-risk middle school girls. This is an important contribution that should be built upon. More research should assess the ways in which different cultural variables may impact our current understanding of cognitive,

social, and emotional, constructs in students. Adding variables related to culture, such as acculturation and appropriate assessment of ethnic beliefs, might give greater insight into minority girls' views of self-efficacy and optimism and the amenability of these beliefs to change.

The cross-lagged panel analyses assess directional influence over time. For this study, all data was collected during one school year. Future research may benefit from collecting data over a longer period of time to get a better sense of the relationships between Self-Efficacy Beliefs and Social-Emotional Competence. It is possible that a relationship does exist, but was not evident within the short period of this study.

Conclusion

In essence, this study took a strength-based approach by examining the relationship between positively directed beliefs and positively directed behaviors in a population plagued by risk factors and negative behaviors. The most important message from this study comes from its intent. In order to study a population, it is important to understand the culture of that population by taking a curious and open approach. School psychologists may at times be dissatisfied with the behaviors displayed by ethnic minority middle school girls, but they, like all people, do what is adaptive. In practice, a strength-based approach encourages students to live up to your positive expectations and begin to discover the good things within themselves, which make them the unique and beautiful individuals they are.

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Table 1
Descriptive Statistics for Variables

	<i>N</i>	<i>Mean</i>	<i>SD</i>	Possible Range*
Optimism Subscale				0-28
Time 1	16	17.40	4.31	
Time 2	16	19.25	4.28	
Self-efficacy Subscale				0-40
Time 1	16	25.07	4.52	
Time 2	16	27.10	4.82	
DESSA-mini				0-32
Time 1	14	18.51	5.20	
Time 2	16	14.19	7.04	
SSRS-T				0-60.06**
Time 1	15	43.94	13.28	
Time 2	16	36.38	14.57	

*indicates the lowest and highest raw scores possible on these measures

**prorated scale

Table 2
Pearson Correlations at Time 1

	1	2	3	4
1. Optimism Subscale Time 1	--			
2. Self-efficacy Subscale Time 1	.34	--		
3. DESSA-mini Time 1	.29	.37	--	
4. SSRS-T Time 1	-.05	-.05	.39	--

*Note: *.05 < p < .10, **p < .05, ***p < .01*

Table 3
Pearson Correlations at Time 2

	1	2	3	4
1. Optimism Subscale Time 2	--			
2. Self-efficacy Subscale Time 2	.37	--		
3. DESSA-mini Time 2	.37	.23	--	
4. SSRS-T Time 2	.09	-.03	.74***	--

*Note: **.05 < p < .10, **p < .05, ***p < .01*

Table 4
 Cross-lagged regressions for Optimism Subscale and DESSA-mini

Variables	R^2	ΔR^2	F	df	B	SEB	β	p
Outcome: Time 2 DESSA-mini								
Step 1	.27	.27	1.98	2				
Time 1 DESSA-mini					.50	.36	.37	.19
Time 2 Optimism Subscale					.46	.44	.28	.31
Step 2	.37	.10	1.95	3				
Time 1 Optimism Subscale					.70	.54	-.43	.23
Outcome: Time 2 Optimism Subscale								
Step 1	.52	.52	5.98	2				
Time 2 DESSA-mini					.21	.13	.34	.13
Time 1 Optimism Subscale					.62	.21	.62	.01
Step 2	.53	.013	3.82	3				
Time 1 DESSA-mini					-.11	.21	-.13	.61

B = Unstandardized partial regression coefficient. $SE B$ = Standard error of unstandardized partial regression coefficient. β = Standardized partial regression coefficient.

Table 5
 Cross-lagged regressions for Optimism Subscale and SSRS-T

Variables	R^2	ΔR^2	F	df	B	SEB	β	p
Outcome: Time 2 SSRS-T								
Step 1	.34	.34	3.14	2				
Time 1 SSRS-T					.64	.26	.59	.03
Time 2 Optimism Subscale					.29	.35	.20	.42
Step 2	.43	.09	2.78	3				
Time 1 Optimism Subscale					-.56	.43	-.39	.22
Outcome: Time 2 Optimism Subscale								
Step 1	.44	.44	4.65	2				
Time 2 SSRS-T					.12	.15	.18	.42
Time 1 Optimism Subscale					.66	.22	.66	.01
Step 2	.52	.09	4.01	3				
Time 1 SSRS-T					-.26	.19	-.35	.19

B = Unstandardized partial regression coefficient. $SE B$ = Standard error of unstandardized partial regression coefficient. β = Standardized partial regression coefficient.

Table 6
 Cross-lagged regressions for Self-Efficacy Subscale and DESSA-mini

Variables	R^2	ΔR^2	F	df	B	SEB	β	p
Outcome: Time 2 DESSA-mini								
Step 1	.20	.20	1.34	2				
Time 1 DESSA-mini					.55	.39	.41	.19
Time 2 Self-efficacy Subscale					.13	.42	.09	.77
Step 2	.26	.06	1.15	3				
Time 1 Self-efficacy Subscale					-.46	.51	-.29	.39
Outcome: Time 2 Self-efficacy Subscale								
Step 1	.31	.31	2.52	2				
Time 2 DESSA-mini					.16	.17	.23	.38
Time 1 Self-efficacy Subscale					.55	.27	.51	.06
Step 2	.32	.01	1.55	3				
Time 1 DESSA-mini					.07	.30	.08	.81

B = Unstandardized partial regression coefficient. $SE B$ = Standard error of unstandardized partial regression coefficient. β = Standardized partial regression coefficient.

Table 7
 Cross-lagged regressions for Self-Efficacy Subscale and SSRS-T

Variables	R^2	ΔR^2	F	df	B	SEB	β	p
Outcome: Time 2 SSRS-T								
Step 1	.31	.31	2.67	2				
Time 1 SSRS-T					.61	.26	.55	.04
Time 2 Self-efficacy Subscale					-.06	.31	-.05	.85
Step 2	.38	.07	2.25	3				
Time 1 Self-efficacy Subscale					-.44	.39	-.32	.28
Outcome: Time 2 Self-efficacy Subscale								
Step 1	.28	.28	2.27	2				
Time 2 SSRS-T					.09	.20	.12	.64
Time 1 Self-efficacy Subscale					.58	.27	.55	.06
Step 2	.28	.00	1.39	3				
Time 1 SSRS-T					-.02	.26	-.02	.95

B = Unstandardized partial regression coefficient. $SE B$ = Standard error of unstandardized partial regression coefficient. β = Standardized partial regression coefficient.

Table 8

Participant theoretically significant gains in Optimism Subscale and DESSA-mini

		DESSA-mini		
		Gain	No Gain	
Optimism	Gain	7.14%	35.71%	42.85%
	No Gain	0	57.15%	57.15%
		7.14%	92.86%	100%

N=14

Table 9

Participant theoretically significant gains in Optimism Subscale and SSRS-T

		SSRS-T		
		Gain	No Gain	
Optimism	Gain	13.33%	26.67%	40%
	No Gain	0	60%	60%
		13.33%	86.67%	100%

N=15

Table 10

Participant theoretically significant gains in Self-Efficacy Subscale and DESSA-mini

		DESSA-mini	
		Gain	No Gain
Self-Efficacy	Gain	7.14%	57.14%
	No Gain	0	42.86%
		7.14%	100%

N=14

Table 11

Participant theoretically significant gains in Self-Efficacy Subscale and SSRS-T

		SSRS-T	
		Gain	No Gain
Self-Efficacy	Gain	6.67%	53.33%
	No Gain	6.67%	46.67%
		13.33%	100%

N=15

Table 12
Participant gains in Optimism Subscale and DESSA-mini

		DESSA-mini	
		Gain	No Gain
Optimism	Gain	28.57%	57.14%
	No Gain	0	42.86%
		28.57%	100%

N=14

Table 13
Participant gains in Optimism Subscale and SSRS-T

		SSRS-T		
		Gain	No Gain	
Optimism	Gain	13.33%	40%	53.33%
	No Gain	0	46.67%	46.67%
		13.33%	86.67%	100%

N=15

Table 14
Participant gains in Self-Efficacy Subscale and DESSA-mini

		DESSA-mini		
		Gain	No Gain	
Self-Efficacy	Gain	14.29%	50%	64.29%
	No Gain	14.29%	21.42%	35.71%
		28.57%	71.43%	100%

N=14

Table 15
Participant gains in Self-Efficacy Subscale and SSRS-T

		SSRS-T		
		Gain	No Gain	
Self-Efficacy	Gain	6.67%	53.33%	60%
	No Gain	6.67%	33.33%	40%
		13.33%	86.67%	100%

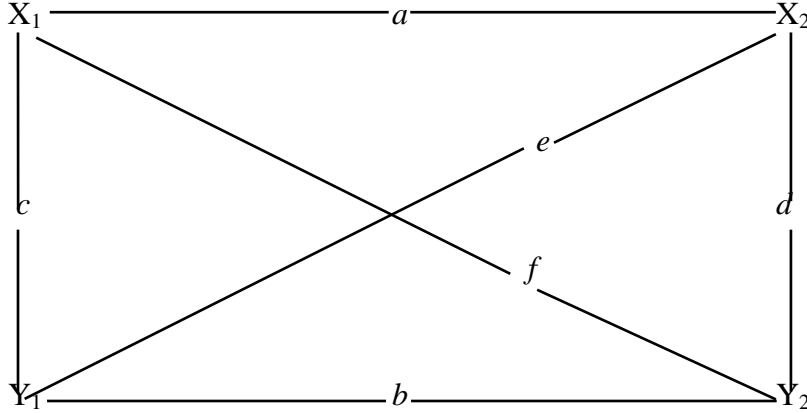
N=15

Table 16
Chi-square test of independence

Variables	X^2	df	p
Optimism Subscale & DESSA-mini			
Theoretically Significant Gain	1.44	1	.23
Any Gain	4.20	1	.04
Optimism Subscale & SSRS-T			
Theoretically Significant Gain	3.46	1	.06
Any Gain	2.02	1	.16
Self-Efficacy Subscale & DESSA-mini			
Theoretically Significant Gain	.81	1	.37
Any Gain	.50	1	.48
Self-Efficacy Subscale & SSRS-T			
Theoretically Significant Gain	.01	1	.92
Any Gain	.10	1	.76

X^2 = Pearson Chi-square

The two-time, two-variable cross-lagged panel model.



X_1 = Self-efficacy belief measure Time 1

X_2 = Self-efficacy belief measure Time 2

Y_1 = Social-emotional competence measure Time 1

Y_2 = Social-emotional competence measure Time 2

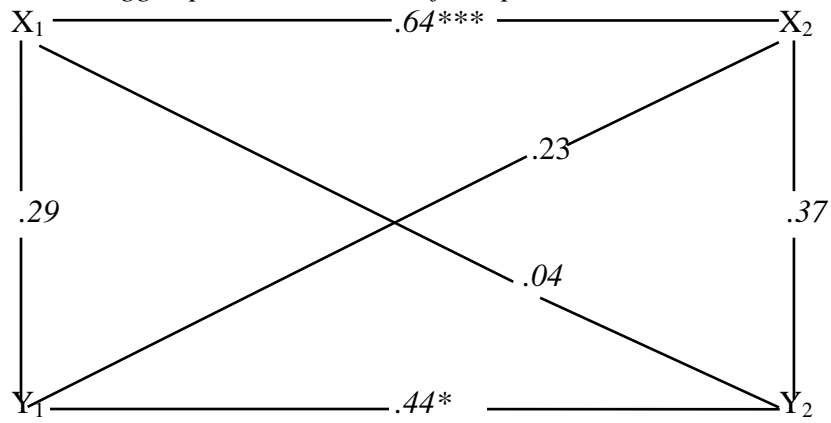
a, b = autocorrelations

c, d = synchronous correlations

e, f = cross lagged correlations

Figure 1

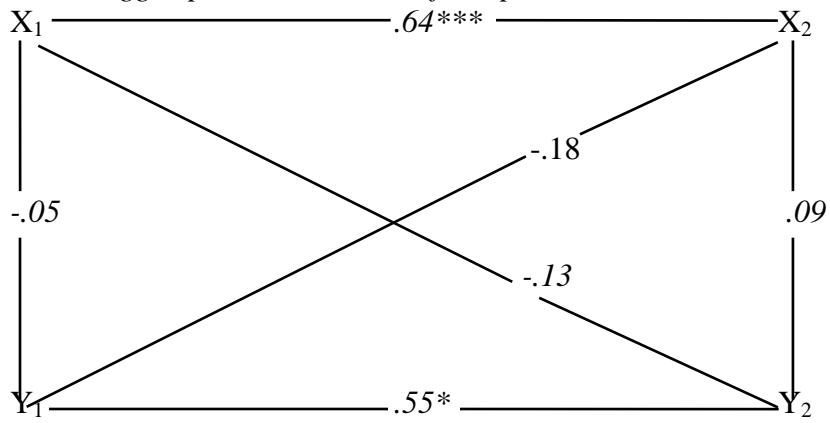
Cross-lagged panel correlations for Optimism Subscale and DESSA-mini.



Note: *.05 < p < .10, ** p < .05, *** p < .01

Figure 2

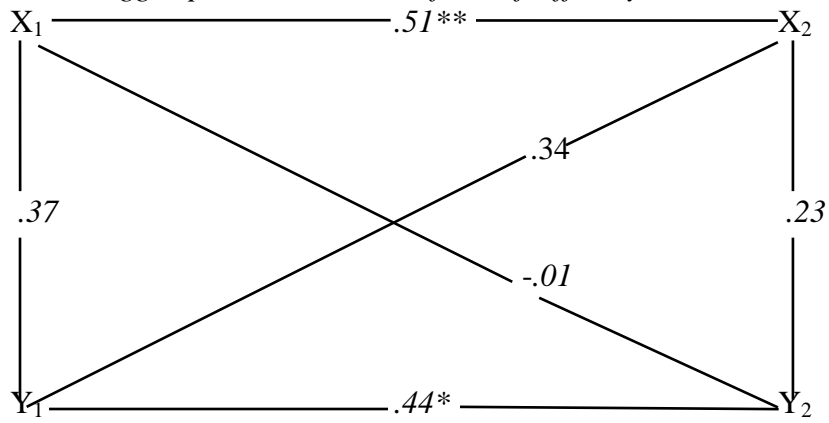
Cross-lagged panel correlations for Optimism Subscale and SSRS-T.



Note: *.05 < p < .10, ** p < .05, *** p < .01

Figure 3

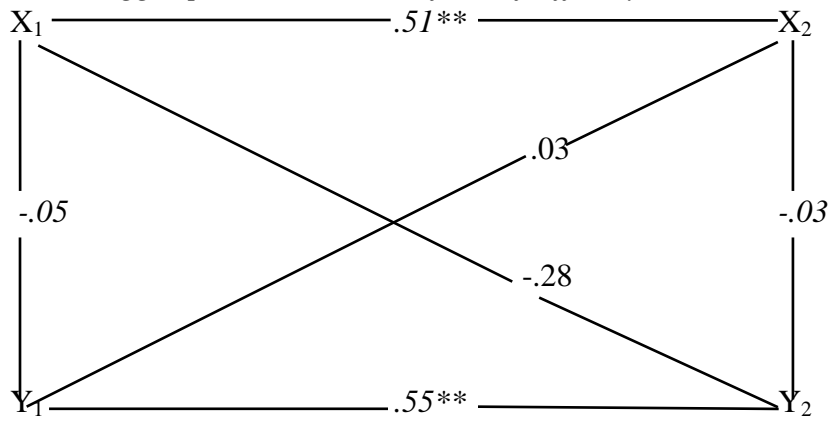
Cross-lagged panel correlations for Self-Efficacy Subscale and DESSA-mini.



Note: *.05 < p < .10, ** p < .05, *** p < .01

Figure 4

Cross-lagged panel correlations for Self-Efficacy Subscale and SSRS-T.



Note: $.05 < p < .10$, $**p < .05$, $***p < .01$

Figure 5