The Connection Project: Effects of an Adolescent Social-Bonding Intervention on Social Belongingness, Social Skills, and Mental Health

Rachel Kathleen Narr
Master of Arts, University of Virginia, 2015
Bachelor of Arts, University of California, Davis, 2011

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Joseph P. Allen, Ph.D.
Bethany A. Teachman, Ph.D.
Noelle Hurd, Ph.D.
Joanna Williams, Ph.D.

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Abstract

An experimental evaluation of a new social-emotional learning intervention, The Connection Project, was conducted to assess effects of the program on relative change in perceptions of social acceptance and belonging, social competencies, and mental health symptoms for two discrete samples of ninth grade students in the United States. Pre- and post-intervention data were collected from 367 urban public school students and 95 suburban private school students over a twelve-week intervention period. Intervention participation led to relative increases in broad social competencies as measured by peer-reports in the public school students and self-reports in the private school students. Peer reports of increased broad social competencies for the private school students also trended closely toward significance. No effects of the intervention on change in close friendships or mental health were found over this time period.

Dedication

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The Connection Project: Effects of an Adolescent Social-Bonding Intervention on Aspects of Social Belongingness, Social Skills, and Mental Health

During adolescence, trajectories for concurrent and future interpersonal abilities as well as attitudes, achievement, and mental/physical health have the potential to be set. It is well recognized that ability to connect with others is integral to these domains of functioning for adults, and more recent work has begun to demonstrate the ways in which this is true in adolescence as well (e.g., Allen, Uchino, & Hafen, 2015; Bond, Butler, Thomas, Carlin, Glover, Bowes, & Patton, 2007; Wills, 1995). In fact, peer relations during adolescence and future social experiences have a recursive relation, in part because adolescents are more sensitive to social information (positive and negative) than adults, and have stronger emotional reactions to such information. This is particularly true in middle- to late-adolescence (Somerville, 2013), suggesting that early high school could prove an ideal time to intervene in order to help set healthier trajectories for youth. At that point, teenagers are maximally sensitive to peer information, but are early enough into adolescence to allow time for changes to occur and be carried forward. During adolescence, teens who experience higher levels of positive features in their friendships are more involved in school, perceive themselves as being more accepted, and may even have higher self-esteem (Berndt, 2002; Buhrmester, 1990). Capitalizing on the positive potential inherent in the desire for close peer relations in this stage of life may provide powerful possibilities for socioemotional enhancement and improvements in multiple life domains.

Peer Relations in Adolescence

Evidence of the power of peer relations in a school context can be seen when the process goes poorly: for example, teens who are less engaged while at school are more likely to have lower grades, and to over time experience higher rates of school drop-out and lower educational

attainment (Archambault, Janosz, Morizot, & Pagani, 2009). Feelings of engagement with school are predicted by, among other factors, feeling connected to and included with peers at school (Crosnoe, 2011). In fact, students who drop out of school on average had fewer friends at school (Ellenbogen & Chamberland, 1997). In addition, teens who experience negative relations with peers not only feel rejected and become more likely to experience anxiety and depression directly, but also end up avoiding social situations in the future (Epkins & Heckler, 2011). This avoidance means they don't gain the skills to maneuver as well in social situations moving forward, thus opening the door for more rejections in the future. Interpersonal processes both lead to and result from mental health challenges, including fear of negative evaluation, depressive symptoms, and social anxiety. However, overall peer group rejection does not indiscriminately lead to internalizing problems; rather, loneliness mediates this relation (Fontaine, et al., 2009). This is advantageous given that some rejection experiences are nearly inevitable regardless of social skill level. However, youth who have high quality friendships and do *not* report high levels of loneliness are able to withstand rejections and maintain their mood and positive self-concepts. In clinical work, reducing loneliness has even been shown to reduce social anxiety disorder/social phobia, regardless of other experiences that may be ongoing (Beidel, et al., 2007; Alfano, et al., 2009). Social support and positive peer relations can be a potent form of protection for teens, improving outcomes even for those with high levels of stress in their environment, such as parental rejection, difficulty in school, or experiences of task failure (Sentse, Lindenberg, Omvlee, Ormel, & Veenstra, 2010; Stanton-Salazar & Spina, 2005; Adams, Santo, & Bukowski, 2011). Intervening to increase positive peer relations early in adolescence could bolster youth against a host of difficult experiences faced by many if not most teenagers.

This clear link between positive peer relations and adolescent achievement and mental health seems to be at least in part due to these experiences boosting adolescents' sense of self-worth. While self-esteem and self-worth may not be at the core of as many life outcomes as has at times been suggested, a clear and consistent link is found between higher feelings of self-worth and happiness, which has a range of positive life implications (Baumeister, Campbell, Krueger, & Vohs, 2003). At the core of self-esteem are relationship factors, suggesting that the judgments people make about themselves are heavily swayed by the success, or lack thereof, of interpersonal interactions (Leary & Baumeister, 2000; Leary & Downs, 1995). In fact, this relationship may be primarily unidirectional, as self-esteem has not been reliably shown to predict increases in positive interpersonal relations (Baumeister et al, 2003); however, the cyclical relations between unhappiness and difficulties in interpersonal interactions suggest alternative possibilities as well (Coyne, 1976). In adolescence, having higher levels of both self- and parent-reported social support strongly predicts relatively higher self-esteem a year later (DuBois, Burk-Braxton, Swenson, Tevendale, Lockerd, & Moran, 2002). By contrast, self-esteem is lower for adolescents who are rejected by peers, regardless of whether they are aggressive/bullies or victims of bullying (Smokowski, Guo, Rose, Evans, Cotter, & Bacallao, 2014).

In addition to its relations to general happiness, low self-esteem is a common factor across internalizing disorder categories, including depression, social anxiety, and generalized anxiety disorder (Blanco, Rubio, Wall, Wang, Jiu, & Kendler, 2014). This may help to explain why in adolescence, although there are numerous contributions to symptoms of both depression and social anxiety, social relationships and social support appear to be major drivers of both, and have concomitant important and modifiable roles (Verboom, Sijtsema, Verhulst, Penninx, &

Ormel, 2014). Both social anxiety and depression are predicted by having few friends and low intimacy in existing friendships (Epkins & Heckler, 2011). Higher rates of depressive symptoms and social anxiety are found in teens who are more behaviorally disengaged from their peers and school community, as well as in teens who are highly rejected by their peer group (Horwitz, Hill, & King, 2011; Epkins & Heckler, 2011). It is not simply having friends or companions which predicts positive outcomes, but rather, the quality of those relationships. Friendships which increase feelings of *belongingness* are, in many respects, more critical than quantifiable social support (Ueno, 2005). Objective amount of social support predicts lower depressed mood only *via* perceived belongingness (Hagerty & Reg, 1999). Helping teens to feel like they belong in the setting they're in and have a community of support with high quality friendships may be one of the most powerful ways to help buffer them against negative experiences that may lead to multiple psychosocial difficulties.

An inextricable part of positive peer relations relies on positive social skills and experiences. Children's friendships involve, at minimum, positive engagement, conflict/conflict management, shared task activity, and a variety of relationship properties such as similarity, mutual liking, and trust (Newcomb & Bagwell, 1995). While these broadband categories may apply across age groups, the relative importance of different characteristics shifts over time. During adolescence, relationship properties such as intimacy become increasingly important for forming and maintaining close peer relationships. Conflict resolution patterns among friends in adolescence also increasingly rely on negotiation and compromise rather than coercion, as is seen more commonly in younger children (Laursen, Finkelstein, & Betts, 2001). Increased opportunities for practice with conflict resolution with peers fosters increases these skills, and leads to fewer disruptions of these relationships. These improved conflict resolution strategies

are then applied in other relationships in the young person's life over time. Given that the capacity for and success with these adolescent social skills and relationship properties increase with practice, effective experiences with engaging in and working on these skills are likely to help lead to improvements in these areas broadly for teens. This process of social skill maturation can, over time, provide adolescents with opportunities for further positive interpersonal interactions and the myriad positive outcomes with which these are associated.

The benefits and drawbacks of adolescent interpersonal experiences are also not limited to the teenage years. Instead, these early life experiences seem to set up teens for lasting positives and negatives, not only in their adult social relationships, but adult mental and even physical health. Adolescents who expect that their peers will be unsupportive struggle with social skills and social functioning at least into early adulthood (Loeb, Hessel, & Allen, 2015). Sensitivity to rejection during adolescence, a state with seems to occur in response to early experiences of rejection, undermines the likelihood of having an adult romantic relationship, and leads to more negative interactional patterns in those which do form (Downey, Lebolt, Rincon, & Freitas, 1998; Hafen, Spilker, Chango, Marston, & Allen, 2014). On the contrary, adolescents with deeper, more supportive friendships even go on to experience increases in self-worth, reductions in depression, and lower levels of social anxiety into early adulthood (Narr, Allen, Tan, & Loeb, 2017; Bagwell et al., 2001). Adolescents with positive friendships, who are centrally located in peer groups, are even *physically* healthier over time (Allen, Uchino, & Hafen, 2015), suggesting that the groundwork laid by adolescent social experiences remains important well into adulthood, across multiple important aspects of quality of life.

Despite the numerous potential advantages of quality peer relations and a desire to form them, peer relations are often not smoothly negotiated by teens. Even teenagers who are eager to

reach out or help guide one another often do not have the requisite skills yet to effectively accomplish this, and some youth are simply not as adept at forming close peer bonds. This is further complicated when students in schools are "tracked" by their early achievements, leaving struggling students together and separated out from their more successful counterparts (Weinstein, 1996). Ability tracking is frequently seen along racial/ethnic lines, with black and Latinx students placed in lower ability tracks than white and Asian students (Graham, Taylor, & Ho, 2009). This sets up a system in which many of these siloed youth end up feeling isolated and alone, leading to later mental and physical health problems, poorer grades, and worse conflict management (Allen et al., 2015; Crosnoe, 2011; Burk & Laursen, 2005). This system is one in which the (socially) rich get richer and the poor get poorer. These effects particularly impact youth at the fringes of their social worlds. Youth who are members of marginalized groups (racial, ethnic, sexual, socioeconomic, etc.) regularly experience stigma from peers and teachers, as a result of negative ability, intelligence, and behavioral stereotypes, which leads to higher-than-average rates of direct discrimination such as bullying and rejection (Goldweber et al., 2013; Schuster et al., 2015). Social exclusion can also lead to decreased cognitive capabilities such as self-regulation, memory, and overall performance (Schmader, Johns, & Forbes, 2008; Hanselman et al., 2014). Their disadvantaged circumstances set these youth up to experience a wide variety of social and emotional difficulties, which feed off of one another.

At-risk minority youth are not the only youth in need of intervention. Youth who may at first blush appear to be the least likely to suffer mental health difficulties due to an abundance of material (e.g., financial) and immaterial (e.g., majority status) privileges often also have higher than average rates of both internalizing symptoms and substance use (Luthar & Becker, 2002). These youth are under significant pressure to live up to expectations in an environment where

failure is not a recognized option. Furthermore, youth in affluent families are more likely to report feeling greater emotional distance and isolation from their parents, where they may find little reprieve from this stress. Although certain aspects of the challenges faced by these youth are in many ways incomparable to those faced by marginalized groups, nonetheless, they share the core need for social support and a sense of belongingness. Even youth who appear successful in terms of being popular with peers or leading their social circles may suffer negative outcomes going forward. Popular youth are more likely to contribute to bullying of other students, more likely to become involved with drugs, alcohol use, deviant behaviors, and other forms of delinquency, and more likely to experience negative legal and social outcomes as they enter adulthood (Allen et al., 2005; Moody et al., 2011; Narr et al., 2017). Furthermore, youth who "lead the pack" during high school, in terms of showing greater autonomy with parents and peers, are even more likely to suffer negative physical health outcomes in early adulthood (Allen et al., 2015). These findings suggest that teenagers, regardless of where they fall on the social spectrum, do best when they are firmly embedded in a solid, supportive social group. Teenagers in a wide range of situations lack a sense of social safety and feeling of belonging, and their mental health is likely to suffer as a result.

Simply having an intimate social group may not be enough, however. The milieu of social groups tends to set the stage for contagion with respect to both positive and negative factors. Even teens who are situated in a close peer group and provide one another with support may benefit from additional guidance, as left to their own devices, teens in deviant peer groups frequently influence one another in ways that have societal drawbacks. Depression and engagement in risky behaviors (e.g., drug use, sexual risk taking, aggression) spread quickly within networks (Dishion & Tipsord, 2011). On the flip side, teens whose peer groups value

school more tend to also value education and perform better in school (Crosnoe, Cavanagh, & Elder, 2003). The most prominent and highly valued ideas encouraged by peers, directly or not, take root quickly and often widely, whether adults agree with these ideas or not. However, this sets the stage for powerful intervention possibilities. Teens listen to and emulate their peers, so helping to guide with a gentle hand the ways in which they interact with and support one another opens the door for ongoing and recursive processes of change within a peer group or school system.

Peer Relationship-Focused Interventions in Adolescence

While numerous relationship-focused interventions have been conducted with teens in an attempt to help modify behaviors and improve mental health, most of these interventions are targeted at a single behavioral outcome, such as reducing teen pregnancy or dating violence (for examples, see Cornelius & Resseguie, 2007; Robin et al., 2004). Most programs are delivered to teenagers in a format much like a classroom setting, where they are being taught individually even if they are surrounded by peers. If someone from the teen's life is involved, it tends to be parents, not peers, who are part of the intervention. The majority of existing adolescent group interventions are among youth who are either at-risk or who have already experienced some kind of trouble (e.g., alcohol or drug rehabilitation groups). A largely untapped way of structuring interventions is to build them as a group activity that bonds heterogeneous participants around their strengths and capabilities, while also delivering a powerful message. Given how likely adolescents are to fall back on what they know and believe about their peers, one of the strongest ways to make a lasting impact may be helping them to build groups that can be an ongoing source of support. This occurs on its own at times: summer camps, sports teams, theater groups, and after school clubs are occasionally groups of otherwise disparate teens who bond together

deeply around their common interest, and accomplish a great deal as part of that shared group. A new intervention, capitalizing on the known strengths of prior intervention work as well as clinical work and basic science, aims to create a program that can be implemented within schools to extend to all students the possibility of developing deep connections and benefitting from these in terms of social skills and mental health.

Previous intervention work provides excellent frameworks for understanding what types of activities are effective when working with adolescent groups. Major goals of nearly all interventions broadly include getting buy-in from the participants, delivering a specific message leading to both attitude and behavior changes, and keeping the intervention from veering off the rails into deviancy training. Even before buy-in, a necessary step is accessing target youth. This intervention is structured in a school context for a few reasons: most simply, that is where adolescents spend the majority of their days, and where the vast majority of most of their social contacts occur, allowing the intervention to reach maximal numbers of teens across all social strata. Approximately 79% of teen group activities are accounted for by experiences at school, making it the ideal space to try to positively influence the peer context (Yearwood, Pearson, & Newland, 2012). Basing an intervention in schools also helps with problems such as accessibility for teens – even ones who may not be able to access an out of school program are usually able to get to school (Hulleman & Cordray, 2009). Interventions that have been based in schools have been found to help students feel more comfortable, due to the familiar setting, and have advantages as far as automatically allowing for peer feedback – something that is craved and deeply valued by adolescents (Malekoff, 2015; Mazurek Melnyk, Kelly, & Lusk, 2014). On the flip side, interventions tend to be most successful when they are distinguished from normal class time, as that helps teens to break away from the microcosms already existent in the school

culture (Hulleman & Cordray, 2009; Yeager & Walton, 2011). A familiar setting, with aspects that set it apart, makes this intervention both accessible and engaging.

Simply having teenagers present isn't enough. Participant buy-in is critical: without it, the intended messages will not reach the audience. One of the top things that helps to encourage this buy-in is active participation from the teens. People are more likely to become invested in a group or an idea when they feel their voice is being heard: when they have this, they feel like a respected and valued part of the group process (Lewin, 1952). Furthermore, it has been found across contexts that people are most likely to believe an idea when they are the one expressing it (Aronson, 1999; Yeager & Walton, 2011; Miller & Rollnick, 2002). Simply getting someone to express an opinion leads to them persuading themselves that they do, indeed, hold that opinion. This idea is regularly leveraged in research on persuasion, as well as clinical work aimed at helping clients reduce unhealthy behaviors. It has been found to have an impact in both individual settings, where getting people to discuss why they hold a specific value leads to greater adherence to that value and associated positive outcomes later (for a review, see Yeager & Walton, 2011), as well as group settings, where group member change in risky behaviors is related to both personally stated goals and peer feedback (Dishion, Poulin, & Burraston, 2001; D'Amico, et al., 2015). Getting kids talking, in particular about why they value what they value, is a major part of buy-in.

Not only are teens more likely to listen to and believe an idea that they are endorsing, but they are also more likely to listen to a message that is supported or given by their peers, rather than an adult (Dishion, et al., 2001; Mazurek Melnyk et al., 2014). Continuing to encourage active participation throughout an intervention is perhaps the most important key to having a message stick. This helps with another issue as well: possible resistance. Individuals naturally

resist being lectured about a topic or told what to think, but the majority of people want others to be open and straightforward with them. This leads to a potential bind: interventions are more successful when they are direct and focused, such that participants know what the goals are (Robin et al., 2004); on the other hand, having a persuasive but indirect message helps to reduce resistance to being told what to do or how to think (Crano, Siegel, Alvaro, & Patel, 2007). Here, again, this intervention draws on the principles of self-persuasion and the adolescent penchant to adopt ideas generated by peers. Involving adolescents as active participants reduces resistance and also allows teens to connect ideas and strategies to their personal life context (Yeager & Walton, 2011).

One potential drawback to adolescents readily soaking up when they hear from peers is the possibility of deviancy training. In many adolescent interventions, deviancy training, or the tendency for groups of at-risk adolescents to end up engaging in *higher* levels of deviant behaviors as a direct result of the intervention, has been a stumbling block (Dishion, Andrews, & Crosby, 1995; Dishion, Andrews, Kavanagh, and Soberman, 1996; Poulin, Dishion, and Haas, 1999; Poulin, Dishion, & Burraston, 2001). There are thought to be a few factors at play in those situations: when teenagers hear their peers talking favorably about specific actions, they are more likely to emulate those actions. In addition, behaviors they hear about more regularly are normalized, and seen as less extreme, which increases the motivation to engage in the behaviors. Finally, teens gain attention and status for engaging in deviant behaviors, which are, in some cases, seen by peers as being more "mature" behaviors (Moffitt, 1993). While deviancy training is a common problem in adolescent groups, it is fortunately a very avoidable one with adequate scaffolding from group facilitators. One major contributor to deviancy training occurs when all high-risk youth are grouped together (Dishion, et al., 2001). In heterogeneous groups, there are

more varied voices and by definition, the risky behaviors are less normative to begin with. Having a heterogeneous group, as is found in non-academically tracked school classes, in and of itself reduces the risk. Furthermore, the feedback teens receive from their peers and those around them helps to guide what they value, and how they act as a result. Even in high-risk groups, when negative behaviors are not valued and supported by other group members, and there is a higher level of "change talk," teens reduce their deviant behaviors over time (Dishion et al., 2001). A good way of encouraging this is to model positive feedback for positive discussion, which helps set the group going in a direction where they reinforce one another's positive goals, and do not reinforce negative ones. Part of that process is reliant on helping youth to establish purpose and to be able to articulate their positive values. Harkening back to the idea that people convince themselves of things they state as true, getting adolescents to both state their goals and values, *and* hear their peers stating similar ones, provides a breeding ground for increased adherence to those positive ideals rather than a diversion into negative ones.

Skill building and experiential learning are also critical when targeting both changes in thinking and changes in behavior. It is well documented that changes in these domains are not highly correlated, suggesting that to maximize effects, it is necessary for interventions to incorporate the opportunity for new experiences and behaviors as well as new ideas (e.g., Cornelius & Resseguie, 2007; Robin et al., 2004). Programs targeting teen dating violence and STD prevention, for example, see changes in attitude based on simple information provision, but find that in order to see future behavior and decision-making changes, active skill building exercises and opportunities to practice these skills *in vivo* are necessary (De Le Rue, et al., 2017; Robin, et al., 2004). Providing opportunities within an intervention as well as encouraging extra-

session opportunities for additional experiences maximizes the chance for participants to incorporate new ideas and behavior changes into their lives.

Current Intervention Theoretical Components

This intervention also builds on recent work with so-called "wise interventions:" brief but powerful interventions which, "aim, simply, to alter a specific way in which people think or feel in the normal course of their lives to help them flourish" (Walton, 2014). This new class of interventions has been particularly utilized in several areas from which this intervention draws and builds, including brief social belongingness interventions and values affirmation interventions (e.g., Yeager & Walton, 2011; Walton, 2014). The goals of this class of interventions include isolating a psychological mechanism and briefly but profoundly altering an experience related to it in a way that sets up a recursive process of change in the participants' lives. This again underscores the importance of experiential learning: in these highly impactful interventions, the major goal is to offer a new experience in a time and place where this will influence future beliefs, experiences, and approaches to the world. In fact, interventions of this type with youth have been found to have particular impact following a transition, such as the transition from middle to high school, or from high school to college, and can set young people on an incredibly powerful upward path of success when timed appropriately (e.g., Yeager & Walton, 2011; Cohen et al., 2009; Cook et al., 2012). For that reason, this intervention targets early high schoolers, and provides not just a *single* experience with the potential to lead to changes in beliefs and future experiences, but *repeated* ones. These changes are targeted at being directly related to social experiences and abilities with the goal of influencing the multiplicity of related areas of functioning and symptoms.

Affirming one's own values, even on its own, can be a powerful agent of change. This is one of the most well-established types of the "wise" interventions, and has been used in numerous contexts. Major tenets of affirmation interventions hold that feeling a sense of integrity (for example, feeling that one is good and efficacious) is a key driver of human behaviors (Cohen et al., 2006). When a person is in a stressful situation, their performance on many tasks is likely to be undermined, which may lead them to feel globally inept despite the circumstantial nature of the situation. Numerous studies have shown that helping to buttress peoples' self-stated values can interrupt a potential negative feedback cycle such that adverse experiences do not set the tenor for future ones. This has been shown with middle school students engaged in a one-hour writing exercise in which they describe why a value they hold is important to them, and subsequently experience higher grades over the next several *years* as compared to peers who write about a similar, but non-self-relevant topic (Cohen et al., 2006; Cohen et al., 2009; Yeager & Walton, 2011). The effect is particularly strong for minority students, who are more likely to feel threatened in a school context. Similar interventions have been shown to be effective in lowering endocrine stress reactions during exams (Sherman et al., 2009), in increasing prosocial behavior, especially among more antisocial children (Thomas et al., 2012), and in increasing GPA for women in predominantly male STEM fields (Miyake, et al., 2010). These interventions seem to help people to uncouple discrete stressful situations from their sense of self. This allows people to continue to feel capable of achieving, even after experiencing a setback or negative event, and to be less likely to attribute a failure to an unalterable self-attribute. Although mental health has been understudied as an outcome, these positive changes in self-attribution have the potential to directly contribute to an improved sense of self, and therefore lower depressive symptoms and higher self-worth. Importantly, the values that people affirm are frequently *not*

directly related to the outcome of interest, suggesting that even very simply reminding oneself about one's important values is a powerful buttress against negative experiences. This intervention builds on this idea, providing a variety of situations in which youth state and reflect on their values. It is also applied to the topic of connections with other people: this is something which *most* teenagers value, as well as an area in which *most* teenagers feel uncomfortable and threatened. This should help teens to feel more adept and invested in social situations, even if they have had transient negative experiences.

Likewise, this project draws strongly on a related intervention category: social belongingness interventions. Like values affirmation interventions, these interventions leverage the idea that feeling like one belongs and is accepted in their social environment (e.g., peer group, school, etc.) is a fundamental human motivation, and that not feeling a sense of belonging leads to higher stress and poorer performance in many domains, including social skills, academics, and behaviors (Walton & Cohen, 2007). Humans are fundamentally social creatures, and demonstrate intrinsic drives to be connected to others, form bonds, and resist the dissolution of bonds (Baumeister & Leary, 1995). Even very minor, subtle cues of social connectedness, such as discovering an acquaintance has a shared interest, or hearing that a field of study is very supportive, influences peoples' motivation and persistence, and can impact their values and goals (Walton, Cohen, Cwir, & Spencer, 2012). A higher sense of social belongingness has been linked to better physical health and wellbeing (Walton & Cohen, 2011), and in the school setting in particular, has been linked to higher academic outcomes, lower disciplinary records, lower anxiety and depression, and greater resilience in the face of academic challenges (Walton & Cohen, 2011; Bond et al., 2007). A sense of connectedness to the school environment, which encompasses a sense of belonging, social support, and engagement, is related to better grades

and fewer health risk behaviors, particularly for students facing increased adversity (e.g., black students in largely white college settings, women in male-dominated majors). Negatively stereotyped minority students involved in interventions that target this issue show significantly increased GPA over time, because when they struggle or feel out of place, they are more likely to ascribe that to being a normal, transitive state rather than meaning that they don't belong (Walton & Cohen, 2011; Walton et al., 2015). Even these brief, single-time-point interventions have strong effects that last for years. It is expected, based on the mechanisms targeted by social belongingness interventions, that incorporating these principles will help students to feel more connected to their schools, and in particular, more connected with the other students in their intervention group, leading to decreased internalizing symptoms. This may be particularly true for students from underserved demographic groups, given their increased potential for a low sense of belonging.

The "magic ingredient" of these interventions broadly seems to be people creating a coherent narrative about their lives, including how their personal experiences relate to their perception of the importance of social belongingness, or the normativity of struggling with this at times. This again draws on the idea of the benefits of self-persuasion (Aronson, 1999) as well as the fact that putting something into a narrative form helps people to feel better able to make sense of their lives and gain a sense of meaning about even challenging experiences (Pennebaker, 1993). This intervention extends these ideas by using a spoken narrative format – something which is more accessible for many high-school-aged youth than a written narrative format – as well as by situating the narrative experiences in a group setting. Sharing one's narrative and the meaning ascribed to it aloud may be even more powerful than writing it down: publicly committing to an idea or teaching others about it leads people to endorse the idea even

more highly in the future (Aronson, Fried, & Good, 2002). A group format also allows youth to not only reinforce ideas about social belongingness for themselves, but also to hear them supported by their classmates. Building this supportive community and hearing one another speak adds another way of normalizing the feelings of not fitting in that many teens experience, and provides peers who could perhaps be future supports. A goal of this intervention is to provide participating youth with a small community of peers with whom they experience a sense of belonging, in order to amplify the effects of their own personal reflections about social belongingness.

A final major piece of this intervention is based on the "helper-therapy" principle, developed with the idea that rather than treating people as "help recipients," giving them the opportunity to see themselves as help *providers* benefits them by increasing their sense of usefulness and giving them a stake in the cause they are working toward, leading again to self-persuasion (Riessman, 1965; Weinstein & Ryan, 2010). Indeed, this role-reversal has been found to benefit adults dealing with alcohol abuse, serious mental illness, and cancer, as just a few examples (Pagano, Post, & Johnson, 2011; Kahn & Fua, 1992; Hutchinson et al., 2006; Maisiak, Cain, Yarbo, & Josof, 1981). People improve when they are given the opportunity to reach out and provide help or support to others. The same principles work with younger children: elementary school students with severe behavioral problems and learning difficulties improve in their own behavior and work when they are given the chance to tutor younger children (Weiner et al., 1974). At the high school level, studies of this in high risk urban areas have also shown that students who teach life schools to middle schoolers are more likely to utilize those life skills (O'Hearn & Gatz, 1999), and in some of the strongest examples of this phenomenon, high school students involved in general community service show lower high school dropout and lower rates

of teen pregnancy (Allen, Philliber, & Hoggson, 1990). Furthermore, feeling a sense of purpose is related to a lower likelihood of ruminating, indirectly leading to lower levels of depression in children and adolescents (Hampel & Petermann, 2005). Thus, this program incorporates outreach in a number of ways. Students are asked to offer thoughts and support to one another in the room, and facilitators scaffold projects students complete to support others in their school community in small ways, such as younger students and school community members who go underappreciated. These activities are carefully incorporated in a way that is achievable within the constraints of a school context, but can still allow the students to feel like they are making a difference to others. They do these activities as a group, giving them purpose not just as an individual, but as a team, to better cement those bonds.

Intervention Structure and Scope

Importantly, while this intervention draws on key ingredients from multiple known-effective sources, they are incorporated into a coherent whole, structured intentionally to build over time. Social-Emotional Learning (SEL) interventions, which have primarily involved elementary school children, have been found to be most highly effective when they use the SAFE approach, ensuring that the intervention is Sequenced, uses Active learning, is Focused, and has goals which are Explicit to the participants (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). The SAFE model has been the template for pulling together the various pieces and organizing this intervention. The curriculum is sequenced, moving through the sessions in a way that gradually encourages more sharing, more bonding, and more outreach at a safe and comfortable pace. This ensures that the youth engage in active learning through activities which encourage them to support one another and others in their community rather than simply reflecting on those values (potentially building on and increasing the effects of previous

related interventions). Each session and activity within it is focused on a specific goal or goals, which are clearly planned and laid out. Finally, facilitators are explicit with the youth about what the goals are, starting from the first session, and remind them throughout as they move through activities. While many of the elements of our intervention are expected to demonstrate effectiveness similar to past work should they be presented alone, it is also expected that given the additional components of social support and repeated exposure to the topics and skills, effects will be stronger and generalize to more domains of functioning, including improved peer relations and mental health. Because this SEL intervention is designed to be effective regardless of context, success is compared across two distinct types of school sample with varying background characteristics.

This study was conducted in four public high schools in the United States Midwest and one private high school in the United States South, using a sample of ninth- and tenth-grade students. Students at the various schools differ in terms of demographics, socioeconomic status, and community; however, based on the underlying mechanisms that this project targets and the high level of need for belongingness and interpersonal support desired by teenagers at even very different levels of privilege, it is expected that this intervention will benefit students in each of these disparate communities. In spite of some similar difficulties experienced by both marginalized groups and “well-off” youth (e.g., loneliness, pressure to achieve), the very different contexts for these groups of youth are acknowledged, and thus these samples will be looked at in two separate studies. This will allow assessment of whether these social-emotional difficulties, which may arise from very different life situations, can be prevented and addressed successfully by the proposed similar mechanisms. Although these samples are far from an exhaustive survey of all high school settings in the United States, examining students coming

from starkly different contexts will be a first step toward determining if this does function as a universal SEL program for high schoolers.

Although this intervention is designed to be accessible to all genders, it is recognized that compared to young men, young women both experience higher levels of internalizing problems in high school (Angold & Rutter, 1992), and are more socialized toward valuing social connectedness (Rose & Rudolph, 2006), suggesting that the intervention may function differently across genders. Furthermore, given that marginalized groups have historically benefitted the most from the single-session social belongingness and values affirmation interventions into which this program in part taps, it will be important to consider moderation by membership in majority/underserved groups to assess if this intervention does work differentially for students of varying backgrounds (Walton & Cohen, 2011). In particular, in the public school samples, race/ethnicity could be expected to moderate the success of the intervention, while in the private school sample, the strong divide by boarding status (which coincides, as well, with a significant portion of the school's racial/ethnic diversity and frequently the length of time students have attended the school) may be an important moderator. However, exposure to racial/ethnic diversity in schools has also been demonstrated to improve social adjustment during adolescence for youth at large, not simply underrepresented youth, suggesting that this intervention's focus on increasing positive contact among youth of many different backgrounds may lead to positive changes across the board (Graham, 2018). In the public school sample, racial/ethnic breakdown also varied considerably among the schools. Given the different experiences youth have based on their communities, as well as the number of people "like them" in their communities, proportion of the school that is a racial/ethnic minority may also be expected to moderate the effects of the intervention (e.g., Finn & Voekl, 1993; Goldsmith, 2004).

Given that youth have many different types of social connections, and success in different peer settings may differentially impact mental health, it will also be important to ascertain if any effects of the program on changes in mental health symptoms come about as a result of more positive peer relations. Both the broader peer group and participants' relationships with close friends have the potential to be impacted, given that changes in participant social competencies could extend to their usual peer groups as well as impacting them in their intervention groups. While the program is more likely to directly lead to changes in how the participants interface with their broad peer group, close friendships seem to have a higher relation to longterm mental health, and thus changes in either or both of these domains may mediate changes in mental health.

Effectiveness of this social-emotional learning intervention, The Connection Project, is assessed in strengthening peer bonds, increasing social skills, and improving self-concept in two demographically and socioeconomically distinct high school samples by examining the following hypothesized outcomes:

1. Teens who participate in The Connection Project will show a relative increase in social acceptance and comfort with their peer group at large, as well as a relative increase in their feelings that they belong at their school (Study 1 & 2).
2. Teens in The Connection Project will experience a relative increase in positivity and positive conflict resolution in their closest friendships (Study 1 & 2).
3. Teens in The Connection Project will experience a relative increase in self-esteem (Study 1 & 2).

4. Teens who participate in The Connection Project will experience a relative decrease in social anxiety (Study 2), trait anxiety (Study 2), fear of negative evaluation (Study 2), and depressive symptoms (Study 1 & 2).
    a. Effects of the program on change in internalizing symptoms (social anxiety, trait anxiety, fear of negative evaluation, and depressive symptoms) will be partially mediated by increases in positive peer relations, with close friendship positivity as a stronger predictor than broad social acceptance.
    b. Effects of the program on change in internalizing symptoms will be moderated by baseline level of internalizing symptoms, with teens with a higher baseline level of internalizing symptoms benefiting the most from the intervention.
5. Effects of the program on may be moderated by certain demographic variables, with teens that are part of an underserved demographic group benefiting the most from the intervention (Study 1 & 2).

Study 1: The Connection Project in Urban Public High Schools

Methods

Participants. Participants for this study included students from four urban public high schools in the United States Midwest. Racial/ethnic and socioeconomic demographics varied across schools in this region, with schools having online reported racial/ethnic breakdowns ranging from 71% majority youth and 29% underrepresented youth to 93% minority youth/7% majority youth (full demographics not provided). Across these schools, the predominant racial/ethnic minority group was comprised of Black/African American youth, followed by a much smaller subsample of Hispanic/Latinx and mixed-race students. Socioeconomic metrics were similarly varied, with a range of 20.3% to 73.6% of students across the four schools

qualifying for free/reduced lunch. Racial/ethnic background was collected for students in The Connection Project, and was roughly representative of their school demographics, with racial/ethnic breakdown at schools ranging from 67% white/Caucasian youth, 20% black, 6.7% Asian/Pacific Islander, and 6.7% multiethnic to 5% white/Caucasian, 81.1% black, 0.6% Hispanic/Latinx, 7.8% multiethnic, 1.1% Native American, and 4.4% other. Full demographic information for students who provided these data is shown for intervention, control, and total project youth in Table 1. There were no significant differences in demographics for youth in the intervention vs. control groups.

Data were collected from a total of 367 ninth graders (201 intervention,166 control). These students were broken down into 40 intervention groups. Intervention groups were run biennially, from Fall, 2016-Spring, 2018.

Procedure. Students were recruited from non-academic classes at their schools, such as a health class or a study hall. Facilitators visited the classes that agreed to participate in the intervention ahead of the beginning of the intervention to describe it to students and hand out consent forms. The project was explained to students as a way for researchers to learn more about how teenagers form interpersonal connections with one another, and how these connections can be strengthened in schools. Students participated in brief trivia games about the importance of connection as well as small group challenges that required them to work together on activities such as coming up with creative uses for common household objects. These activities allowed students to better anticipate some of the types of activities and topics they could expect to cover during the intervention, as well as the ways in which they would engage in fun work together in teams/groups. Parent consent and student assent were collected by the students' regular class teachers and provided to the research group. The consent form used and

an outline of the script used to present to students are included in Appendix A. A Certificate of Confidentiality was obtained from the National Institute of Health (NIH), ensuring that information provided by participants cannot be compelled by subpoena in federal, state, or local civil, criminal, administrative, legislative, or other proceedings.

All students who consented to participate filled out a pre-intervention packet of measures during a class period prior to the start of the intervention. Students were assigned to treatment or control groups using a randomized block design, with blocking by gender and ethnicity to account for potential differences based on these demographic factors. Within the blocks, a random number generator was used to assign the students to treatment vs. control conditions. Students in the treatment condition attended The Connection Project groups as a pullout from their scheduled class approximately once per week for twelve weeks. This number of sessions allows the program as well as pre- and post-surveys to occur within a single school semester, and allows for the possibility of 1-2 additional days in case of school cancellation or other required activities on a scheduled session day. Brief descriptions of session content for each week are included in Appendix C. Control participants attended class (either Health Class or Study Hall) and received the regularly-scheduled curriculum as usual, which included topics such as physical and emotional health in Health Classes, and free time to study or complete assignments in Study Hall. The Connection Project was conducted in a separate classroom on school grounds at all sites, and led by two facilitators. Facilitators at these sites were fulltime trained teen group leaders. Facilitators and other team members met at least weekly to debrief sessions, ensure consistent implementation, and troubleshoot any challenges occurring in real time. Following the twelve-week program, post-intervention measures were collected from treatment and control

participants. Compensation for survey completion and snacks during intervention groups were provided to study participants. Participants received $15 for completion of each survey.

Measures. Copies of all measures used in this project can be found in Appendix D.

***Self-Worth*:** Self-worth was assessed using the Rosenberg Self Esteem Scale (RSE; Rosenberg, 1965; 1979). This scale, developed using high school students, is comprised of ten statements assessing self-worth, scored on a 4-point scale from "Strong Agree" to "Strongly Disagree." The RSE has been shown to have excellent internal consistency, with a Guttman scale coefficient of .92 (Rosenberg, 1965).

***Broad Social Acceptance*:** *Broad Peer Group Trust and Bonding* was assessed with a "roster-and-rating" sociometric procedure (Singleton & Asher, 1977). Youth were asked to rank on a 5-item Likert scale how much they feel open vs. guarded with each of their classmates, both those who were in The Connection Project groups and those who were not. This procedure allows us to calculate how open, on average, each teen's peers feel with that teen. This questionnaire was created for the purposes of this study.

***Close Friendship Positivity*:** Close friendship experiences were assessed using three subscales from the Friendship Quality Questionnaire (Parker & Asher, 1993). This explores a teen's relationship with their best friend, and can generate an overall friendship positivity score as well as independent scores for each subscale. This study included the subscales for how supported and valued the target teen feels by their best friend, how much conflict and betrayal is present in the friendship, and how well they resolve conflicts and jointly problem solve (α = .57-.91 across these three subscales). This measure allows us to explore if participating in The Connection Project led to changes within adolescents' close peer experiences outside of the Connection Project groups.

***School Belongingness*:** Students' sense of overall belongingness at their school was assessed using an 8-item, 4-point Likert scale measure of student belonging originally developed for the Programme for International Student Assessment (PISA). This measure has been found to have good reliability across 32 countries, and is strongly predicted by demographic risk factors (Adams & Wu, 2003).

***Depressive Symptoms*:** Adolescents reported the degree of their depressive symptoms using the Children's Depression Inventory 2: Self Report (Short) Form (CDI 2:SR(S); Kovacs, 2010) in the public school sample. The CDI 2: SR(S) is a short version of the Children's Depression Inventory 2 (CDI 2), which is a depression inventory for youth ages 7-17 based on the gold standard adult Beck Depression Inventory. The CDI 2: SR(S) contains 12 items rated on a 0 to 2 scale. Item scores are summed to yield a total score for depressive symptoms. This measure has been well-validated as a measure of depressive symptomatology, and higher scores have previously been linked with poor self-worth, hopelessness, and negative cognitive attributions (Kazdin, 1990). The full measure has good internal consistency (α = .71-.89, and the short form has been shown to correlate highly with the full measure. The CDI uses a continuum/severity rather than a threshold approach, recognizing that higher levels of depressive symptoms that do not necessarily meet diagnostic thresholds may still be important in predicting concurrent and subsequent dysfunction (Lewinsohn et al., 2000).

Results and Discussion

Power. Using Optimal Design software (Raudenbush et al., 2011; Spybrook et al., 2011), statistical power was assessed for a multi-site trial with nesting at the site level and random assignment at the individual level. Subsequent to the first semester of data collection with this sample, preliminary analyses were run to test differential treatment response based on grade

level, in line with previous SEL interventions which have demonstrated effectiveness following a school transition, and shown no additional effectiveness when bolstered at later time points (Cohen et al., 2009; Cook et al., 2012). Similarly, early data in this study suggested an interaction with grade such that intervention effects were present for ninth graders who had just transitioned to high school, but not older students. Based on this expected consistency with prior research, only ninth graders were assessed in this study. The sample of 367 ninth grade participants participated across a total of 40 "sites" (defined as separate classes), with an average of approximately 9 students per site. Power estimates are based on previous single-session interventions from which our intervention was built, which have yielded effect sizes of $\delta = .50$ and higher. Under the assumptions of at least a similar intervention effect ($\delta = .50$), modest inter-site variability in treatment effectiveness ($\sigma^2 = .05$), with 5% of outcome variance explained at the site (classroom) level, 50% of variance in outcomes predictable from baseline measures, and $\alpha = .05$, power is estimated at 1.00 to detect intervention effects. Even assuming more conservative intervention effects ($\delta = .20$), power is estimated at .68 to detect intervention effects.

Attrition. Consents were collected from 367 ninth graders, 318 of whom participated in the pre-test. Of the 367 ninth graders who agreed to complete the measures packets and be randomized into the treatment or control condition, data were obtained for 314 (85.6%) at post-test (of the 44 students who did not provide data at post-test, 21 students were in the control condition and 23 were in the intervention condition). An additional 24 students (including non-ninth graders) turned in consents, but did not fill out measures at pre- or post-test. Attrition analyses were conducted prior to primary analyses to assess any bias due to dropout/attrition in post-test measures based on scores on baseline measures of interest, as well as gender, ethnicity,

proportion of school population in underserved racial/ethnic groups, and intervention participation. Chi-square tests were used when the variables assessed as predictors were categorical (e.g., gender), and logistic regression was used when variables assessed as predictors were continuous (e.g., baseline depression score). Gender was the only variable where differences in attrition were seen, with male students significantly more likely to not complete post-test measures compared to female or other students (p = .010). Missing data were, therefore, missing at random. Because data which are missing completely at random (MCAR) or missing at random (MAR) can be estimated appropriately using maximum likelihood estimation (MLE), missing data in this sample will be handled using full information maximum likelihood (FIML) methods, which offer the least biased estimates for longitudinal data utilizing all available data (Arbuckle, 1996; Jeličić, Phelps, & Lerner, 2009).

Preliminary Analyses. Means and standard deviations for all scales used are presented in Table 2.

Prior to running the primary analyses of interest, correlations were examined between outcomes of interest to assess whether any variables assessing similar constructs should be combined as part of broader constructs. Decisions about constructs to be combined into broader factors were guided by a priori theoretical expectations (e.g., the two measures of internalizing symptoms were expected to hang together and tap into a similar broad mental health construct). In cases where two variables were expected to hang together, decisions to combine variables were made on the basis of alpha value, and in cases of three or more variables, factor analysis was conducted. Given the high correlation found between depression symptoms and feelings of self-worth (r = .71) and the theoretical similarities between the constructs, depression symptoms

and self-worth scores (reverse-scored) were combined into a single construct designated as *internalizing symptoms*.

Additionally, since the full scale for close friendship positivity was not used, the three different aspects of the positivity of one's closest friendship were assessed. These correlated .15-.68, and were factor analyzed to see if a full-scale score was still most appropriate for analyzing these three subscales.

Exploratory factor analysis (EFA) was conducted to identify latent variables accounting for the covariance among the measurements (Preacher & MacCullum, 2003) using iterated principal factor analysis (IPFA). Although theoretical constructs allowed for predictions of related factors, EFA was preferred to confirmatory factor analysis (CFA) because of the added flexibility allowed with regard to patterns of loading, number of factors, etc. (Marsh, Morin, Parker, & Kaur, 2014). Both eigenvalues >1 and subjective scree tests were used to determine the best factor number, as relying on eigenvalues alone has been demonstrated to lead to unreliable conclusions (Preacher & MacCullum, 2003). EFA using maximum likelihood parameter estimation was then run to ensure that the factor solutions assessed by IPFA had maximum goodness-of-fit. Promax rotation was used to allow for an assumption that the factors found are oblique, or correlated (e.g., Gorsuch, 1970). Given the close relations between different constructs, orthogonal factors were not expected, and those constraints were not placed. For single-factor solutions, no rotation was possible.

For the factor analysis assessing factorability of the different aspects of positivity of one's closest friendship, results were mixed. EFA suggested that a single factor with an eigenvalue of 1.23 should be retained; however, maximum likelihood parameter estimation could not confirm a one-factor solution. Furthermore, Kaiser's Measure of Sampling Adequacy (MSA)

was .53, which is below the acceptable cutoff for factor analysis and suggests that factor analysis is not appropriate for determining data structure. Based on these outcomes, Cronbach's alpha was calculated. The combined measure was found to have $\alpha = .55$, suggesting that though related, these three subtests of close friendship positivity would be better left uncombined.

Given the expected correlations between other outcomes of interest on the basis of interrelations (internalizing symptoms and various measures of peer relations and social competence) and self-report biases, distinct theoretical constructs were kept separate in spite of modest correlations.

Simple correlations between combined constructs and variables used in primary analyses are presented in Table 3.

Primary Analyses. All analyses were conducted using SAS Enterprise Guide ®, Version 7.1. Multi-level models (MLMs) were used to examine individual changes (level 1) while accounting for group-level differences (level 2). In addition to more accurately accounting for multiple levels of variance, a benefit of using MLM rather than standard regression is its capability to more accurately handle small sample sizes (Gelman & Hill, 2007). In each analysis, multiple level 1 variables were controlled for (privileged/underprivileged ethnicity, baseline level of outcome of interest) based on the possibility that these variables could potentially impact outcomes of interest. In addition to the previously discussed variables (student ethnicity and baseline outcome of interest), previous work has suggested different experiences for underrepresented youth in schools with higher vs. lower proportions of other students who are underserved racial/ethnic groups, so proportion of each student's school population in an underserved racial/ethnic group, was controlled for.

Participation in this study was open to students regardless of gender identity, and as a result, gender was not a binary variable in this dataset. Multiple students identifying as transgender or "other" participated; however, there were insufficient participants with non-cis-gendered identities to explore differences based on underrepresented gender identity. In order to minimize exclusion of data while still examining differential effects by male/female identity, models including gender as a covariate, dropping participants who did not identify as female or male, were run. In cases in which gender was not a significant predictor of the outcome of interest, it was removed from the model in order to use the full set of participants. For cases in which it was a significant predictor, the non-binary participants were removed from analyses.

Individuals were considered as being nested within classes in multi-level models, and to allow for the possibility that different classes began with different levels of baseline characteristics, varying intercepts at the class level were accounted for. Given the possibility that the effect of being in the intervention groups might vary based on class, the slope of class was also examined as a random effect. AIC, BIC, and -2 Log Likelihood values were considered in comparing the model fits. While the more complex models frequently had incrementally improved AIC and BIC values, comparing -2 Log Likelihoods is the preferred method for testing models differing in terms of variance components (C. Tong, personal communication, October 5th, 2017). The model fits did not significantly improve when this term was added in any models (all p's > .202 for Chi-Square tests comparing log likelihood values), so it was dropped for all analyses.

Hypotheses 1-4 were assessed as specified in the figure below. All outcomes are measured at post-treatment:

OUTCOME	**PREDICTOR**	**COVARIATES**
Hypothesis 1: Teens who participate in The Connection Project will increase in social acceptance with their peer group at large, as well as increase in their feelings that they belong at their school.		
(a.) Broad Peer Group Trust and Bonding (b.) School Belongingness	Intervention vs. control	Gender Race/Ethnicity Pre-treatment score on outcome of interest Proportion of Students from Underrepresented Racial/Ethnic Group
Hypothesis 2: Teens in The Connection Project will experience increased positivity and increased positive conflict resolution in their closest friendships.		
(a.) Friendship Quality Questionnaire Valuing subscale (b.) Friendship Quality Questionnaire Conflict/Betrayal subscale (c.) Friendship Quality Questionnaire Conflict Resolution subscale	Intervention vs. control	Gender Race/Ethnicity Pre-treatment score on outcome of interest Proportion of Students from Underrepresented Racial/Ethnic Group
Hypotheses 3&4: Teens in The Connection Project will show improvements in internalizing symptoms.		
(a.) Combined Children's Depression Inventory 2: SR(S) & reverse-scored Rosenberg Self-Esteem Scale	Intervention vs. control	Gender Race/Ethnicity Pre-treatment score on outcome of interest Proportion of Students from Underrepresented Racial/Ethnic Group
Hypothesis 4a: Effects of the program on internalizing (Hyp. 4) will be partially mediated by increases in positive peer relations (Hyp. 1 & 2), with close friendship positivity as a stronger predictor than broad peer group comfort.		
Mediation analyses will be conducted using the variables and covariates specified above, following guidelines outlined by and a SAS macro developed by Bauer, Preacher, & Gil, 2006.		

An example of how models addressing hypotheses 1-4 were constructed is presented below.

An unconditional means model was fit first to assess the amount of variance accounted for between vs. within groups. This series of equations is:

(1a.) $y_{j[i]} = \beta_{0j} + \epsilon_{ij}$

(1b.) $\beta_{0j} = \gamma_{00} + \mu_{0j}$

(1c.) $y_{j[i]} = \gamma_{00} + \mu_{0j} + \epsilon_{ij}$

where equation (1a.) includes $y_{j[i]}$ as the outcome of interest for student *i* in class *j*, β_{0j} as the mean of class *j*, and ϵ_{ij} as residual error at the individual level in group *j*. Equation (1b.) solves for the intercept coefficient $\beta_{0j,}$ where γ_{00} is the grand mean of all groups, and μ_{0j} is variation of groups from the grand mean. Equation (1c.) substitutes (1b.) into (1a.) to present the full model.

Next, individual-level predictors as well as covariates were added in.

(2a.) $y_{j[i]} = \beta_{0j} + \beta_{1j}\, x_{1i[j]} + \beta_{2j}\, x_{2i[j]} + \ldots + \epsilon_i$

(2b.) $\beta_{0j} = \gamma_{00} + \mu_{0j}$

(2c.) $\beta_{1j} = \gamma_{10}$

(2d.) $\beta_{2j} = \gamma_{20}$

(2e.) $y_{j[i]} = \gamma_{00} + \gamma_{10}(x_{1i[j]}) + \gamma_{20}(x_{2i[j]}) + \ldots + \mu_{0j} + \epsilon_i$

where in equation (2a.), $y_{j[i]}$ is once again the individual level outcome of interest, β_{0j} is the mean of class *j*, β_{1j} is the coefficient of predictor $x_{1i[j]}$, and ϵ_{ij} is the residual error at the individual level in group *j*. Equation (2b.) is identical to (1b.); however, equations (2c.) and (2d.) now show the fixed coefficients demonstrating the impact of predictors x_1 and x_2 at the group level on outcome *y*. Equation (2e.) substitutes equations solving for the coefficients into the full

equation. In this model, x_1 is the effect of participation in the intervention, and $x_2 \ldots x_k$ are covariates (gender, race/ethnicity, pretest variables of interest). For example, the full equation testing for an effect of the intervention on internalizing symptoms would look like:

$$\textit{Internalizing}_{[i]} = \gamma_{00} + \gamma_{10}(\text{Intervention vs. control}) + \gamma_{20}(\text{gender}) + \gamma_{30}(\text{race/ethnicity}) + \gamma_{40}(\text{pretest internalizing}) + \gamma_{50}(\text{proportion of students in the school from underrepresented background}) + \mu_{0j} + \epsilon_i$$

Hypothesis 1 was partially supported, with multilevel models examining the effect of inclusion in The Connection Project intervention groups demonstrating an impact on how teens were viewed by their classmates. Peers increased in their feelings that students in the intervention were people they felt open with and trusting of as compared to students in the control groups ($\beta = .24$, $p < .001$).

No other changes in outcomes of interest for Hypotheses 1-4 were observed. Results are presented in Tables 4-7. Participation in the intervention group did not predict increased feelings of school belongingness, increases in positive attributes in one's closest friendship (increased support and valuing, decreased conflict/betrayal, increased conflict resolution), or decreased internalizing symptoms at the end of the twelve-week intervention.

To address hypothesis 4b and test for moderation of outcomes based on baseline level of internalizing symptoms, interaction terms between status (inclusion in the intervention or control) and pre-test scores on depression were added to the base level models. To address hypothesis 5 and test for moderation of outcomes based on gender, race/ethnicity, and proportion of the school from an underrepresented racial/ethnic group, interaction terms between status and the demographic variable of interest were added to the base level models.

OUTCOME	**PREDICTOR**	**COVARIATES**
Hypothesis 4b: Effects of the program on internalizing symptoms will be moderated by baseline level of internalizing symptoms, with teens with a higher baseline level of internalizing symptoms benefiting the most from the intervention.		
Internalizing Symptoms (post-test)	Status*Children's Depression Inventory 2 (pre-test)	Gender Race/Ethnicity Pre-treatment depression score Intervention vs. control Proportion of Students from Underrepresented Racial/Ethnic Group
Hypothesis 5: Effects of the program on internalizing symptoms may be moderated by certain demographic variables, with teens that are part of an underserved demographic group benefiting the most from the intervention. *one example given		
Internalizing Symptoms (post-test)	Status*gender Status*Race/Ethnicity Status*Proportion of Underrepresented Students	Gender Race/Ethnicity Pre-treatment depression score Intervention vs. control Proportion of Students from Underrepresented Racial/Ethnic Group

Note: "Status" refers to inclusion in intervention vs. control group

No interactions with baseline levels of the outcomes of interest, gender, ethnicity, or proportion of the student body from underrepresented ethnic backgrounds were found for any of the outcomes assessed, and interactions are not included in the tables presented.

Despite the lack of direct effects on internalizing symptoms, indirect effects were tested to determine if any possible change in internalizing symptoms from the beginning to the end of the intervention period was due to the changes in peer relations impacted by the intervention. To address hypothesis 4a and examine the effects of inclusion in the intervention on internalizing symptoms as mediated by positive peer relations, the SAS macro IndTest.sas was used (Bauer, Preacher, & Gil, 2006). This allows for tests of indirect effects in multilevel models, avoiding the

potential problem of conflating within-group and between-group differences. These analyses also allow for the indirect effects of the predictor on the outcome via the mediating variables to be assessed even in the absence of a measurable direct effect, so tests for each of the hypothesized indirect effects can be conducted. Mediation models in this study are 1-1-1 models, in which the predictor, mediator, and outcomes are all assessed at the individual level (level 1), with individuals nested within groups (level 2). The macro used allows for the computation of indirect and total effects, while avoiding biased estimates of standard errors that occur when utilizing a two-model approach (Kenny, Korchmaros, & Bolger, 2003). Instead, the estimates are computed by stacking the predictor and mediator variables and creating selection variables which allows SAS to estimate multiple paths within the same model (see Figures 1 and 2). Both a normal approximation bootstrapping and Monte Carlo estimates are used for simulating the sampling distribution in order to account for parametric or nonparametric sampling distributions. In each model run, these values were close to equivalent; however, the more conservative Monte Carlo estimates are reported here.

In these mediation models, gender, ethnicity, and baseline internalizing were included as covariates for the outcome level of internalizing symptoms. Despite the possibility that during adolescence, males and females or students from different ethnic backgrounds may differentially rate the quality of their peer interactions as well, based on the lack of effect of gender or ethnicity on changes in friendship quality or peer group trust, these variables were not included as covariates for the mediator variables.

The Monte Carlo confidence intervals for the average indirect effect of participation in the intervention on internalizing symptoms via changes in peer group trust and openness as well

as changes in closest friendship qualities suggested no mediation of the intervention effects on internalizing symptoms by changes in peer relations (see Table 8).

Discussion. Study 1 of this SEL intervention found mixed support for the predicted outcomes in students at urban public schools with primarily moderate to high proportions of underrepresented youth. In this setting, students who received the intervention made changes which, over the course of twelve weeks, resulted in their classmates increasing in their feelings of openness with them as compared to students not in the intervention. This suggests that students in the intervention were able to build social competencies that allowed them to form closer connections with other students, and appear to other students to be people with whom they could be more open and less guarded. This is notable given that the interventions took place in large public schools, in non-tracked classes, at the outset of high school. This setting maximizes the possibility that students will not know or trust one another at the beginning of the year, and does not provide significant opportunity or incentive for students to become closer over time, so the fact that intervention participants were rated as people that others could be more open with after the intervention may imply that they change their behaviors based on the intervention. An important follow-up will be the examine if these changes in ratings were primarily driven by other students in the intervention, who got to know them better, or if ratings from their other classmates also increased. Regardless, this intervention did help youth to open up and form interpersonal connections in ways they likely would not have otherwise.

However, despite changes in how outside observers viewed participants, contrary to hypotheses, there were no discernible direct or indirect effects on the youths' self-reported close friendship positivity, feelings of school belongingness, or mental health symptoms directly following the intervention. Furthermore, contrary to hypotheses, intervention effects were not

moderated by participant race/ethnicity, racial/ethnic composition of the school, gender, or baseline levels of the outcomes of interest, suggesting that the intervention effects immediately following the intervention were not significantly different across these groups. A more thorough examination of these null findings can be found in the general discussion.

In addition to examining the impact of this intervention on students in large, urban, public schools, the intervention was conducted in a small, suburban, private high school in a different part of the country, allowing us to examine possible different impacts in substantively dissimilar settings.

Study 2: The Connection Project in a Suburban Private High School

Methods

Participants. Participants for this study included students from a suburban private high school in the United States South. At this private school, per their website, 71% of students identify as white/Caucasian youth, and 29% identify as students of color (full breakdown not provided). The school serves both day students and boarders; students boarding are primarily from other countries (most commonly, East Asia), and make up 22.4% of the student body. Additionally, 40% of students qualify for financial aid. Racial/ethnic background for students in The Connection Project was largely representative of their school demographics (63.1% white/Caucasian, 3.6% black, 1.2% Hispanic/Latinx, 21.4% Asian/Pacific Islander, and 10.7% multiethnic).

Data were collected from a total of 95 students (52 intervention, 43 control). These students were broken down into 8 intervention groups. Full sample demographics are shown for intervention, control, and total project youth in Table 9. Intervention groups were run during the Spring semesters of 2016-2018.

Procedure. As in Study 1, students were recruited from a non-academic life skills class at their school. Facilitators visited the classes that agreed to participate in the intervention ahead of the beginning of the intervention to describe it to students and hand out consent forms, using a comparable description and series of activities. Parent consent and student assent were collected by the students' regular class teacher and provided to the research group. The consent form and sample recruitment script are included in Appendix B.

Students who consented to participate filled out a pre-intervention packet of measures during a class period prior to the start of the intervention. Pre-test data were obtained for 81 of the 95 participating students. Students were assigned to treatment or control groups using a randomized block design. Students were blocked by gender and boarding status, given school reports that the greatest discrepancies in social status at their school occur with regard to boarding status. Within the blocks, a random number generator was used to assign the students to treatment vs. control conditions. Students in the treatment condition attended The Connection Project groups as a pullout from their scheduled class approximately once per week for twelve weeks. Session content is the same as in Study 1. Control participants attended the Life Skills class and received the regularly-scheduled curriculum as usual, which included topics such as mental and physical health, healthy romantic relationships, etc.. The Connection Project was conducted in a separate classroom on school grounds and led by two facilitators. Facilitators at this site included doctoral and undergraduate students, and met at least weekly to debrief sessions, ensure consistent implementation, and troubleshoot any challenges occurring in real time. Following the twelve-week program, post-intervention measures were collected from treatment and control participants. No compensation was provided, although students received snacks in the intervention groups and during pre/post-survey completion days.

Measures. Copies of all measures used in this project can be found in Appendix E.

***Self-Worth*:** Self-worth was assessed using a shortened (four-item) version of the Global Self-Worth subscale from the Self-Perception Profile for Adolescents (SPPA; Harter, 1988; Harter 2012). This shortened version has been found to correlate .97 with the full version. For each item, two sentence stems are presented; for example, "Some teens are very happy being the way they are," whereas "Other teens wish they were different." Participants are asked to choose which of the opposing statements *best* describes them, and how true (from "Not at all true" to "Very true") the statement is for them. This format was designed to reduce the effects of a pull for social desirability. The self-worth scale sums four items, each assessing teens' satisfaction with themselves and the way they are leading their lives, with higher scores reflecting *lower* self-worth. Internal consistency (Cronbach's α) for community samples of adolescents has been found to range from .80 to .89 (Harter, 2012).

***Broad Social Acceptance*:** Two domains of broad social acceptance were assessed. *Broad Peer Group Trust and Bonding* was assessed using the same roster-and-rating scale as in Study 1. *Self-perceived social acceptance* was also assessed using a subscale from the Self-Perception Profile for Adolescents (Harter, 1988). The format of this scale is identical to the Global Self-Worth subscale (higher scores = poorer social acceptance), and has shown good internal consistency (Cronbach's α = .77 to .90). This subscale includes four items relating to social adjustment within the larger peer group (e.g. "Some people are well liked by other people/Some people are not well liked by other people").

***Close Friendship*:** Positive close friendship experiences were assessed in two ways in this study. *Close friendship positivity* was assessed using the full-scale (40-item) version of the Friendship Quality Questionnaire (Parker & Asher, 1993), which includes the same three

subscales used in Study 1, as well as additional subscales assessing Help and Guidance, Companionship and Recreation, and Intimate Exchange. For this study, because the full scale was administered, overall close friendship positivity was able to be assessed. This questionnaire assesses the quality of a specific dyadic friendship. *Close friendship ability* was assessed using the Close Friendship Competence subscale from the Adolescent Self-Perception Profile (ASPP; Harter, 1988). This subscale consists of four items relating to the teen's ability to make/keep close friendships and is formatted identically to the Social Acceptance and Global Self-Worth subscales (higher scores = poorer ability to make/keep close friendships), with good internal consistency (Cronbach's α = .79 to .85). This questionnaire assesses how the teen views their *personal* ability to make close friendships, rather than the attributes of a particular dyadic pair.

***School Belongingness*:** Students' sense of belongingness at their school was assessed using the PISA scale, as in Study 1.

***Depressive Symptoms*:** Adolescents reported the degree of their depressive symptoms using the full Children's Depression Inventory 2 (CDI 2; Kovacs, 2010). The CDI 2 contains 27 items, each rated on a 0 to 2 scale. Item scores are summed to yield a total score for depressive symptoms. One item asking about suicidal thoughts was not administered.

***Fear of Negative Evaluation*:** Fear of negative evaluation was assessed with the Brief Fear of Negative Evaluation Inventory, a 12-item Likert-scale measure that addresses concerns about approval of others in social situations (Carleton et al., 2006; Collins et al., 2005).

Social Anxiety: Social anxiety was measured using the social self-efficacy subscale of the Self-Efficacy Scale (SES; Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982). This subscale consists of six questions answered on a 5-point Likert scale assessing how efficacious respondents feel in various social situations. Social self-efficacy has been found to be

highly correlated with social phobia, r=.51 (Muris, 2002), and changes in self-efficacy directly predict changes in social anxiety in clinical populations (Gaudiano & Herbert, 2003).

***Trait Anxiety*:** Trait anxiety was assessed using the A-Trait subscale of the State-Trait Anxiety Inventory (STAI; Speilberger, Gorsuch, & Lushene, 1970). This questionnaire was developed and is used broadly across both adolescents and adult samples, with the A-Trait version used to examine relatively stable, average levels of anxiety felt by a person. Internal consistency for this measure has been excellent across studies, with average Cronbach's $\alpha = .89$ to .90 (Barnes, Harp, & Jung, 2002). Test-retest reliability under differing levels of stress is also excellent ($r = .97$; Metzger, 1976), suggesting this measure adequately differentiates between in-the-moment anxiety and trait anxiety.

Results and Discussion

Power. As in Study 1, Optimal Design software was used to determine statistical power to detect intervention effects. Data were collected from the 95 private school students across 8 classes (average of 12 students per class). Unlike in Study 1, older students were combined with ninth graders for analyses for three reasons: 1.) Older students only take the class we were drawing from if they are new to the school, and thus, by definition, have just experienced a transition; 2.) There were no interactions of grade level for any outcomes of interest; 3.) Due to the small sample, maximizing power as possible was a goal. Using identical assumptions ($\sigma^2 =.05$, 5% of outcome variance explained at the site (classroom) level, and 50% of variance in outcomes predictable from baseline measures, $\alpha = .05$), power is estimated at .74 to detect medium effects ($\delta = .50$) and .18 to detect small effects ($\delta = .20$), suggesting that care must be taken in the interpretation of null findings.

Attrition. Of the 95 students who provided consents, 81 participated in the pre-test. Of the initial 95 students who agreed to complete the measures packets and be randomized into the treatment or control condition, data were obtained for 87 (91.6%) at post-test (of the 8 students who did not provide data at post-test, 5 students were in the control condition and 3 were in the intervention condition). Attrition analyses were conducted prior to primary analyses to assess any bias due to dropout/attrition in post-test measures based on scores on baseline measures of interest, as well as gender, international student status, and intervention participation. As in study 1, Chi-square tests were used when the variables assessed as predictors were categorical (e.g., gender), and logistic regression was used when variables assessed as predictors were continuous (e.g., baseline depression score). The only pre-test variable which differentially predicted dropout was baseline depression score, with students who had higher baseline depression scores actually slightly *more* likely to complete post-test measures (p = .044; for each unit increase in depression score, the odds of dropout changed by .917, and the log-odds decreased by .09). Because data which are missing related to observed scores are still considered to be MAR (Jeličić, et al., 2009), as in Study 1, missing data in this sample will be handled using full information maximum likelihood (FIML) methods.

Preliminary Analyses. Means and standard deviations for all scales used are presented in Table 10.

As in Study 1, prior to running the primary analyses of interest, correlations were examined between outcomes of interest to assess whether any variables assessing similar constructs should be combined as part of broader constructs. Given the high intercorrelations among self-report measures, a factor analysis of all self-reported outcomes of interest (depression symptoms, fear of negative evaluation, self-worth, trait anxiety, social self-efficacy,

social acceptance, feelings of belongingness at school, close friendship competence, and each measure of positivity in their closest friendship) was conducted to determine which of these measures should be combined. Factor analysis proceeded using the same methods as outlined in Study 1.

For this overall factor analysis assessing factorability of self-report measures of interest, MSA suggested that factor analysis was appropriate for these data (MSA = .82). Three factors with eigenvalues of 4.67, 3.07, and 1.06 were retained. Eigenvalues and the subjective screen test demonstrated agreement, and maximum likelihood parameter estimation confirmed a three-factor solution. The promax rotation showed that all measures of positivity in their closest friendship along with overall close friendship competence loaded onto the first factor, depression symptoms, fear of negative evaluation, self-worth, and trait anxiety loaded onto the second factor, and social self-efficacy, social acceptance, and feelings of belongingness at school loaded onto the third factor (see Table 11). Factor 1 accounted for 18.19% of the variance, factor 2 accounted for 18.63% of the variance, and factor 3 accounted for 6.74% of the variance. Based on these outcomes, the items loading onto factor 1 were combined to form a factor designated as *close friendship competence.* This combined measure was found to have $\alpha = .74$, further confirming good internal consistency. The items loading onto factor 2 were combined to form a factor designated *internalizing symptoms.* This combined measure was found to have $\alpha = .89$, further confirming excellent internal consistency. Items loading onto factor 3 were combined to form a factor designated as *self-perceived social competence and belongingness*. This combined measure was found to have $\alpha = .83$, further confirming good internal consistency.

Simple correlations between factors and variables used in primary analyses are presented in Table 12.

Primary Analyses. All analyses were conducted using SAS Enterprise Guide ®, Version 7.1. Multi-level models (MLMs) were used following the methods described in Study 1. In each analysis in Study 2, multiple level 1 variables were controlled for (boarding status and baseline level of outcome of interest) due to the likelihood that these variables might impact the outcomes of interest. Gender was treated using the same method as in Study 1.

As in Study 1, classes were designated as "groups," and to allow for the possibility that different classes began with different levels of baseline characteristics, varying intercepts at the class level were accounted for. Given the possibility that the effect of being in the intervention groups might vary based on class, status as intervention or control was also examined as a random effect. AIC, BIC, and -2 Log Likelihood values were considered in comparing the model fits. Again, while the more complex models frequently had incrementally improved AIC and BIC values, comparing -2 Log Likelihoods is the preferred method for testing models differing in terms of variance components (C. Tong, personal communication, October 5th, 2017). Again, model fit did not improve when adding this random effect to any of the planned models, and final results reported account only for random intercept in all other models.

Hypotheses 1-5 were assessed using identical analytic strategies to those in study 1. All outcomes are measured at post-treatment.

Hypothesis 1 was partially supported, with multilevel models examining the effect of inclusion in The Connection Project intervention groups demonstrating an impact on how socially competent teens felt, and how teens were viewed by their classmates. Teens in the intervention increased significantly in their own feelings of social competence and belongingness as compared to students in the control groups ($\beta = .12$, $p = .011$). Peers also increased marginally

in their feelings that students in the intervention were people they felt open with and trusting of as compared to students in the control groups ($\beta = .07$, $p = .054$).

No other changes in outcomes of interest for Hypotheses 1-4 were observed. Results are presented in Tables 13-16. Participation in the intervention group did not predict increases in positive attributes in one's closest friendship or decreased internalizing symptoms at the end of the twelve-week intervention.

No interactions with baseline levels of the outcomes of interest, gender, or boarding status were found for any of the outcomes assessed, though several interactions reached marginal significance ($.05 < p < .10$), suggesting the possibility that with greater power, interactions may have been detected. However, due to the lack of significance and uncertainty, interactions are not included in the tables presented.

Despite the lack of direct effects on internalizing symptoms, indirect effects were tested to determine if any possible change in internalizing symptoms from the beginning to the end of the intervention period was due to the observed changes in peer relations impacted by the intervention. To address hypothesis 4a and examine the effects of inclusion in the intervention on internalizing symptoms as mediated by positive peer relations, the same SAS macro used in Study 1 was again used in Study 2 (Bauer et al., 2006), and Monte Carlo confidence intervals are reported in Table 17.

In these mediation models, gender, boarding status, and baseline internalizing were included as covariates for the outcome level of internalizing symptoms. In the model examining self-reported social competence as a mediator, gender was also included as a covariate for the mediator, based on the strong relation between this variable and gender (boys significantly increased in self-reported social competence as compared to girls, $p = .001$).

The Monte Carlo confidence intervals for the average indirect effect of participation in the intervention on internalizing symptoms via changes in peer group trust and openness as well as changes in closest friendship qualities suggested no mediation of the intervention effects on internalizing symptoms by changes in peer relations (see Table 17).

Discussion. Study 2 extended the program evaluation to a second, significantly different group of youth in terms of their general socioeconomic and sociocultural backgrounds: a suburban private school with a yearly tuition ranging from $25,000-$42,000, serving a mix of day students and boarding students. Despite the differences in school context, results of the intervention were similar in this study, with participation in the intervention groups leading to a trend toward increases in classmates' reports of feelings of openness with the students in the intervention. It is likely that with greater power to detect the effect, this change would have met significance as in Study 1. In addition, in Study 2, intervention participants' own feelings of social competence and belongingness increased over the course of the intervention (this outcome was not comparably measured in Study 1). Again, no significant direct or indirect effects were found for mental health symptoms or close friendship positivity, and no moderating effects of gender, boarding status, or baseline level of outcomes of interest. While this study was significantly underpowered to detect small to medium effects, these results supported those found in Study 1, and suggest that similar mechanisms of change may be at work for this intervention, across settings.

General Discussion

This study finds that a 12-session SEL intervention provided at the beginning of high school can affect student social skills and social competence across multiple school settings. The predominant outcome of this study, in which we see change related to how *others* view the

intervention participants, particularly in large public schools, suggests that there has been some noticeable behavioral change. Classmates' ratings of their ability to be open with intervention participants in the public schools, and potentially in the private school, suggests that students in the intervention begin behaving differently toward their classmates, in ways that better invite trust and positive feelings. Given that one of the predominant goals of the intervention is to help students to gain skills allowing them to make connections with peers and improve their school climate, this suggests at least moderate success in that domain. In particular, it is notable that this change is seen given that students in the intervention groups were pulled out of their normal classes, and thus had less opportunity to interact with their non-intervention classmates. This was particularly true in Study 2, where for most students, the intervention fully replaced class time in their Life Skills class for their last quarter of the school year. A follow-up examination of the data would be valuable to learn whether the increased trust of these students is driven primarily by change in scores only from students who were also in the intervention, or if their non-intervention peers rated them significantly more easy to be open with as well. If they are rated more positively by their non-intervention peers, this would lend additional support to these findings. However, the interpretation that the students receiving the intervention are behaving in a more open and inviting manner, rather than simply that they were in a smaller group together, is strengthened by a few considerations: 1.) Because the intervention participants were pulled out during class time, the control participants and non-participating students also had a smaller class group, suggesting it wasn't simply that being with fewer peers gave them the chance to get to know one another better; 2.) In most classes in Study 1 and Study 2, excepting students drawn from a study hall class, the Health classes and Life Skills class that the intervention students were pulled from were specifically designed to enhance social skills/mental health, among other

topics. Topics covered by Study 1 Health classes include “mental health” and “emotional health,” and topics covered by Study 2 Life Skills include “healthy relationships, stress management, and effective communication,” suggesting that the intervention improved peer bonds over and above any improvement that the control participants would also gain from regular class material that had similar goals as the intervention. The trending changes in peer reports found in Study 2 may also suggest that class as usual in the private school setting provided opportunities for students in the control condition to also gain more of the same competencies as intervention participants as compared to Study 1 control students.

Results from Study 2 also suggest that students who receive the intervention experienced changes in their social skills/confidence, as reported by peers, *and* perceived changes in how socially accepted they were by their peers, based on their self-reports. This suggests that at least in the short-term, this intervention succeeds in part in the dual goals of both attitude and behavior change: assuming the self-reported social competence findings would have looked similar in Study 1 had they been assessed, intervention youth seem to leave the intervention both seeing themselves as more adept at negotiating and having an impact on their social worlds, and behaving in ways which positively change how their peers view them as potential sources of support or openness. These changes occurred across social groups within each school, in groups whose constituents were randomly assigned to be together, showing that youth who are heterogeneous in terms of social statuses, baseline social ability levels and likeability, and baseline beliefs about the importance of connection are all able to come together and be impacted. Perhaps as importantly, students in the intervention did not get *worse* on any outcomes of interest, suggesting that iatrogenic outcomes did not occur in the domains of internalizing symptoms or peer relations as a result of the intervention.

Despite these promising changes, many of the expected outcomes of the intervention were not observed. While there are numerous possible explanations for this lack of findings in the domains of participants' closest friendships and mental health, this program was a twelve-week program intending to begin a recursive cycle of positive change in participants' peer relations. It is perhaps unsurprising that outcomes such as change in mental health or change in the positivity of already-established friendships, both of which are based on significantly more extended patterns of behavior, expectation, and experience, might not show significant change over such a brief window of time. While the intervention provides significant repeated positive experiences, the assessment window may be too brief to note change, given the recursive goals of the program. The program focused most directly on changes which would be expected to lead to change in general peer relations, with the hope that, like with other "wise" interventions, these positive changes would pave the way for continued positive growth in the areas of close peer relationships and mental health (Walton & Cohen, 2011). In fact, in most of the brief intervention studies from whose components The Connection Project was in part drawn, change was assessed over greater time intervals than the three months assessed by this study.

In addition to theoretical support for the idea that changes in the variables currently showing null findings might be observable over a longer time span, preliminary follow-up data analyses for Study 1 suggest that this is exactly the pattern that is emerging. In addition to the post-test measures administered immediately following the intervention, follow-up measures are given approximately four to five months after the intervention groups have concluded. Follow-up measures for the final semester of intervention groups have not yet been collected; however, for an initial subsample of the first 228 ninth graders to take part in the study, at follow-up data collection, youth in the intervention groups were still significantly more strongly rated as people

who could be trusted by their prior semester classmates (who, notably, were not necessarily in the same classes as them anymore). However, they also showed significantly increased self-esteem and sense of belonging, as well as decreased depressive symptoms, particularly for "at-risk" youth in the sample (Allen, Narr, Nagel, & Guskin, 2018). These results will be re-assessed with the full sample of data, but at this time, it appears likely that The Connection Project plants seeds for youth by helping them to create stronger social competencies over the time they are in the intervention, and these seeds take root and germinate over time to improve other aspects of their socio-emotional lives.

Although these preliminary follow-up results are a promising coda to the intervention, questions remain about why the intervention did not have more immediate effects in all of the hypothesized domains. It could be that while the program allowed youth to become closer to their intervention groups, there was insufficient material helping them to directly learn how to generalize those skills to their already-existent friends and peer groups. The capacity for abstract and hypothetical thinking is only just occurring during the transition from late childhood through middle adolescence (Steinberg, 2005), suggesting that the task of generalizing the new skills they were building directly and immediately to other relationships may have proved outside their present ability level. In addition, a great deal beyond social acceptance relates to internalizing difficulties in adolescence (and other ages), suggesting that this may not have had a potent enough effect to lead to changes in internalizing symptoms, especially over such a brief period of time. In both cases, it could be that the curriculum needs to be modified to more directly address these topics; in particular, the topic of existing friendships and how those function for adolescents (as well as how they could function differently) would be well within the scope of the current curriculum.

Surprisingly, the positive changes found for this program were not affected by any hypothesized moderators at post-test, in either study. Given past work that demonstrated significantly stronger effects of social belongingness interventions and values affirmation interventions for more at-risk groups such as underrepresented racial/ethnic groups (Walton & Cohen, 2011; Cohen et al., 2009; Cohen et al., 2006), women in STEM fields (Miyake et al., 2010), and students higher in antisocial tendencies (Thomas et al., 2012), the lack of moderation by gender, race/ethnicity (Study 1), international/boarding status (Study 2), and baseline levels of outcomes of interest was surprising. It is possible that The Connection Project manages to equally benefit all youth, regardless of background. It was set up in ways that make it unique compared to the theoretical components used to build it, as discussed earlier, so the idea that it may be a truly "universal" adolescent SEL intervention may be the most parsimonious. Even the differential settings and levels of risk provided by Study 1 and Study 2 did not lead to substantial differences in intervention impact. However, it seems more likely that, as with the other outcomes hypothesized to emerge over time, differences in the intervention effects based on these proposed moderators may *also* emerge more clearly over time. Either in addition or alternatively, it could be that despite the theoretical similarities, the moderators proposed in these analyses may be less applicable in the case of this intervention than they have been shown to be in others. Although this intervention used some similar mechanisms such as values affirmation and social belongingness, it focused much more directly on forming and maintaining bonds, compared to other "wise" interventions. This differential focus may mean that the aspects of identity that lead to students of color or women being more at-risk in some school settings were not activated by this intervention, and thus did not lead to differential impact. Indeed, in the preliminary analyses previously referenced, students who were the most "at-risk," as defined by

low parental education level, showed greater gains from the intervention than those who were less “at-risk,” across multiple outcome measures (Allen et al., 2018). This suggests that when considering where and how SEL interventions will impact youth, it is important to increase our consideration of what it means to be “at-risk” or in need of intervention beyond some of the attributes most typically expected by the field of psychology, such as gender and race/ethnicity. Rather, while these attributes may impact some areas of concern, socio-emotional need and benefits may be likely to have complexities beyond than these constructs.

Given the preliminary findings suggesting significant effects for ninth graders and insignificant changes for older students, an attribute which this intervention evaluation does speak to is the importance of targeting transition periods. Transitioning from middle school to high school involves significant change and adaptation: most students move to a much larger school where they know many fewer of the other students, they experience increased academic pressure and more extracurricular opportunities, and peer relationships near their peak importance. All of these changes occur in tandem with significant biological and emotional changes brought on by puberty. Finding ways to help ease this transition using easily available supports – other students who share their experiences and concerns, and can thus empathize – could have a major impact as far as setting youth on a positive trajectory early into their new setting. This is something which may be much harder to do the further they get from this transition point, once they settle into their expectations for the high school experience. Helping teens to feel more comfortable and confident in their social milieu early on, and teaching them ways to be open to and supportive of others, has the potential to help these young people make a difference for themselves and their communities as they move forward.

Limitations and Future Directions. There were several notable limitations to this study. Although the sample was randomly assigned to control and intervention groups, it is possible that there was a selection bias in who signed up for the study at all, which may have led to either inflated or understated effects, if youth who "opted in" responded in different ways to the intervention than youth who did not would have. Youth in the intervention also may have demonstrated more of a response bias in their post-surveys, given that they were aware the intervention was designed to bring them closer together and help them form stronger connections with peers, which may have inflated these effects. Additionally, although there were multiple schools that participated in this evaluation and similar results were found for the public and private schools, the range of school types, level of available resources, and student population were limited to two communities. It is not possible to know if these results would hold in other communities, or how the intervention might need to be adapted to the needs of different school districts. Both studies, and particularly Study 2, varied from somewhat to significantly underpowered, making it difficult to ascertain the full extent of effects in either setting. This lack of certainly may also somewhat limit the ability to generalize the findings from that study to even other similar schools. Dosage has also not been considered in these analyses; in both studies, some youth were absent from school at various times throughout the curriculum, and differences in the amount and content of material received may matter significantly for outcomes. This should be addressed in a future study. Both Studies 1 and 2 were also only able to assess mediation of main effects with the mediator and the outcome measured at the same time point. In addition, while only ninth-graders were studied in this project, it would be useful to assess older students as well to discern if the program has differential effects for them, or if it is solely helpful following the transition to high school. Finally, this study is limited to assessing

student-level change at post-survey, but given preliminary findings and the results of previous studies, follow-up analyses should be conducted.

As this project continues, there are a plethora of future directions that would provide pertinent information. As addressed, an important next step will be to conduct assessments of follow-up data for the full sample in Study 1. This will allow a better understanding of what changes The Connection Project sets in motion, and for whom, over time. In addition, there will be sufficient power to assess mediation using all three time points and begin to understand the pathways of change over time. Given the results of this study, it might be expected that changes in close friendship relationships and/or mental health at follow-up would be mediated by the changes in social competencies found at post-test.

In addition, other measures were collected along with those assessing broad and close peer competencies and internalizing symptoms, so the impact of this project on other aspects of socio-emotional and scholarly health (e.g., grades, externalizing behaviors, etc.) should continue to be assessed. An ongoing question, which a future study of this program should also assess, is whether or not changes are seen in the close friends and peer groups of the intervention students, or whether changes are limited to the students who actually participate in the intervention groups. This would help schools who are considering using The Connection Project as a school-wide SEL program to determine whether it is necessary for every ninth-grader to receive the intervention, or if it can be given in a more pared down or targeted way and be subject to a contagion effect. Finally, the boundaries of this program should be assessed by running the intervention in other types of high school such as charter schools and alternative schools, other communities with different demographic makeups around the country, urban vs. suburban

communities, etc. It would also be helpful to know whether it can be successfully implemented by school staff, or if having outside personnel deliver the intervention is critical to success.

Conclusion. Although there is work yet to be done to refine our understanding of in what ways, for whom, and under what circumstances this program will be the most helpful, it is promising that some aspects of peer relations and intrapersonal beliefs and competencies seem to be improving as a result of participation. Given the tendency of youth to turn to their peers for support during high school combined with how under-resourced most schools are to individually work with each youth, building a school community with youth who are more open and supportive with one another could be a powerful way forward for adolescent socio-emotional development, and potentially even future mental health, given the close ties among those domains. Youth from different backgrounds and communities are able to find common ground through this intervention and change in ways which invite others in more effectively. This program suggests that positively influential interpersonal relationships do not need to be consigned to chance or special circumstances, but can potentially be built or at least enhanced within school peer settings, with the potential to reach many more youth.

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Study 1 Tables

Table 1

Demographics

	Intervention	Control	Total
Gender (M/F)	M: 95 (47.7%) F: 103 (51.8%) Transgender/Other: 1 (0.5%)	M: 78 (47.3%) F: 85 (51.5%) Transgender/Other: 2 (1.2%)	M: 174 (47.7%) F: 188 (51.5%) Transgender/Other: 3 (0.8%)
Age	14.9 years (S.D. = .45)	14.9 years (S.D. = .43)	14.9 years (S.D. = .44)
Percentage with at least one parent with high school diploma	167 (93.3%)	138 (95.1%)	305 (94.1%)
Percentage with both parents present during childhood	104 (54.5%)	92 (57.1%)	196 (55.8%)
Race/Ethnicity			
Black/African American	113 (56.5%)	92 (55.2%)	205 (56.0%)
Hispanic/Latinx	23 (11.5%)	16 (9.7%)	39 (10.7%)
White, non-Hispanic	29 (14.5%)	34 (20.6%)	63 (17.2%)
Asian/Pacific Islander	3 (1.5%)	2 (1.2%)	5 (1.4%)
Multi-ethnic	22 (11.0%)	16 (9.7%)	38 (10.4%)
Native American	3 (1.5%)	1 (0.6%)	4 (1.1%)
Other	7 (3.5%)	5 (3.0%)	12 (3.3%)

Table 2

Means and Standard Deviations of Uncombined Variables

Substantive Variables	Mean	SD
1. Self-Worth Score (T1)	25.67	6.01
2. Self-Worth Score (T2)	25.63	6.47
3. Peer Group Trust (T1)	1.49	0.61
4. Peer Group Trust (T2)	2.13	0.70
5. Close Friendship Support/Valuing (T1)	29.90	8.19
6. Close Friendship Support/Valuing (T2)	30.29	8.30
7. Close Friendship Conflict/Betrayal (T1)	7.48	4.80
8. Close Friendship Conflict/Betrayal (T2)	7.81	5.38
9. Close Friendship Conflict Resolution (T1)	7.92	2.71
10. Close Friendship Conflict Resolution (T2)	7.99	2.90
11. School Belongingness (T1)	17.95	3.41
12. School Belongingess (T2)	18.05	3.55
13. Depression Score (T1)	12.18	4.04
14. Depression Score (T2)	12.46	4.25

Table 3

Intercorrelations of Factors and Substantive Variables

Substantive Variables	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Internalizing Score (T1)	.79***	-.07	-.06	-.17**	-.20***	.12*	.07	-.05	-.14**	-.66***	-.71***
2. Internalizing Score (T2)	--	-.05	-.07	-.15**	-.25***	.12*	.11*	-.07	-.21***	-.53***	-.67***
3. Peer Group Trust (T1)		--	.62***	.09	.09+	.03	-.03	.12*	.11*	.10+	.13*
4. Peer Group Trust (T2)			--	.09+	.12*	.00	-.01	.13*	.20***	.12*	.17**
5. Close Friendship Support/Valuing (T1)				--	.53***	-.27***	-.17**	.67***	.33***	.13*	.14*
6. Close Friendship Support/Valuing (T2)					--	-.19***	-.26***	.32***	.68***	.19***	.22***
7. Close Friendship Conflict/Betrayal (T1)						--	.46***	-.09+	-.17**	-.09+	-.07
8. Close Friendship Conflict/Betrayal (T2)							--	-.06	-.16**	.02	.01
9. Close Friendship Conflict Resolution (T1)								--	.34***	.08	.06
10. Close Friendship Conflict Resolution (T2)									--	.12*	.18**
11. School Belongingness (T1)										--	.72***
12. School Belongingess (T2)											--

*Note: *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. + $p \leq .10$*

Table 4

Effect of TCP on Change in Broad Peer Group Trust
ICC = 0.298; 29.82% of variance in broad peer group trust attributable to class

Parameter	Estimate	S.E.
Fixed Effects		
Intercept	.12	.09
Intervention Status	.24***	.03
Ethnicity	-.01	.03
Baseline Peer Group Trust	.64	.04
Proportion of Student Body From Underrepresented Ethnic Background	-.04	.10
Random Effect Covariance Parameters		
Class Intercept Variance	.18***	.06
Residual	.33***	.03

*Note: *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. + $p \leq .10$*

Table 5

Effect of TCP on Change in School Belongingness
ICC = 0.031; 3.11% of variance in school belongingness attributable to class

Parameter	Estimate	S.E.
Fixed Effects		
Intercept	.06	.04
Intervention Status	-.03	.04
Ethnicity	-.08*	.04
Baseline School Belongingness	.68***	.04
Proportion of Student Body From Underrepresented Ethnic Background	.03	.05
Random Effect Covariance Parameters		
Class Intercept Variance	.00	.00
Residual	.49***	.04

*Note: *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. + $p \leq .10$*

Table 6

Effect of TCP on Change in Close Friendship Quality

Support and Valuing

ICC = 0.014; 1.43% of variance in support and valuing attributable to class

Parameter	Estimate	S.E.
Fixed Effects		
Intercept	.01	.04
Intervention Status	-.03	.03
Gender	.10*	.04
Ethnicity	-.01	.04
Baseline Support and Valuing	.51***	.04
Proportion of Student Body From Underrepresented Ethnic Background	.01	.04
Random Effect Covariance Parameters		
Class Intercept Variance	.02	.02
Residual	.68***	.04

Conflict and Betrayal

ICC = 0.001; 0.12% of variance in conflict and betrayal attributable to class

Parameter	Estimate	S.E.
Fixed Effects		
Intercept	-.67**	.09
Intervention Status	-.01	.05
Ethnicity	-.08	.05
Baseline Conflict and Betrayal	.10***	.01
Proportion of Student Body From Underrepresented Ethnic Background	-.01	.06
Random Effect Covariance Parameters		
Class Intercept Variance	.00	.02
Residual	.87***	.07

*Note: *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. + $p \leq .10$*

Table 6 (cont'd)

Conflict Resolution		
ICC = 0.000; 0.00% of variance in conflict resolution attributable to class		
Parameter	Estimate	S.E.
Fixed Effects		
Intercept	.01	.05
Intervention Status	.05	.05
Ethnicity	.04	.05
Baseline Conflict Resolution	.35***	.05
Proportion of Student Body From Underrepresented Ethnic Background	-.06	.06
Random Effect Covariance Parameters		
Class Intercept Variance	.00	.00
Residual	.85***	.07

*Note: *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. + $p \leq .10$*

Table 7

Effect of TCP on Change in Internalizing Symptoms

ICC = 0.056; 5.64% of variance in internalizing attributable to class		
Parameter	Estimate	S.E.
Level I Fixed Effects		
Intercept	-.04	.04
Intervention Status	.00	.04
Ethnicity	.07*	.04
Baseline Internalizing	.78***	.04
Proportion of Student Body From Underrepresented Ethnic Background	-.06	.04
Random Effect Covariance Parameters		
Class Intercept Variance	.01	.01
Residual	.39***	.03

*Note: *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. + $p \leq .10$*

Table 8

Monte Carlo Confidence Intervals for Indirect Effects of Intervention on Change in Internalizing Symptoms via Change in Peer Relations

Mediator	Alpha	Draws	Lower Confidence Limit	Upper Confidence Limit
Broad Peer Group Trust	.05	10000	-.04	.09
Support/Valuing	.05	10000	-.03	.03
Conflict and Betrayal	.05	10000	-.03	.02
Conflict Resolution	.05	10000	-.04	.02

Study 2 Tables

Table 9

Demographics

	Intervention	Control	Total
Gender (M/F)	M: 19 (40.4%) F: 27 (57.5%) Transgender: 1 (2.1%)	M: 11 (29.0%) F: 27 (71.0%)	M: 30 (35.3%) F: 54 (63.5%) Transgender: 1 (1.2%)
Grade	9th grade: 45 (95.7%) 10th grade: 2 (4.3%)	9th grade: 36 (94.7%) 10th grade: 2 (5.3%)	9th grade: 81 (95.3%) 10th grade: 4 (4.7%)
Age	15.2 years	14.8 years	15.0 years
Percentage with at least one parent with high school diploma	47 (100%)	38 (100%)	85 (100%)
Percentage with both parents present during childhood	42 (91.3%)	36 (94.7%)	78 (92.9%)
Percentage of boarding students	7 (14.9%)	7 (18.4%)	14 (16.5%)
Race/Ethnicity			
Black/African American	3 (6.5%)	--	3 (3.6%)
Hispanic/Latinx	1 (2.2%)	--	1 (1.2%)
White, non-Hispanic	28 (60.9%)	25 (65.8%)	53 (63.1%)
Asian/Pacific Islander	10 (21.7%)	8 (21%)	18 (21.4%)
Multi-ethnic	4 (8.7%)	5 (13.2%)	9 (10.7%)
Native American	--	--	--
Other	--	--	--

Table 10

Means and Standard Deviations of Uncombined Variables

Substantive Variables	Mean	SD	Variable.	Mean	SD
1. Self-Worth Score (T1)	9.04	3.49	15. School Belongingness (T1)	18.48	3.85
2. Self-Worth Score (T2)	8.40	3.52	16. School Belongingess (T2)	18.49	4.04
3. Peer Group Trust (T1)	3.38	.47	17. Depression Score (T1)	11.55	7.51
4. Peer Group Trust (T2)	3.39	.43	18. Depression Score (T2)	10.87	8.35
5. Social Acceptance (T1)	7.84	3.15	19. Fear of Negative Evaluation (T1)	38.66	10.96
6. Social Acceptance (T2)	7.68	3.17	20. Fear of Negative Evaluation (T2)	37.75	10.67
7. Close Friendship Competence (T1)	6.34	2.58	21. Social Self-Efficacy (T1)	16.86	3.98
8. Close Friendship Competence (T2)	6.97	3.00	22. Social Self-Efficacy (T2)	17.06	3.87
9. Close Friendship Positivity Overall (T1)	120.54	23.04	23. Trait Anxiety (T1)	43.81	11.78
10. Close Friendship Positivity Overall (T2)	122.34	25.70	24. Trait Anxiety (T2)	42.81	12.16
11. Close Friendship Support/Valuing (T1)	31.25	7.28			
12. Close Friendship Support/Valuing (T2)	31.72	7.67			
13. Close Friendship Conflict Resolution (T1)	8.51	2.50			
14. Close Friendship Conflict Resolution (T2)	8.39	2.70			

Table 11

Factor Structure (Semipartial Correlations)

	Factor 1	Factor 2	Factor 3
Closest Friendship Validation/Caring (T2)	.91*	-.11	.11
Closest Friendship Intimate Exchange (T2)	.90*	.13	-.08
Closest Friendship Help/Guidance (T2)	.85*	.03	.01
Closest Friendship Conflict Resolution (T2)	.58*	.10	-.17
Closest Friendship Conflict and Betrayal – Reversed (T2)	.53*	-.14	.25
Closest Friendship Companionship/Recreation (T2)	.52*	.05	-.34
Close Friendship Competence (T2)	.42*	-.11	.25
Trait Anxiety (T2)	-.04	.85*	.04
Depression Score (T2)	.01	.81*	.01
Self-Worth Score (T2)	-.07	.67*	.08
Fear of Negative Evaluation (T2)	.13	.56*	.08
Social Acceptance (T2)	-.10	-.04	.89*
Social Self-Efficacy (T2)	.12	-.16	.48*
School Belongingness (T2)	.01	-.30	.48*

*Note: Values greater than .40 are flagged with a *.*

Table 12

Intercorrelations of Factors

Substantive Variables	2.	3.	4.	5.	6.	7.	8.
1. Internalizing Symptoms (T1)	.87***	-.03	-.09	-.55***	-.52***	.03	-.03
2. Internalizing Symptoms (T2)	--	.06	-.18+	-.47***	-.53***	.09	.00
3. Close Friendship Competence (T1)		--	.48***	.25*	.16	.13	.21*
4. Close Friendship Competence (T2)			--	.28**	.37***	.12	.18+
5. Social Competence and Belonging (T1)				--	.88***	-.06	.02
6. Social Competence and Belonging (T2)					--	-.11	.01
7. Broad Peer Group Trust (T1)						--	.89***
8. Broad Peer Group Trust (T2)							--

*Note: *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. + $p \leq .10$*

Table 13

Effect of TCP on Change in Internalizing Symptoms
ICC for Unconditional Means Model = 0.00; 0.00% of variance in internalizing symptoms attributable to class

Parameter	Estimate	S.E.
Fixed Effects		
Intercept	.08	.08
Intervention Status	-.04	.06
International Status	-.02	.06
Baseline Internalizing	.89***	.06
Random Effect Covariance Parameters		
Class Intercept Variance	.02	.02
Residual	.22***	.04

*Note: *** p ≤ .001. ** p ≤ .01. * p ≤ .05. + p ≤ .10*

Table 14

Effect of TCP on Change in Close Friendship Positivity
ICC for Unconditional Means Model = 0.007; 0.65% of variance in support and valuing attributable to class

Parameter	Estimate	S.E.
Fixed Effects		
Intercept	-.01	.10
Intervention Status	.02	.10
International Status	.04	.11
Baseline Close Friendship Positivity	.48***	.10
Random Effect Covariance Parameters		
Class Intercept Variance	.00	.00
Residual	.57***	.09

*Note: *** p ≤ .001. ** p ≤ .01. * p ≤ .05. + p ≤ .10*

Table 15

Effect of TCP on Change in Social Competence and Belonging
ICC for Unconditional Means Model = 0.00; 0.00% of variance in social acceptance attributable to class

Parameter	Estimate	S.E.
Fixed Effects		
Intercept	-.05	.08
Intervention Status	.12*	.05
Gender	-.12*	.05
International Status	-.03	.06
Baseline Social Competence/Belonging	.84***	.05
Random Effect Covariance Parameters		
Class Intercept Variance	.03	.02
Residual	.16***	.03

*Note: *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. + $p \leq .10$*

Table 16

Effect of TCP on Change in Trust and Openness by Peers
ICC for Unconditional Means Model = 0.09; 9.04% of variance in trust and openness by peers attributable to class

Parameter	Estimate	S.E.
Fixed Effects		
Intercept	.00	.10
Intervention Status	.07*	.04
International Status	.01	.04
Baseline Trust and Openness by Peers	.96***	.05
Random Effect Covariance Parameters		
Class Intercept Variance	.07*	.04
Residual	.11***	.02

*Note: *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. + $p \leq .10$*

Table 17

Monte Carlo Confidence Intervals for Indirect Effects of Intervention on Change in Internalizing Symptoms via Change in Peer Relations

Mediator	Alpha	Draws	Lower Confidence Limit	Upper Confidence Limit
Broad Peer Group Trust	.05	10000	-.17	.05
Social Competence/ Belonging	.05	10000	-.18	.07
Close Friendship Positivity	.05	10000	-.12	.02

Figure 1 – General Mediation Model

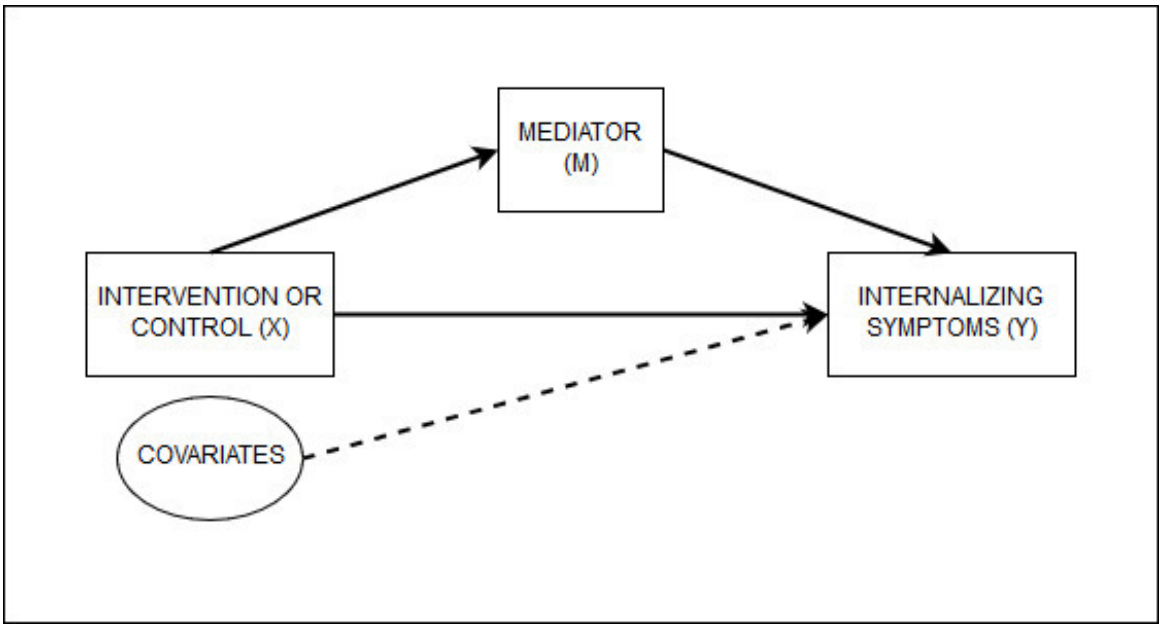
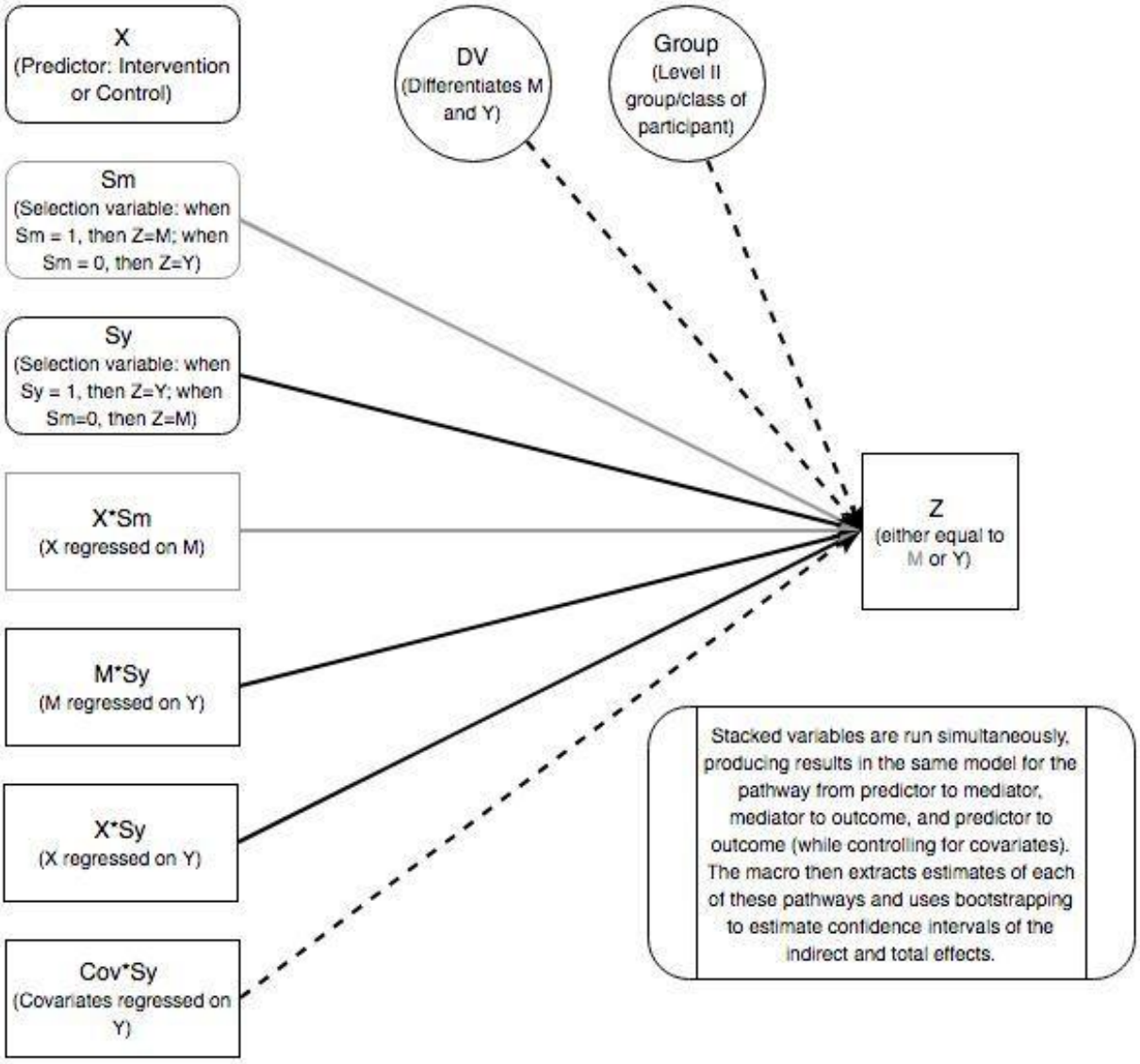


Figure 2 – SAS Mediation Macro Diagram



Appendix A: Study 1 Sample Recruitment Script and Consent Forms

Sample Recruitment Script – Study 1

Materials:

- Dry Erase Board (1 per group), Dry Erase Marker (1 per group), Tissues to clean boards

Opener: (2 min)

- *Good morning! I'm Crystal. I'm Heather. And we're with Wyman. Discuss their connection to Wyman (if applicable). Thanks for letting us come in and talk with you about our group, The Connection Project. We meet once a week during this class period and today, we're going to show you some of kinds of activities we do and some topics we talk about in the group.*

Activities:

1. Connection Trivia Game (5-6 min): *First, we're going to ask a few trivia questions to see what you know about healthy connections with others.* *Toss candy to students with correct answers*

    1) In which decade of life are people usually the happiest?
       A) Age 1-10 B) Age 11-20 C) Age 31-40 **D) Age 61-70**
    2) True or **False**: 1 in 10 adults feels socially isolated. (**Actually 1 in 4**)
    3) What is one positive thing that is gained by learning how to have strong friendships? (**higher salary, better romantic relationships later in life, lower rates of depression in adulthood, better heart health, later mortality…**)
    4) What is cortisol? (**stress hormone**)
    5) **True** or False: Our bodies produce more cortisol when we are alone.
    6) Which of the following are the long term impacts of stress and isolation on our bodies?
       A) Higher blood pressure and lower intelligence
       B) Higher blood pressure and anxiety
       C) Anxiety and diabetes
       D) Higher blood pressure and lower anxiety

2. Group Challenge (10 min): *Now that you know how important positive connections are, let's see how well you can work together with a group in this next activity.*
   Assign students groups, ranging in size depending on class size. The team that comes up with the most items/uses wins.
   Choose 1 or both, depending on time:
    - On your dry erase board, make a list of as many different uses for a… that your group can think of in 30 seconds. Examples: Paper clip, plunger
    - On your dry erase board, make a list of as many different articles of clothing that your group can think in 30 seconds.

Closing (3 min):

So today we talked a little bit about connection, you worked in a group, and hopefully you had fun; that is what our program is all about! To participate, you and your parent/ guardian need to sign the orange consent forms. When you bring back your signed consents, you have the chance of randomly being assigned to 1 of 2 groups: the Connection Project group that meets with us once a week during Health class or the group that stays in class like normal. Both groups complete surveys and will receive $30 in gift cards and snacks throughout the semester. The packet you were given contains a parent letter, a Frequently Asked Questions list, and in-depth information about our research partnership with the University of Virginia. Your consent forms are due:

Any questions? Does anyone need another consent form? If you or your parents/ guardians have any questions or concerns, Heather's contact information can be found on the letter. Thanks, again everyone. We're looking forward to having an awesome semester!

Parent/Guardian Informed Consent Agreement

Please read this consent agreement carefully before you decide to participate in the study. Your child will also receive an assent form; please review the assent form with your child.

Purpose of the research study: The purpose of the study is to determine the effectiveness of a program to increase youth social skills and the quality of youth social relationships with one another and with adults in their lives.

What your child will do in the study: We would like your permission for your teen to respond to confidential surveys over the next year regarding his or her social relationships, health behavior and sexuality, and academic and social behaviors and experiences. These surveys will include questions about problematic experiences and behaviors your child may have experienced, such as school failure or substance abuse. Your child will always have the right to skip or decline to answer any of these questions without penalty or to stop participating in the study at any time. We would also like your permission to obtain your child's grades, attendance, and disciplinary records from his/her school.

Some youth will also be assigned, if they agree, to participate in *The Teen Connection Project* program—a 12-week in-school program in which students meet in groups of 6 to 15 with a trained adult facilitator employed by St. Louis-based Wyman Center to learn more about ways they can develop stronger social connections. Several of the group discussions will be audio recorded.

Time required: The study surveys will require about 40 minutes for each of 3 assessments, spaced about 3 months apart. If your teen participates in *The Teen Connection Project* program, this will involve 12 one-hour sessions spread over a 3-4 month period.

Risks: As with any peer experience, it is possible that some youths participating in the Teen Connection Project program might experience awkward or uncomfortable moments, although the program is designed to minimize this risk. It is also possible that answering questions about problematic experiences, as described above, could lead to some distress.

Benefits: There are no direct benefits to you or your child for participating in this research study. The study may help us understand the extent to which the Teen Connection Project is effective in increasing youth's sense of social adjustment and confidence.

Confidentiality:
The information that your child provides in the study will be handled confidentially and no one who knows your child will see their responses. We will not share their responses with you. Your child's information will be assigned a code number. The list connecting your child's name to this code will be kept in a locked electronic or paper file away from the school. When the study is completed and the data have been fully analyzed, this list will be destroyed.

The audio recordings will be used solely for us to understand how the group as a whole is going. They will be reviewed only by researchers at the University of Virginia with no connection to your child or their school. Once we have obtained the relevant research information from these recordings, they will be destroyed. There are two exceptions to our confidentiality policy. If your child shares information with researchers that (1) indicates any threat of imminent harm to him/herself or others, or (2) suggests that any child is being abused and/or neglected, we would of course take action to help, including informing a school official or possibly others.

Other than these two situations, all information provided will be kept strictly confidential. Everyone who participates in this study is currently protected under a **National Institute of Health Confidentiality Certificate**, which means that information you or your child provide cannot be compelled, even by court subpoena, in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings in any way that would identify you or the information you give. Of course, your child can still tell other people about their involvement in this research if they want to. Even though we have the Certificate, we are still required to follow mandatory child/elder abuse reporting laws in the state.

Voluntary participation: Your child's participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw your child from the study at any time without penalty.

How to withdraw from the study:
If you or your child wants to withdraw from the study, either of you should tell the group leader of your program. There is no penalty for withdrawing from the research, and your child will still be able to participate in the group if they have already been doing so.

Payment:
Your child will receive a gift card of $15 for completing the initial questionnaires and another gift card of $15 for completing the final set of questionnaires.

If you have questions about the study, contact:
Joseph P. Allen, Ph.D.
Box 400400
University of Virginia, Charlottesville, VA 22904-4400.
Telephone: (434) 982-5789

If you have questions about your rights in the study, contact:
Tonya R. Moon, Ph.D.,
Chair, Institutional Review Board for the Social and Behavioral Sciences
One Morton Dr. Suite 500
University of Virginia, P.O. Box 800392
Charlottesville, VA 22908-0392
Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb/sbs

Agreement:
I agree to allow my child to participate in the research study described above and to provide contact information (e.g., phone number, address and email) for you to use if needed to contact my child for the follow-up assessments.
I give consent for you to obtain and for the school to release my child's grades, attendance, and disciplinary records for this project as well as my contact information so that you can reach my child for follow-up interviews if he or she changes schools.

(Please CHECK ONE BOX and SIGN BELOW):

☐ **YES**

☐ **NO**

Signature: _____ Date: _____

Print Your Name: _____

Print Child's Name: _____

My Contact Information:

Phone Number: _____

Email: _____

Address: _____

_____

_____

Minor Informed Assent Agreement (Ages 13-17)

Please read this assent agreement with your parent(s) or guardian(s) before you decide to participate in the study. Your parent or guardian will also give permission to let you participate in the study.

We want to learn about how young people can become more connected and comfortable around other young people and adults, and how this might affect their lives overall.

As part of our study, we would like to ask you to:
1. Fill out questionnaires about your social relationships, health behavior and sexuality, and academic and social behaviors and experiences. These include questions about problems or potentially risky behavior you may have experienced such as school failure or substance abuse. *You will always have the right to decide to skip any questions or decide not to fill out these forms at any time.*

2. Allow us to obtain your grades, attendance, and disciplinary records from your school.

3. About half of the young people in the study will also participate in a 12-session program, *The Teen Connection Project*, which consists of a series of activities and discussions about social relationships. A trained adult facilitator employed by St. Louis-based Wyman Center will lead the program with small groups of 6 to 15 young people, and each session lasts about an hour. Several of the group discussions will be audio recorded.

Time: The survey takes about 40 minutes. You would do the survey three times; each time would be about 3 months apart. If you participate in *The Teen Connection Project* program, you would participate in 12 one-hour sessions during school spread over a 3-4 month period.

Risks: If you participate in the study, it is possible, that as in any group situation, you may feel uncomfortable at times around your peers, although the program is designed to make young people *more* comfortable socially. You also could find it upsetting filling out our questionnaires when they ask about past problems or risky behaviors.

Benefits: If you participate in this study, there won't be any benefit to you from the questionnaires. The program is designed to improve your social relationships, but we are conducting this study to see if and how well it works, so we don't yet know if there will be a benefit.

Confidentiality:
The information that you give to us during this study will be kept private. No one who knows you will see any of your responses. Your name will not be used, and the list linking the code name assigned to your real name will be destroyed after all the data is collected and analyzed; no one who reads about our study will know it was about you. We keep things locked up away from the school so that only our researchers see them.

The audio recordings will only be used to help us understand how the group as a whole is going. Only the researchers at the University of Virginia will be able to listen to the recordings. After we review the audio recordings, they will be destroyed.

There are *two exceptions* to our confidentiality policy. If one of you told us that you were *planning to seriously hurt or kill yourself or someone else, or that any child is being abused and/or neglected,* we would of course, take action to help.

Other than these two situations, all information provided will be kept strictly confidential. Everyone who participates in this study is currently protected under a **National Institute of Health Confidentiality Certificate**, which means that information you provide cannot be compelled, even by court subpoena, in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings in any way that would identify you or the information you give. Of course, you can still tell other people about yourself and your involvement in this research if you want to. Even though we have the Certificate, we are still required to follow mandatory child/elder abuse reporting laws in the state.

You can stop: You don't have to participate in this study and you can stop doing the study at any time.

How to stop: If you want to stop doing the study, tell your group facilitator. There is no penalty for stopping. If you stop, you will still receive the payment for the initial questionnaire you have already completed.

Payment: You will receive a gift card of $15 for completing the initial questionnaires and another gift card of $15 for completing the final set of questionnaires at the end of the study.

If you have questions about the study, contact:
Joseph P. Allen, Ph.D.
Box 400400
University of Virginia, Charlottesville, VA 22904-4400.
Telephone: (434) 982-5789

If you have questions about your rights in the study, contact:
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Charlottesville, VA 22908-0392
Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb/sbs

Agreement:
I agree to participate in the research study described above and to provide contact information (e.g., phone number, address and email) for you to use if needed to contact me for the follow-up assessments.

Signature: _____ Date: _____

Print Name: _____

My Contact Information:

Phone Number: _____

Email: _____

Address: _____

_____

_____

18 Years & Older Informed Consent Agreement

Please read this consent agreement carefully before you decide to participate in the study. We want to learn about how young people can become more connected and comfortable around other young people and adults, and how this might affect their lives overall.

As part of our study, we would like to ask you to:
1. Fill out questionnaires about your social relationships, health behavior and sexuality, and academic and social behaviors and experiences. These include questions about problems or potentially risky behavior you may have experienced such as school failure or substance abuse. *You will always have the right to decide to skip any questions or decide not to fill out these forms at any time.*

2. Allow us to obtain your grades, attendance, and disciplinary records from your school.

3. About half of the young people in the study will also participate in a 12-session program, *The Teen Connection Project*, which consists of a series of activities and discussions about social relationships. A trained adult facilitator employed by St. Louis-based Wyman Center will lead the program with small groups of 6 to 15 young people, and each session lasts about an hour. Several of the group discussions will be audio recorded.

Time: The study surveys will require about 40 minutes for each of 3 assessments, spaced about 3 months apart. If you participate in *The Teen Connection Project* program, this will involve 12 one-hour sessions spread over a 3-4 month period.

Risks: If you participate in the study, it is possible, that as in any group situation, you may feel uncomfortable at times around your peers, although the program is designed to make young people *more* comfortable socially. You also could find it upsetting filling out our questionnaires when they ask about past problems or risky behaviors.

Benefits: If you participate in this study, there won't be any benefit to you from the questionnaires. The program is designed to improve your social relationships, but we are conducting this study to see if and how well it works, so we don't yet know if there will be a benefit.

Confidentiality:
The information that you give to us during this study will be kept private. No one who knows you will see any of your responses. Your name will not be used, and the list linking the code name assigned to your real name will be destroyed after all the data is collected and analyzed; no one who reads about our study will know it was about you. We keep things locked up away from the school so that only our researchers see them.

Revision Date: 11/01/11

IRB-SBS Office Use Only	
Protocol #	
Approved SBS Staff	from: to:

The audio recordings will only be used to help us understand how the group as a whole is going. Only the researchers at the University of Virginia will be able to listen to the recordings. After using the audio recordings, they will be destroyed.

There are *two exceptions* to our confidentiality policy. If one of you told us that you were *planning to seriously hurt or kill yourself or someone else, or that any child is being abused and/or neglected,* we would of course, take action to help.

Other than these two situations, all information provided will be kept strictly confidential. Everyone who participates in this study is currently protected under a **National Institute of Health Confidentiality Certificate**, which means that information you provide cannot be compelled, even by court subpoena, in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings in any way that would identify you or the information you give. Of course, you can still tell other people about yourself and your involvement in this research if you want to. Even though we have the Certificate, we are still required to follow mandatory child/elder abuse reporting laws in the state.

You can stop: You don't have to participate in this study and you can stop doing the study at any time.

How to stop: If you want to stop doing the study, tell your group facilitator. There is no penalty for stopping. If you stop, you will still receive the payment for the initial questionnaire you have already completed.

Payment: You will receive a gift card of $15 for completing the initial questionnaires and another gift card of $15 for completing the final set of questionnaires at the end of the study.

If you have questions about the study, contact:
Joseph P. Allen, Ph.D.
Box 400400
University of Virginia, Charlottesville, VA 22904-4400.
Telephone: (434) 982-5789

If you have questions about your rights in the study, contact:
Tonya R. Moon, Ph.D.,
Chair, Institutional Review Board for the Social and Behavioral Sciences
One Morton Dr Suite 500
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Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb/sbs

Revision Date: 11/01/11

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SBS Staff	

Agreement:

I agree to participate in the research study described above and to provide contact information (e.g., phone number, address and email) for you to use if needed to contact me for the follow-up assessments.

I give consent for you to obtain and for the school to release my grades, attendance, and disciplinary records for this project.

Signature: _____ Date: _____

Print Name: _____

My Contact Information:

Phone Number: _____

Email: _____

Address: _____

_____

_____

Revision Date: 11/01/11

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Approved SBS Staff	from: to:

Appendix B: Study 2 Sample Recruitment Script and Consent Forms

Sample Recruitment Script – Study 2

Materials:

- Consent forms (bring 20 sets per class), blank papers for them to write on (20 per class), Jenga

Opener: (2 min)

- *Good morning! [INTRODUCE US – who we are, connection to UVA/lab, and ask for their names and year at STAB.] Thanks for letting us come in and talk with you about our research project, The Connection Project. This is our third year partnering with St. Anne's to do this project. The goal of this project is for us to learn more about how teenagers form friendships and connect with one another. Later in the semester, if you participate, you'll meet with us or some of our colleagues once a week during this class period. Today, we're going to show you some of kinds of activities we do and some topics we talk about in the groups.*

Activities:

2. Connection Jenga Trivia Game (15-20 min): *First, we're going to play Jenga Trivia.*

   Split students into 3 or 4 groups, depending on class size – just number them off, 1, 2, 3, (4), around the class. Give each group three sheets of paper (do questions 1-3 on one side, 4-6 on the other side).

   Now, we're going to ask you all a few trivia questions to see what you know about connections with others. The first group to hold up your paper with the correct answer written on it wins that round. The other two groups have to send someone to pull a Jenga piece from the tower. *In addition, for ANY group who gets the answer right, toss candy to all students in that group* (Sometimes we have to write up the answers for #1 & #6 on the board, FYI.)

   1) In which decade of life are people usually the happiest?
      A) Age 1-10 B) Age 11-20 C) Age 31-40 **D) Age 61-70**
   2) True or **False**: 1 in 10 adults feels socially isolated. (**Actually 1 in 4**)
   3) What is one positive thing that is gained by learning how to have strong friendships? (**higher salary, better romantic relationships later in life, lower rates of depression in adulthood, better heart health, later mortality…**)
   4) What is cortisol? (**stress hormone**)
   5) **True** or False: Our bodies produce more cortisol when we are alone.
   6) Which of the following are the long term impacts of stress and isolation on our bodies?
      A) Higher blood pressure and lower intelligence
      B) Higher blood pressure and anxiety
      C) Anxiety and diabetes
      D) Higher blood pressure and lower anxiety

3. Group Challenge (10 min): *Now that you know how important connecting with others can be, we're going to do an even more group-based activity.*
   Hand out two more papers to each group. The team that comes up with the most items/uses for the following questions wins.
   Choose 1 or both, depending on time:
   - On one page, make a list of as many different uses for a… that your group can think of in 60 secs. Examples: Paper clip, plunger
   - On other page, make a list of as many different articles of clothing that your group can think in 60 secs.

Closing (3 min):

So today we talked a little bit about connection, you worked in a group, and hopefully you had fun; that is what our program is all about! To participate, you AND your parent/ guardian need to sign the green consent forms. When you bring back your signed consents, you have the chance of randomly being assigned to 1 of 2 groups: The Connection Project group that meets with us once a week during Life Skills or the group that stays in class like normal. Both groups complete surveys twice throughout the semester. The packet you were given contains a parent letter and a Frequently Asked Questions list. Your consent forms are due by Spring Break. Any questions?

Parent/Guardian Informed Consent Agreement

Please read this consent agreement carefully before you decide to participate in the study. Your child will also receive an assent form; please review the assent form with your child.

Purpose of the research study: The purpose of the study is to determine the effectiveness of a program to increase youth social skills and the quality of youth social relationships with one another and with adults in their lives.

What your child will do in the study: We would like your permission for your teen to respond to confidential surveys over the next year regarding his or her social relationships and academic and social behaviors and experiences. These surveys will include questions about problematic experiences and risky behaviors (e.g., academic failure, substance abuse). Your child will always have the right to skip or decline to answer any of these questions without penalty. Some youth will also be assigned, if they agree, to participate in *The Connection Project* program—an 8 -15 week program in which students meet in groups of 6 to 15 with a trained adult facilitator to learn more about ways they can develop stronger social connections. The group discussion will be audio taped and then transcribed. When we have transcribed the data, the audio tape will be destroyed. This program may also involve volunteer community service activities for young people. With your consent, we will also collect academic records from the school, from grading periods immediately prior to and following the intervention period during which your child participates. Youths have the right to discontinue participating in the study at any time.

Time required: The study surveys will require about 1 hour of your teen's time in total (about 15-20 minutes for each of up to 3 assessments). If your teen participates in *The Connection Project* program, this will involve 8 - 15 one-hour sessions spread over a 3-4 month period.

Risks: As with any peer experience, it is possible that some youths participating in the *The Connection Project* program might experience awkward or uncomfortable moments, although the program is designed to minimize this risk. It is also possible that answering questions about problematic experiences, as described above, could lead to some distress.

Benefits: There are no direct benefits to you or your child for participating in this research study. The study may help us understand the extent to which the *The Connection Project* is effective in increasing youth's sense of social adjustment and confidence.

Confidentiality:
The information that your child provides in the study will be handled confidentially and no one who knows your child will see their responses. We also ask you to acknowledge and accept that we will not share their responses with you. Your child's information and your information will be assigned a code number. The list connecting your child's name and your name to this code will be kept in a locked electronic or paper file. When the study is completed and the data have been fully analyzed, this list will be destroyed. There are two exceptions to our confidentiality policy. If your child shares information with researchers that (1) indicates any threat of imminent harm to him/herself or others, or (2) suggests that any child is being abused and/or neglected, we will take action to help, including informing a school official and possibly others.

The audio recording is for the sole purpose of facilitating the transcription of the information obtained from the group discussion. Only the researchers will have access to it and once the written transcripts are complete, the audio recordings will be destroyed. Furthermore, your child's name will not appear on the written transcripts, and your child's name will not be used in any report.

To help us further protect your privacy, we have obtained a Certificate of Confidentiality from the National Institutes of Health. With this Certificate, the researchers cannot be forced to share information that may identify you or your child, even by a court subpoena, in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings, for example, if there is a court subpoena. You should understand that a Certificate of Confidentiality does not prevent you or a member of your family from voluntarily releasing information about yourself or your involvement in this research. This Certificate also does not supersede any mandatory child/elder abuse reporting laws in the state.

Voluntary participation: Your child's participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw your child from the study at any time without penalty.

How to withdraw from the study:
If you and/or your child want to withdraw from the study, tell the group leader of your program. There is no penalty for withdrawing.

Payment:
Your child will not receive any payment for participating in this study.

If you have questions about the study, contact:
Joseph P. Allen, Ph.D.
Box 400400
University of Virginia, Charlottesville, VA 22904-4400.
Telephone: (434) 982-5789

If you have questions about your rights in the study, contact:
Tonya R. Moon, Ph.D.,
Chair, Institutional Review Board for the Social and Behavioral Sciences
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University of Virginia, P.O. Box 800392
Charlottesville, VA 22908-0392
Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb/sbs

Agreement:
I agree to allow my child to participate in the research study described above.

Signature: _____ Date: _____
You will receive a copy of this form for your records

Minor Informed Assent Agreement (Ages 13-17)
Please read this assent agreement with your parent(s) or guardian(s) before you decide to participate in the study. Your parent or guardian will also give permission to let you participate in the study.

We want to learn about how young people can become more connected and comfortable around other young people and adults, and how this might affect their lives overall.

As part of our study, we would like to ask you to:
1. Fill out questionnaires about your life, your attitudes, and your relationships. These include questions about problems or potentially risky behavior you may have experienced such as school failure. *You will always have the right to decide to skip any questions or decide not to fill out these forms at any time.* The questionnaires take about 1 hour and may be filled out in one sitting or in a bit at a time over the next nine months.

2. About half of the young people in the study will also participate in an 8 to 15-session program, *The Connection Project*, which consists of a series of activities and discussions about social relationships. An adult will lead the program with small groups of young people, and each session lasts about an hour. The group discussion will be audio taped and then transcribed. When we have transcribed the data, the audio tape will be destroyed. *You can choose to stop participating at any time.*

If you participate in the study, it is possible, that as in any group situation, you may feel uncomfortable at times around your peers, although the program is designed to make young people *more* comfortable socially. You also could find it upsetting filling out our questionnaires when they ask about past problems or risky behaviors.

If you participate in this study, there won't be any benefit to you from the questionnaires. The program is designed to improve your social relationships, but we are conducting this study to see if and how well it works, so we don't yet know if there will be a benefit.

Confidentiality:
The information that you give to us during this study will be kept private. No one who knows you will see any of your responses. Your name will not be used, and the list linking the code name assigned to your real name will be destroyed after all the data is collected and analyzed; no one who reads about our study will know it was about you. We keep things locked up so that only our researchers see them. There are two exceptions to our confidentiality policy. If you tell us (1) that you are planning to seriously hurt or kill yourself or someone else, or (2) that any child is being abused and/or neglected, we will of course take action to help, including letting a school official and possibly others know.

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Also, the audio recordings will only be used to transcribe information from the group discussion. Only the researchers will have access to it and the audio recordings will be destroyed after they are transcribed. Your name won't be on the written transcripts.

You don't have to participate in this study and you can stop doing the study at any time.

If you want to stop doing the study, tell your group facilitator. There is no penalty for stopping.

There is no payment for participating in this study.

If you have questions about the study, contact:
Joseph P. Allen, Ph.D.
Box 400400
University of Virginia, Charlottesville, VA 22904-4400.
Telephone: (434) 982-5789

If you have questions about your rights in the study, contact:
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Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb/sbs

Agreement:
I agree to participate in the research study described above.

Printed Name: _____

Signature: _____ Date: _____
You will receive a copy of this form for your records.

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Protocol #	
Approved	from: to:
SBS Staff	

18 Years & Older Informed Consent Agreement

Please read this consent agreement carefully before you decide to participate in the study.

Purpose of the research study: The purpose of the study is to learn about how young people can become more connected and comfortable around other young people and adults, and how this might affect their lives overall.

What you will do in the study:

1. Fill out questionnaires about your life, your attitudes, and your relationships. The questionnaires take about 15 minutes and would be filled out three times over the next nine months. These include questions about problems or potentially risky behavior you may have experienced such as school failure. *You will always have the right to decide to skip any questions or decide not to fill out these forms at any time.*

2. About half of the young people in the study will also participate in a 8 to 15-session program, *The Teen Connection Project*, which consists of a series of activities and discussions about social relationships. An adult will lead the program with small groups of young people, and each session lasts about an hour. The group discussion will be audio taped and then transcribed. When we have transcribed the data, the audio tape will be destroyed. *You can choose to stop participating at any time.* With your consent, we will also collect academic records from the school about your grades from before and after your participation.

You have the right to skip any question in the surveys and to discontinue participating in the study at any time.

Time required: The study surveys will require about 1 hour of your time in total (about 15-20 minutes for each of up to 3 assessments). If you participate in *The Teen Connection Project* program, this will involve 8 to 15 one-hour sessions spread over a 3-4 month period.

Risks: If you participate in the study, it is possible that you may feel uncomfortable at times around your peers, although the program is designed to do the opposite—to make young people more comfortable socially. You also could find it upsetting filling out our questionnaires when they ask about past problems or risky behaviors.

Benefits: If you participate in this study, there won't be any benefit to you from the questionnaires. The program is designed to improve your social relationships, but we are conducting this study to see if and how well it works, so we don't yet know if there will be a benefit.

Confidentiality:

The information that you give to us during this study will be kept private. No one who knows you will see any of your responses. Your name will not be used, and the list linking the code name assigned to your real name will be destroyed after all the data is collected and analyzed; no one who reads about our study will know it was about you. We keep all of our data locked in electronic or paper files so that only our researchers see them. There are two exceptions to our confidentiality policy. If you tell us (1) that you are planning to seriously hurt or kill yourself

or someone else, or (2) that any child is being abused and/or neglected, we will of course take action to help, including letting a school official and possibly others know.

Also, the audio recordings will only be used to transcribe information from the group discussion. Only the researchers will have access to it and the audio recordings will be destroyed after they are transcribed. Your name will not be included on the written transcripts.

To help us further protect your privacy, we have obtained a Certificate of Confidentiality from the National Institutes of Health. With this Certificate, the researchers cannot be forced to share information that may identify you, even by a court subpoena, in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings, for example, if there is a court subpoena. You should understand that a Certificate of Confidentiality does not prevent you or a member of your family from voluntarily releasing information about yourself or your involvement in this research. This Certificate also does not supersede any mandatory child/elder abuse reporting laws in the state.

Voluntary participation: You don't have to participate in this study; your participation is completely voluntary.

Right to withdraw from the study: You can stop doing the study at any time without any penalty.

How to withdraw from the study: If you want to stop doing the study, tell your group facilitator. There is no penalty for stopping.

Payment:
There is no payment for participating in this study.

If you have questions about the study, contact:
Joseph P. Allen, Ph.D.
Box 400400
University of Virginia, Charlottesville, VA 22904-4400.
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Website: www.virginia.edu/vpr/irb/sbs

Agreement:
I agree to participate in the research study described above.

Printed Name: _____

Signature: _____ Date: _____
You will receive a copy of this form for your records

Appendix C – Curriculum Goals and Activities Outline

Session	Participants will…	Key Elements
1. Welcome and Introduction to The Connection Project	• Get to know each other and recognize commonalities • Articulate the goal of program	• Introductions/Ice Breakers • Program Overview – having a voice in the school and their role – influence, shaping • Activities to get to know one another and team builders
2. Creating Our Team	• Recognize that connection is the foundation of a team and valued by everyone • Establish group guidelines to create a safe space	• Read and comment on quotes about the value of connection and teams from across history and cultures. • Identify team goals and establish group guidelines • Team builder
3. Barriers to Connection	• Identify personality "masks" as a barrier to connecting • Recognize masks that occur in society and in school	• Activity to anonymously identify common metaphorical "masks" the teens wear and see around them • Brief videos about how boys and girls are pushed by society to wear certain masks
4. Conflict and Communication	• Explore positive and negative communication styles • Explore the role of conflict in close relationships • Explore pros/cons of different conflict management approaches	• Pair sharing/Group discussion about positive and negative ways of communicating • Discussion of communication styles as facilitating or acting as barriers to connection • 4 corners game to identify different strategies group members use or would like to use for handling conflicts • Follow-up conflict discussion • School Outreach Challenge #1

5. Establishing Trust	• Identify lack of trust as a barrier to connection • Explore ways to safely remove their "masks" and establish trust with one another • Participate in trust activities to increase bonding	• Trust Walk or Animal Sounds trust game • Trust discussion and agree/disagree activity • "If You Knew Me" – anonymous way to share some light personal characteristics and hear about those of teammates • Discussion about some ways to respond when people share personal information
6. If You Really Knew Me	• Explore characteristics and beliefs of their team members that are "below the surface" • Practice safely sharing information about oneself with the team	• "If You Really Knew Me" – anonymous way to share deep, difficult, or meaningful personal characteristics and hear about those of teammates • Team builder • School Outreach Challenge #2
7. You're Not Alone	• Reflect on the experiences adults and college students had in high school • Share their own brief resilience stories with younger teens	• Listen to "You're Not Alone" stories from adults about experiences in high school where they felt out of place or had a hard time, but got through it • Discuss relatable themes in the adult stories • Generate own brief "You're Not Alone" narratives to share with younger students • School Outreach Challenge #3
8. #YouMatter	• Recognize that adults also have more "underneath the surface" • Work together on a project to express appreciation for	• Discuss adults at their school who they appreciate, but who may not get much overt appreciation from students or other staff • Create a project such as a poster or brief movie for 2-4 of these people expressing their appreciation for them

	underappreciated school staff	• Plan when and how to deliver the project/message to the recipient (School Outreach Challenge #4)
9. You Don't Know My Story	• Identify and share an experience that has shaped their values/personalities • Recognize how even challenging situations can lead to personal growth	• Word/symbol association activity to prime thinking about things that have occurred throughout their lives • Conceptualizing a narrative of difficulty and resilience/growth they have experienced • Sharing this narrative with the group and providing/receiving support
10. The Struggle is Real	• Reflect on common challenges, emotions, and coping strategies in adolescence • Explore the value of using social support as a coping strategy	• Group discussion about common struggles faced by teenagers and the various, variable emotions to which these can lead • Group discussion about positive and negative coping strategies used • Creation of a poster with student-generated recommended coping strategies generated by the group which can be hung up in the school or posted online (School Outreach Challenge #5)
11. Seeing Our Strengths (S.O.S.)	• Experience group affirmation • Solidify and extend group bonds	• "Seeing Our Strengths" – Each member sits quietly while each other group member takes turns describing the large and small strengths of member – summarized by facilitator on a piece of poster paper. • School Outreach Challenge #6
12. Debriefing & Looking to the Future	• Reflect on experiences in The Connection Project • Brainstorm ways to continue reaching out to others • Consolidate group bonds and process ending the group	• "Notes to Your Future Self" – students write notes to themselves about things they've learned or ways they've grown, which will be given back to them in 3-6 months • "Start/Stop/Continue" – students reflect on things in their social/interpersonal lives they would like to start, stop, and continue doing • Final wrap-up discussion • Stones exercise – each group member chooses a decorative stone for another group member and shares why they chose that one for that person

Appendix D – Study 1 Measures

Demographics

Today's Date (month/day/year): _____/_____/_____

Your Birthday (month/day/year): _____/_____/_____

1. Gender:

☐ Male
☐ Female
☐ Transgender Male
☐ Transgender Female
☐ Other: _____
☐ I prefer not to answer

2. What grade are you in school this year?

☐ 9th grade
☐ 10th grade
☐ 11th grade
☐ 12th grade

3. What is your race or ethnicity?

☐ Black or African-American
☐ White, non-Hispanic
☐ Hispanic / Latino
☐ Asian or Pacific Islander
☐ Multi-ethnic
☐ Native American
☐ Other: _____
☐ I prefer not to answer

4. During most of the time you were growing up, with whom did you live?

☐ Mother and Father
☐ Mother (alone or with other partner)
☐ Grandmother and Mother
☐ Grandmother (alone or with other partner)
☐ Other Relative
☐ Other: _____

5. What is the highest grade that each of your parents completed?
(Give your best guess if you are not sure.)

Mother:

☐ Less than high school
☐ High school graduate
☐ Some college
☐ College graduate or higher
☐ I don't know

Father:

☐ Less than high school
☐ High school graduate
☐ Some college
☐ College graduate or higher
☐ I don't know

Self-Worth: **Rosenberg Self-Esteem Scale**

Please mark how strongly you agree or disagree with each statement:

	Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
1. I'm happy with myself.	☐	☐	☐	☐
2. At times I think I am no good at all.	☐	☐	☐	☐
3. I feel that there are good things about me.	☐	☐	☐	☐
4. I am able to do things as well as most other people.	☐	☐	☐	☐
5. I feel I do not have much to be proud of.	☐	☐	☐	☐
6. I feel useless at times.	☐	☐	☐	☐
7. I feel that I have value.	☐	☐	☐	☐
8. I wish I could have more respect for myself.	☐	☐	☐	☐
9. I feel that I am a failure.	☐	☐	☐	☐
10. I have a positive attitude about myself.	☐	☐	☐	☐

Broad Social Acceptance/Peer Group Trust and Bonding – Sociometric Roster-and-Rating

Relationships with classmates can be more or less open.

- If you **keep your guard up** around someone you are careful about what you say and do, and feel like you can't be yourself.
- If you are **open**, you feel like you *can* be yourself and act how you like.
-

How do you feel around each of the following students?

	First Name:	Last Name:	Don't Know Them	I Always Keep My Guard Up	I Usually Keep My Guard Up	About Half & Half	I'm Usually Open	I'm Always Open
1.			☐	☐	☐	☐	☐	☐
2.			☐	☐	☐	☐	☐	☐
3.			☐	☐	☐	☐	☐	☐
4.			☐	☐	☐	☐	☐	☐
5.			☐	☐	☐	☐	☐	☐
6.			☐	☐	☐	☐	☐	☐
7.			☐	☐	☐	☐	☐	☐
8.			☐	☐	☐	☐	☐	☐
9.			☐	☐	☐	☐	☐	☐
10.			☐	☐	☐	☐	☐	☐
11.			☐	☐	☐	☐	☐	☐
12.			☐	☐	☐	☐	☐	☐
13.			☐	☐	☐	☐	☐	☐
14.			☐	☐	☐	☐	☐	☐
15.			☐	☐	☐	☐	☐	☐
16.			☐	☐	☐	☐	☐	☐
17.			☐	☐	☐	☐	☐	☐
18.			☐	☐	☐	☐	☐	☐
19.			☐	☐	☐	☐	☐	☐
20.			☐	☐	☐	☐	☐	☐
21.			☐	☐	☐	☐	☐	☐
22.			☐	☐	☐	☐	☐	☐

Close Friendship Positivity: Friendship Quality Questionnaire Items

For each item, please think about your ***best friend.*** Then, decide how true the statement is for your friendship with ***just that friend***.

In my Best Friendship…	Not At All True	A Little True	Somewhat True	Pretty True	Really True
1. We get mad at each other a lot.	□	□	□	□	□
2. He/she sticks up for me if others talk behind my back.	□	□	□	□	□
3. He/she sometimes says mean things about me to other kids.	□	□	□	□	□
4. We talk about how to get over being mad at each other.	□	□	□	□	□
5. We make each other feel important and special.	□	□	□	□	□
6. We argue a lot.	□	□	□	□	□
7. We can count on each other to keep promises.	□	□	□	□	□
8. He/she has good ideas about things to do.	□	□	□	□	□
9. We make up easily when we have a fight.	□	□	□	□	□
10. He/she says “I’m sorry” if they hurt my feelings.	□	□	□	□	□
11. He/she would like me even if others didn’t.	□	□	□	□	□
12. We fight a lot.	□	□	□	□	□
13. He/she cares about my feelings.	□	□	□	□	□
14. We bug each other a lot.	□	□	□	□	□
15. We get over our arguments really quickly.	□	□	□	□	□
16. He/she doesn’t tell others my secrets.	□	□	□	□	□

17. He/she doesn't listen to me.	□	□	□	□	□
18. He/she makes me feel good about my ideas.	□	□	□	□	□
19. They tell me I am good at things.	□	□	□	□	□
20. They tell me I'm pretty smart.	□	□	□	□	□

School Belongingness: PISA

Please rate how much you agree with each of the following descriptions of school:

School is a place where…	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
1. I feel like an outsider (or left out of things).	□	□	□	□
2. I make friends easily.	□	□	□	□
3. I feel like I belong.	□	□	□	□
4. I feel awkward and out of place.	□	□	□	□
5. Other students seem to like me.	□	□	□	□
6. I feel lonely.	□	□	□	□
7. I do not want to go.	□	□	□	□
8. I often feel bored.	□	□	□	□

Depressive Symptoms: CDI 2: SR(S)

From each of the group of three sentences pick one sentence that describes you best <u>in the past two weeks</u>. Fill in the bubble next to the sentence you pick.

1	□	I am sad once in a while.
	□	I am sad many times.
	□	I am sad all the time.
2	□	Nothing will ever work out for me.
	□	I am not sure if things will work out for me.
	□	Things will work out for me OK.
3	□	I do most things OK.
	□	I do many things wrong.
	□	I do everything wrong.
4	□	I have fun in many things.
	□	I have fun in some things.
	□	Nothing is fun at all.
5	□	I am important to my family.
	□	I am not sure if I am important to my family.
	□	My family is better off without me.
6	□	I hate myself.
	□	I do not like myself.
	□	I like myself.
7	□	I feel cranky all the time.
	□	I feel cranky many times.
	□	I am almost never cranky.
8	□	I cannot make up my mind about things.
	□	It is hard to make up my mind about things.
	□	I make up my mind about things easily.

9	□	I have to push myself all the time to do my schoolwork.
	□	I have to push myself many times to do my schoolwork.
	□	Doing schoolwork is not a big problem.
10	□	I am tired once in a while.
	□	I am tired many days.
	□	I am tired all the time.
11	□	Most days I do not feel like eating.
	□	Many days I do not feel like eating.
	□	I eat pretty well.
12	□	I do not feel alone.
	□	I feel alone many times.
	□	I feel alone all the time.

Appendix E – Study 2 Measures

Demographics

Today's Date (month/day/year): _____/_____/_____

Your Birthday (month/day/year): _____/_____/_____

1. Gender:

☐ Male
☐ Female
☐ Transgender
☐ I prefer not to answer

2. What grade are you in school this year?

☐ 6th grade
☐ 7th grade
☐ 8th grade
☐ 9th grade
☐ 10th grade
☐ 11th grade
☐ 12th grade
☐ post high school

3. What is your race or ethnicity?

☐ Black or African-American
☐ White, non-Hispanic
☐ Hispanic / Latino
☐ Asian or Pacific Islander
☐ Multi-ethnic
☐ Native American
☐ Other: _____
☐ I prefer not to answer

4. During most of the time you were growing up, with whom did you live?

☐ Mother and father
☐ Mother and stepfather
☐ Father and stepmother
☐ Father only
☐ Mother only
☐ Guardian
☐ Other: _____

5. What is the highest grade that each of your parents completed? (Give your best guess if you are not sure.)

Mother:
☐ Less than high school
☐ High school graduate
☐ Some college
☐ College graduate or higher
☐ I don't know

Father:
☐ Less than high school
☐ High school graduate
☐ Some college
☐ College graduate or higher
☐ I don't know

6. Are you an international student who boards at St. Anne's Belfield?

☐ Yes
☐ No

If yes, what is your country of origin?:

_____

Self-Worth, Social Acceptance, and Close Friendship Ability: Self-Perception Profile for Adolescents

Harter

For each question, in the top box, fill in the circle for the *one* statement out of the two that is <u>most</u> like you. Only pick *one* statement, then rate *how* true that statement is for you.

1.	O Some teens find it HARD to make friends. **OR** O Some teens find it's pretty EASY to make friends.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
2.	O Some teens are able to make really close friends. **OR** O Some teens find it hard to make really close friends.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
3.	O Some teens are often disappointed with themselves. **OR** O Some teens are pretty pleased with themselves.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
4.	O Some teens do have a lot of friends. **OR** O Some teens don't have a lot of friends.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
5.	O Some teens do have a close friend they share secrets with. **OR** O Some teens don't have a close friend they can share secrets with.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
6.	O Some teens wish they had a really close friend to share things with. **OR** O Some teens do have a really close friend to share things with.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
7.	O Some teens are happy with themselves most of the time. **OR** O Some teens are often not happy with themselves.		

	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
8.	O Some teens are popular with other kids their age. **OR** O Some teens are not popular with kids their age.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
9.	O Some teens do like the kind of person they are. **BUT** O Some teens often wish they were someone else.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
10.	O Some teens feel that they are accepted by other kids their age. **OR** O Some teens wish that more kids their age accepted them.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
11.	O Some teens don't have a friend that is close enough to share really personal thoughts and feelings with. **OR** O Some teens do have a friend that is close enough to share personal thoughts and feelings with.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O
12.	O Some teens are very happy being the way they are. **BUT** O Some teens wish they were different.		
	The statement I just picked is:	Sort of true for me	O
		Really true for me	O

Broad Peer Group Trust and Bonding: Sociometric Roster-and-Rating

Relationships with classmates can be more or less open.

With some classmates you are likely to feel more open, like you can let your guard down, really just be yourself, and say what you really think and feel.

With others you are likely to feel more guarded, like you can't really be yourself and need to be careful in what you say or do.

Which statement best describes how you feel around each of the following students? **Circle your answer. When you find your name, simply cross it out and *do not answer*.**

(1) = I *always* feel more guarded around this person.
(2) = I usually feel more guarded around this person.
(3) = Sometimes I'm guarded, sometimes I'm open. I'm kind of neutral about this person.
(4) = I usually feel more open around this person.
(5) = I *always* feel more open around this person.

	First Name:	Last Name:	**Always Guarded**	**Usually Guarded**	**Neutral**	**Usually Open**	**Always Open**
1.			1	2	3	4	5
2.			1	2	3	4	5
3.			1	2	3	4	5
4.			1	2	3	4	5
5.			1	2	3	4	5
6.			1	2	3	4	5
7.			1	2	3	4	5
8.			1	2	3	4	5
9.			1	2	3	4	5
10.			1	2	3	4	5
11.			1	2	3	4	5
12.			1	2	3	4	5
13.			1	2	3	4	5
14.			1	2	3	4	5
15.			1	2	3	4	5
16.			1	2	3	4	5
17.			1	2	3	4	5
18.			1	2	3	4	5
19.			1	2	3	4	5
20.			1	2	3	4	5

Close Friendship Positivity: Friendship Quality Questionnaire

For each item, please think about your ***best friend.*** Then, decide how true the statement is for your friendship with ***just that friend***. Fill in the bubble corresponding to your choice.

	Not At All True	**A Little True**	**Somewhat True**	**Pretty True**	**Really True**
1. We always spend free time at school together.	**O**	**O**	**O**	**O**	**O**
2. We get mad at each other a lot.	**O**	**O**	**O**	**O**	**O**
3. He/she tells me I am good at things.	**O**	**O**	**O**	**O**	**O**
4. He/she sticks up for me if others talk behind my back.	**O**	**O**	**O**	**O**	**O**
5. We make each other feel important and special.	**O**	**O**	**O**	**O**	**O**
6. We always pick each other as partners for things.	**O**	**O**	**O**	**O**	**O**
7. He/she says “I’m sorry” if he/she hurts my feelings.	**O**	**O**	**O**	**O**	**O**
8. He/she sometimes says mean things about me to other kids.	**O**	**O**	**O**	**O**	**O**
9. He/she has good ideas about things to do.	**O**	**O**	**O**	**O**	**O**
10. We talk about how to get over being mad at each other.	**O**	**O**	**O**	**O**	**O**
11. He/she would like me even if others didn’t.	**O**	**O**	**O**	**O**	**O**
12. He/she tells me I am pretty smart.	**O**	**O**	**O**	**O**	**O**
13. We always tell each other our problems.	**O**	**O**	**O**	**O**	**O**
14. He/she makes me feel good about my ideas.	**O**	**O**	**O**	**O**	**O**
15. I talk to him/her when I’m mad about something that has happened to me.	**O**	**O**	**O**	**O**	**O**

	Not At All True	A Little True	Somewhat True	Pretty True	Really True
16. We help each other with chores a lot.	O	O	O	O	O
17. We do special favors for each other.	O	O	O	O	O
18. We do fun things together a lot.	O	O	O	O	O
19. We argue a lot.	O	O	O	O	O
20. We can count on each other to keep promises.	O	O	O	O	O
21. We go to each others' houses.	O	O	O	O	O
22. We always play together or hang out together.	O	O	O	O	O
23. He/she gives me advice with figuring things out.	O	O	O	O	O
24. We talk about the things that make us sad.	O	O	O	O	O
25. We make up easily when we have a fight.	O	O	O	O	O
26. We fight a lot.	O	O	O	O	O
27. We talk about how to make ourselves feel better, if we are mad at each other.	O	O	O	O	O
28. We share things with each other.	O	O	O	O	O
29. He/she does not tell others my secrets.	O	O	O	O	O
30. We bug each other a lot.	O	O	O	O	O
31. We come up with good ideas on ways to do things.	O	O	O	O	O
32. We loan each other things all the time.	O	O	O	O	O

	Not At All True	A Little True	Somewhat True	Pretty True	Really True
33. He/she helps me so I can get done quicker.	O	O	O	O	O
34. We get over our arguments really quickly.	O	O	O	O	O
35. We count on each other for good ideas about how to get things done.	O	O	O	O	O
36. He/she doesn't listen to me.	O	O	O	O	O
37. We tell each other private things.	O	O	O	O	O
38. We help each other with schoolwork a lot.	O	O	O	O	O
39. We tell each other secrets.	O	O	O	O	O
40. He/she cares about my feelings.	O	O	O	O	O

School Belongingness: PISA

Indicate how you feel about each of the following statements. (check best answer)

School is a place where..	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I feel like an outsider (or left out of things).	□	□	□	□
2. I make friends easily.	□	□	□	□
3. I feel like I belong.	□	□	□	□
4. I feel awkward and out of place.	□	□	□	□
5. Other students seem to like me.	□	□	□	□
6. I feel lonely.	□	□	□	□
7. I do not want to go.	□	□	□	□
8. I often feel bored.	□	□	□	□

Depressive Symptoms: CDI 2

Teens sometimes have different feelings and ideas. From each of the group of three sentences pick one sentence that describes you best <u>in the past two weeks</u>. There is no right or wrong answer. Fill in the bubble corresponding to your choice.

1	O	I am sad once in a while.
	O	I am sad many times.
	O	I am sad all the time.
2	O	Nothing will ever work out for me.
	O	I am not sure if things will work out for me.
	O	Things will work out for me OK.
3	O	I do most things OK.
	O	I do many things wrong.
	O	I do everything wrong.
4	O	I have fun in many things.
	O	I have fun in some things.
	O	Nothing is fun at all.
5	O	I am bad all the time.
	O	I am bad many times.
	O	I am bad once in a while.
6	O	I think about bad things happening to me once in a while.
	O	I worry that bad things will happen to me.
	O	I am sure that terrible things will happen to me.
7	O	I hate myself.
	O	I do not like myself.
	O	I like myself.
8	O	All bad things are my fault.
	O	Many bad things are my fault.
	O	Bad things are not usually my fault.

9	O O O	I feel like crying every day. I feel like crying many days. I feel like crying once in a while.
10	O O O	Things bother me all the time. Things bother me many times. Things bother me once in a while.
11	O O O	I like being with people. I do not like being with people many times. I do not want to be with people at all.
12	O O O	I cannot make up my mind about things. It is hard to make up my mind about things. I make up my mind about things easily.
13	O O O	I look OK. There are some bad things about my looks. I look ugly.
14	O O O	I have to push myself all the time to do my schoolwork. I have to push myself many times to do my schoolwork. Doing schoolwork is not a big problem.
15	O O O	I have trouble sleeping every night. I have trouble sleeping many nights. I sleep pretty well.
16	O O O	I am tired once in a while. I am tired many days. I am tired all the time.
17	O O O	Most days I do not feel like eating. Many days I do not feel like eating. I eat pretty well.

18	O	I do not worry about aches and pains.
	O	I worry about aches and pains many times.
	O	I worry about aches and pains all the time.
19	O	I do not feel alone.
	O	I feel alone many times.
	O	I feel alone all the time.
20	O	I never have fun at school.
	O	I have fun at school only once in a while.
	O	I have fun at school many times.
21	O	I have plenty of friends.
	O	I have some friends but I wish that I had some more.
	O	I do not have any friends.
22	O	My schoolwork is alright.
	O	My schoolwork is not as good as before.
	O	I do very badly in subjects I used to be good in.
23	O	I can never be as good as other kids.
	O	I can be as good as other kids if I want to.
	O	I am just as good as other kids.
24	O	Nobody really loves me.
	O	I am not sure if anybody loves me.
	O	I am sure that somebody loves me.
25	O	I usually do what I am told.
	O	I do not do what I am told most times.
	O	I never do what I am told.
26	O	I get along with people.
	O	I get into fights many times.
	O	I get into fights all the time.

Fear of Negative Evaluation: BFNE

Read each of the following statements carefully and indicate how characteristic it is of you according to the following scale. Fill in a bubble to indicate how characteristic the statement is of you.

1 = **Not at all** characteristic of me
2 = **Slightly** characteristic of me
3 = **Moderately** characteristic of me
4 = **Very** characteristic of me
5 = **Extremely** characteristic of me

	Not at all	**Slightly**	**Moderatel**	**Very**	**Extremely**
1. I worry about what other people will think of me even when I know it doesn't make a difference.	①	②	③	④	⑤
2. I am unconcerned even if I know people are forming an unfavorable impression of me.	①	②	③	④	⑤
3. I am frequently afraid of other people noticing my shortcomings.	①	②	③	④	⑤
4. I rarely worry about what kind of impression I am making on someone.	①	②	③	④	⑤
5. I am afraid that others will not approve of me.	①	②	③	④	⑤
6. I am afraid that people will find fault with me.	①	②	③	④	⑤
7. Other people's opinions of me do not bother me.	①	②	③	④	⑤
8. When I am talking to someone, I worry about what they may be thinking about me.	①	②	③	④	⑤
9. I am usually worried about what kind of impression I make.	①	②	③	④	⑤
10. If I know someone is judging me, it has little effect on me.	①	②	③	④	⑤
11. Sometimes I think I am too concerned with what other people think of me.	①	②	③	④	⑤
12. I often worry that I will say or do the wrong things.	①	②	③	④	⑤

Social Anxiety: Social Self-Efficacy Subscale

Please read the following statements and say how much you agree or disagree with each, from "Strongly Disagree," to "Strongly Agree." Circle your Answer.

SSE	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
1. It's difficult for me to make new friends.	1	2	3	4	5
2. If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.	1	2	3	4	5
3. If I meet someone interesting who is hard to make friends with, I'll soon stop trying to make friends with that person.	1	2	3	4	5
4. When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily.	1	2	3	4	5
5. I do not handle myself well in social gatherings.	1	2	3	4	5
6. I have acquired my friends through my personal abilities at making friends.	1	2	3	4	5

Trait Anxiety: A-Trait Subscale of STAI

Below are a number of statements which people have used to describe themselves. Read each statement, and then check the appropriate box to indicate how you GENERALLY feel. There are no right or wrong answers. Do not spend too much time on any one.

STAI	Almost Never	Sometimes	Often	Almost Always
1. I feel pleasant.	□	□	□	□
2. I tire quickly.	□	□	□	□
3. I feel like crying.	□	□	□	□
4. I wish I could be as happy as others seem.	□	□	□	□
5. I am losing out on things because I can't make up my mind soon enough.	□	□	□	□
6. I feel rested.	□	□	□	□
7. I am "cool, calm, and collected".	□	□	□	□
8. I feel difficulties are piling up so that I cannot overcome them.	□	□	□	□
9. I worry too much over something that doesn't really matter.	□	□	□	□
10. I am happy.	□	□	□	□
11. I usually take things hard.	□	□	□	□
12. I lack self-confidence.	□	□	□	□
13. I feel secure.	□	□	□	□
14. I try to avoid facing hard times or difficulty.	□	□	□	□
15. I feel blue.	□	□	□	□
16. I am content.	□	□	□	□
17. Some unimportant thought runs through my mind and bothers me.	□	□	□	□
18. I take disappointments so strongly that I can't put them out of my mind.	□	□	□	□
19. I am a steady person.	□	□	□	□
20. I get in a state of tension or turmoil as I think over my recent concerns and interests.	□	□	□	□