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Evidence-Based Practice and Practice-Based Evidence:

Examining the Impact of Delinquency Prevention in Schools

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**Evidence-Based Practice and Practice-Based Evidence:
Examining the Impact of Delinquency Prevention in Schools**

by

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Dedication

I would like to dedicate my work and dissertation to Grandma and Poppy ~ two people who have always pointed me toward what (and Who) really matters. They have offered an example of the infinite possibilities of change and hope despite the most difficult circumstances.

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**Evidence-Based Practice and Practice-Based Evidence:
Examining the Impact of Delinquency Prevention in Schools**

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The University of Texas at Austin, 2013

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Abstract

The deleterious manifold of juvenile delinquency for victims, offenders, and the general public necessitate effective prevention strategies. Researchers have asserted that one of the most effective ways in which delinquency is prevented is through school-based intervention. Specifically, much attention has been given to identifying the most efficacious evidence-based treatments (EBTs) through an evidence-based practice (EBP) approach. Critics, however, argue that several limitations exist in the EBP process and suggest that a practice-based evidence (PBE) approach may be more sufficient to meet the needs of youth who are at-risk of delinquency. Guided by the Social Development Model, it is broadly the aim of this three-article dissertation to explore the most effective school-based delinquency prevention approaches.

Drawing from the EBP approach, the first article mimics a process that practitioners are encouraged to employ. Multiple EBT websites were systematically searched for the most efficacious school-based delinquency prevention interventions.

Four interventions met inclusion criteria. These interventions highlighted both strengths and limitations. Out of the limitations from the first article, the second article investigated the extent to which a PBE approach may be an alternative option for youth most at-risk of a delinquent trajectory: being male, from a lower socioeconomic urban community, and primarily minority youth. The article offers the results of a pretest/posttest design with a sustaining school-based intervention that was developed by social workers. The final article reports on the results of a randomized controlled trial that investigated the effectiveness of the first year of the XY-Zone on protective factors among youth at-risk for delinquency. The second and third article revealed promising results and provide preliminary evidence for important next steps. Additional research, with a longitudinal design and larger sample size, is needed.

This dissertation suggests that both approaches can inform the other. As globalization and advanced resources continue to springboard awareness of both the problems and solutions to delinquency prevention in schools, it is likely that advancements in the EBP and PBE approaches will give way to the ever-debated research and practice gap growing much nearer than ever before.

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CHAPTER 1

INTRODUCTION

Statement of the Problem

An estimated 1.5 million adolescents are arrested annually in the United States for delinquent behaviors (U. S. Census Bureau, 2012). Although crime rates have steadily declined over the past decade, the rates are sufficiently high enough to sustain appreciable harm and remain substantial when one considers the consequences associated with even one offense. For example, the emotional and fiscal damages sustained by victims are estimated to cost approximately \$8,000 for one attempted robbery, \$18,000 for drunk driving, \$87,000 for non-fatal sexual or physical assault, and \$3,000,000 for a fatal assault (Miller, Cohen, & Wiersema, 1996). In addition, those who have experienced victimization are more likely to become offenders themselves (Jain & Cohen, 2013). There are also far-reaching consequences for those who become involved with the juvenile justice system. Youth who are arrested for delinquent acts are subsequently more likely to become addicted to substances, drop out of school, parent children at an early age, and become incarcerated as an adult (Greenwood, 2008). The result of these types of consequences often extends beyond victims and offenders. For example, federal, state, and local governments spend approximately \$5.7 billion a year on juvenile corrections (Justice Policy Institute, 2009). In response to these types of consequences, practitioners, researchers, and policy-makers have deemed delinquency prevention a necessity (Welsh & Farrington, 2010).

Researchers have found that one of the most effective ways in which delinquency is prevented is through school-based interventions (Botvin & Griffin, 2005; Conroy, Sutherland, Snyder, & Marsh, 2008; Greenwood, 2008; Kazak et al., 2010; Welsh & Farrington, 2007). Specifically, school-based interventions prevent delinquency through evidence-based treatments (EBTs) that reduce risk factors and increase protective factors (c.f., Hawkins, Catalano, & Miller, 1992; Welsh & Farrington, 2007). According to Howell (2003), Risk factors increase one's vulnerability to and place a youth at risk of subsequent negative outcomes (such as delinquency; Howell, 2003). Conversely, Kirby and Fraser (1997) defined protective factors as factors that assist children and adolescents in guarding against risk. It is believed that the more protective factors present, the less likely the adolescent will engage in delinquent behaviors (Fergus & Zimmerman, 2005; Masten, Cutuli, Herbers, & Reed, 2009).

Over the past decade there has been increased attention given to school-based delinquency prevention through the identification, dissemination, and implementation of EBTs through the evidence-based practice (EBP) approach (Greenwood, 2011). To that end, federal and private agencies have created user-friendly websites with synthesized information on EBTs to assist in closing the research-practice gap and encourage dissemination and implementation (e.g., Hennessy, Finkbiner, & Hill, 2006). Criticisms exist, however, regarding the EBP approach, and some assert that a practice-based evidence (PBE) approach may be more appropriate to effectively intervene with at-risk youth (Duncan & Reese, 2012). As practitioners, policy-makers, and researchers continue to navigate the best ways in which the gap between research and practice can be narrowed and provide the very best care to youth at-risk of a delinquent and tumultuous trajectory, important questions need to be explored. Through this

lens, it is broadly the aim of this dissertation to explore the most effective school-based delinquency prevention approaches.

Theoretical Relevance

The social development model (Catalano & Hawkins, 1996) is a delinquency prevention framework that provides strength both conceptually and empirically. Incorporating concepts from social control theory (Hirschi, 1969), social learning theory (Akers, Krohn, Lanza-Kaduce, & Radosevich, 1979; Bandura, 1977), and differential association theory (Matsueda, 1988; Sutherland, 1973), the social development model asserts that educational environmental transitions (preschool to elementary, elementary to middle school, and middle school to high school) during development impact behavior. A key assumption of this model is that particular risk and protective factors are more malleable during various developmental periods, and prevention interventions should be designed to intervene during the most appropriate time. Another assumption of this model is that the most effective practices should be identified that target delinquency risk and protective factors (Hawkins & Catalano, 1996). It is through this framework that effective school-based delinquency prevention will be viewed.

Summary

As aforementioned, the consequences of juvenile delinquency are substantial. Thus, investment in efficacious prevention has become a nationally recognized necessity (Welsh & Farrington, 2010). The following manuscript will first provide a review of the literature that defines juvenile delinquency within the context of delinquency prevention, describes risk and protective factors impacted through school-based interventions, as well as offers literature regarding EBP and PBE as they pertain to meeting the treatment needs of youth at-risk for delinquency. Second, theoretical frameworks that support both this dissertation and the three

individual articles will be described. Third, chapters 4, 5, and 6 are articles that answer specific research questions associated with the extent to which school-based delinquency prevention interventions are efficacious. Specifically, chapter 4 offers the results of a systematic review that explored school-based delinquency prevention interventions from EBT websites. Chapter 5 presents the results of a pretest/posttest school-based intervention study that was conducted with youth at-risk of delinquency. The high school intervention, the XY-Zone, was developed in a practice setting to prevent problem behaviors among primarily minority at-risk male youth, such as delinquency, school dropout, and violence. The article is designed for social work practitioners and offers an example of a PBE approach that addresses some of the weaknesses associated with the EBP approach and delinquency prevention. Chapter 6 reports on the results of a randomized controlled trial that examined the effectiveness of the XY-Zone on delinquency protective factors. Finally, this manuscript concludes with implications for future research, practice, and policy associated with effective delinquency prevention.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

Evidence supporting the prevention of delinquency has grown substantially over the past two decades (Greenwood & Edwards, 2011). The field of juvenile justice has grown from utilizing ineffective and harmful interventions to now recognizing dozens of evidence-based treatments (EBTs) that prevent delinquency (Greenwood, 2008). Juvenile delinquency prevention is largely informed by research on risk and protective factors (Hawkins, Catalano, & Miller, 1992; Welsh & Farrington, 2010) and most of the efficacious prevention interventions are delivered in the school setting (Greenwood, 2008; Welsh & Farrington, 2008; Wilson, Gottfredson, & Najaka, 2001).

As more has become known about EBTs for delinquency prevention, both federal and private agencies have attempted to encourage the dissemination and implementation of EBTs by offering websites that synthesize and suggest the effective treatments for specific problems in specific settings (Hennessy & Green-Hennessy, 2011). Despite the increasing popularity of EBTs and these national databases, criticisms exist (Duncan & Reese, 2012). Duncan and Reese (2012) highlighted that issues associated with dissemination and sustainability in practice settings that are not under the control of a rigorous research study. Specifically pertaining to delinquency prevention, EBTs often fail to meet the specific needs of those most at-risk for a delinquent trajectory, such as males from ethnic minority groups. Some have responded by

asserting that a practice-based evidence (PBE) approach may be an important alternative to consider when developing sustainable interventions (O'Connell, Boat, & Warner, 2009). Specifically, interventions that have been developed by practitioners in real-world practice settings, have demonstrated effective implementation, growth and dissemination, sustainability, and have been designed to meet specific cultural needs of populations at risk for delinquency should be evaluated. One such intervention, the XY-Zone, provides an example of how the PBE approach may offer promise in preventing delinquency among at-risk minority male youths. What follows is a review of the literature that supports and elaborates on the way in which effective delinquency prevention is viewed, offering a specific focus on school-based prevention programs within a risk and protective factor framework.

Juvenile Delinquency Defined

There are multiple concepts and descriptions associated with juvenile delinquency (e.g., Hoge, 2001; Platt, 1977; Roberts, 2004; Roberts & Springer, 2007; Springer et al., 2011; Thornton & Voigt, 1992; Trojanowicz & Morask, 1992). When considering and understanding evidence-based prevention interventions, a contextual framework is necessary. Key delinquency terminology is briefly offered below with the intent to inform the conceptualization of delinquency within school-based prevention contexts.

Delinquent behavior has been defined as a behavior that is in violation of the criminal code and committed by a youth who has not reached adult age (Roberts, 2004). While the term “juvenile delinquent” is the primary term used in the literature to describe this population, it is synonymously used with the term “juvenile offender” (e.g., Hoge, 2001; Roberts, 2004; Springer & Roberts, 2011; Thornton & Voigt, 1992; Trajanowicz & Marsh, 1992). For the purpose of this dissertation, both of these terms represent an adolescent who has been arrested for delinquent

behavior. Different from “delinquent,” “juvenile offender,” and “juvenile delinquency,” the term “delinquent behavior” represents acts in violation of the criminal code that are committed by a juvenile who may or may not have been arrested for their behavior. Juvenile delinquency is a very broad term that ranges from behaviors such as engaging in status offenses to violent and criminal behaviors (Roberts, 2004; Thornton & Voigt, 1992). Researchers have examined juvenile delinquent behavior across four broad categories: status offenses (running away, curfew violations, school truancy, drinking alcohol), substance use offenses (use/sale/distribution of illegal substances), property offenses (breaking and entering, burglary), and violent offenses (actions involving human or animal victims; Burfeind, & Bartusch, 2011). Operationally defining delinquency has been a difficult task, particularly regarding its differentiation from delinquency risk factor research. For example, delinquency researchers have asserted that factors such as substance use, antisocial behavior, and truancy are factors that place an adolescent at risk of becoming delinquent (Shader, 2004). However, these particular risk factors, by definition, are delinquent behaviors. This lack of conceptual clarity can add confusion regarding understanding delinquency prevention research. Therefore, for the purpose of this dissertation, delinquency prevention will be defined using Welsh and Farrington’s (2011) description:

“early prevention includes interventions applied … to prevent the onset of delinquency and interventions targeted on children and youths who are at risk for becoming offenders because of the presence of one or more risk factors” (p. 101).

School-based delinquency prevention researchers frequently use similar definitions by targeting change in factors that both reduce the risk and protect against subsequent juvenile offending.

School-Based Delinquency Prevention: Risk and Protective Factors

The strongest and most efficacious programs identified as preventing delinquency are school-based programs (Botvin & Griffin, 2005; Conroy, Sutherland, Snyder, & Marsh, 2008; Greenwood, 2008; Kazak et al., 2010; Welsh & Farrington, 2007). Schools have long been the primary provider of services to children (Kratochwill & Shernoff, 2004), and have offered services that, for decades, have targeted delinquency risk factors for decades (Greenwood, 2008). Gottfredson (1997) explained that schools provide the most consistent access to crime-prone youth throughout important developmental years; they are usually staffed with professionals who desire to see youth succeed; and the community is generally more amenable to the schools' efforts to socialize their children. Schools also provide the best way in which professionals delivering interventions have access to largest number of students (Faggino et al., 2005; Wilson & Lipsey, 2007).

Most of the interventions that have been identified as school-based EBTs in preventing delinquency were first developed by researchers outside of the juvenile justice field to address a variety of problematic behaviors, such as substance use, academic failure, problematic school behavior, and child abuse (Greenwood, 2008). However, researchers have drawn attention to these programs due to their ability to impact delinquency risk factors, and thus, delinquency prevention (Welsh & Farrington, 2007).

Three-Tier Model of Intervention

Delinquency prevention interventions target risk and protective factor outcomes in the school setting through a three-tiered intervention approach. This framework has largely influenced the evidence-based approach to intervention in schools over the past decade (Kelly, Montgomery, & Franklin, 2012). Because this approach is often discussed in the delivery of

school-based intervention, and is discussed throughout this dissertation, it needs to be defined. The majority of efficacious interventions are Tier one, or universal interventions. Tier one services are provided to the whole classroom and/or whole school setting. Interventions that are delivered in a group setting to students with a specific need are considered to be Tier two, or selective, services. Lastly, Tier three services, also called indicated services, are considered to be the most intensive, often multimodal, and target the individual, regardless of modality (e.g., individual or group) of intervention delivered. Students that are more at-risk are targeted for additional intervention and are categorized in a higher Tier, because data on their progress suggests that they require more intensive assistance. Researchers assert, however, that students all should first receive Tier one interventions, because it has been found that the majority of students (approximately 85%) can have their needs met through a Tier one approach (Kelly, Montgomery, & Franklin, 2012). For more at-risk students, Tier two and three level services may be more effective.

Risk Factors

A number of reviews have recently been published that investigated the efficacy of school-based interventions on some factors that place a youth at risk of delinquency (Faggiano et al., 2005; Farrington & Ttofi; 2009; Foxcroft & Tsertsvadze, 2011; Hahn et al., 2007; Hopfer et al., 2010; Lemstra et al., 2010; Mytton, DiGuiseppi, Gough, Taylor, & Logan, 2006; Stoltz, can Londen, Dekovic, de Castro, & Prinzie, 2012; Thomas & Perera, 2006; Wilson, Gottfredson, & Najaka, 2001; Wilson & Lipsey, 2007). The majority of these reviews reported on outcomes associated with either aggressive behavior or substance use. For example, Wilson & Lipsey (2007) conducted a meta-analysis on school-based interventions for aggressive and disruptive behavior. They reported on the results of 249 experimental or quasi-experimental design studies

conducted around the world. Compared to the control groups, they found an overall statistically significant effect ($d = 0.21$) on students' aggressive and disruptive behavior who had received a universal intervention. They also found a significant effect ($d = 0.29$) for students who received a selected or indicated intervention. Additionally, they reported that the majority of school-based interventions were universal (meaning that they were delivered to the whole classroom or school), and concluded that school-based practitioners could choose from a variety of researcher-implemented interventions to impact students' aggressive and disruptive behavior (Wilson & Lipsey, 2007). Other reviews have reported similar results. Hahn and colleagues (2007) conducted a review of universal school-based programs designed to decrease violence and aggression and identified 53 studies that met their criteria. Researchers reported a 15% reduction in violent and aggressive behavior and found that the universal school-based programs were effective at all school levels across all populations (Hahn, Crosby, Moscicki, Stone, & Dahberg, 2007).

Different from the reviews that included universal programs, Mytton, DiGuiseppi, Gough, Taylor, and Logan (2006) published a review in the *Cochran Collaboration* on school-based secondary/selected programs that decreased aggressive and violent behavior among students who had been identified as aggressive or at-risk of being aggressive. Only including randomized controlled trials (RCTs) conducted in the U. S., they reported on 56 studies. Meta-analytic results indicated a significant overall effect ($d = -0.41$) in the reduction of aggressive behaviors compared to the control groups. Very few studies reported follow-up results through 12 months. Among the seven that did, however, the significant effect ($d = -0.40$) was maintained.

There have also been several reviews of school-based programs on substance use outcomes. Lemstra and colleagues (2010) conducted a systematic review investigating the impact of school-based interventions on decreasing alcohol and marijuana use among 10- to 15-year-old adolescents. Researchers only included studies that reported on at least one-year follow-up or longer. Similar to the Mytton et al. (2006) review, only a small number of studies ($n = 6$) reported on that length of follow-up. They found a significant treatment effect among those who received the intervention for combined substance use across all studies when compared to the control groups. In other words, when compared to the control group over time, students in the treatment group significantly decreased their substance use.

Exploring effects among a younger population, Hopfer and colleagues (2010) conducted a systematic review of substance use prevention programs with elementary students published between 1980 and 2008. They included experimental, quasi-experimental, and pretest/posttest studies published in the United States and found 30 studies that met inclusion criteria. Similar to studies on aggression, the majority (80%) of the studies examined universal programs. The authors found that 56% of the included studies revealed significant decreases in substance use. Few reviews, however, offered effect sizes and descriptions associated with specific interventions, so, it is possible that particular interventions may be more effective than others. One of the exceptions was a review published by the Cochrane Collaboration (Foxcroft & Tsertsvadze, 2011). They conducted a review on the efficacy of school-based interventions that targeted alcohol misuse among students and reported that the LifeSkills Training program and the Good Behavior Game were considered to be the most effective interventions for reducing substance use (Foxcroft & Tsertsvadze, 2011).

Although the majority of reviews associated with delinquency risk factors have reported on the efficacy of school-based interventions in the reduction of aggression and substance use, one review is often cited in the delinquency prevention literature. Wilson, Gottfredson, and Najaka (2001) conducted a meta-analysis on the efficacy of school-based prevention interventions on problem behaviors. Specifically, they included comparison group evaluation studies that reported on one of the following outcomes: crime, delinquency, theft, violence, illegal acts of aggression, substance use, school dropout, truancy, nonattendance, aggressive behavior, antisocial behavior, defiance of authority, disrespect for others, suspension, expulsion, and other acting-out behavior. Authors found 165 studies, representing 219 manuscripts, that met their inclusion criteria. Similar to aforementioned reviews, the majority of interventions in this review were delivered in the classroom setting. Authors calculated meta-analytic effects for four primary outcomes: delinquency, substance use, dropout/attendance, and other problem behaviors. They found that interventions had a range of small and significant effect sizes ($d = 0.13 - 0.17$) with dropout/nonattendance and other problem behaviors, a very small significant effect for substance use ($d = 0.05$), and no effect on delinquency outcomes. However, there was considerable heterogeneity across interventions, suggesting that some were more effective than others.

Although most of the aforementioned reviews offer little attention to describe specific interventions, Welsh and Farrington (2010) have recently offered helpful narratives about empirically supported school-based delinquency prevention. They assert that programs that are focused on school and discipline management, classroom or instructional management, and increasing self-control with cognitive behavioral or behavioral instructional methods are the most effective at reducing delinquency. They also suggested that programs that include a peer

mentoring component should be explored, because the influence of peers plays such a influential role in either placing a youth a greater risk of or protecting against delinquency (Dodge et al., 2006).

Protective Factors

As aforementioned, much less is known about delinquency protective factors, and fewer school-based studies exist. Because less is known, most of the literature on these factors are individual studies, and not meta-analytic reviews. Some important factors have been found, however, to protect against delinquency: self-control, self-efficacy, family involvement, and school engagement. In addition, the topic of career development within the school setting has received substantial empirical attention for its association with other protective factors, namely school engagement and academic achievement. Literature on each of these factors is briefly presented below.

Self-Control. Self-control is theoretically and empirically associated with delinquency (Gottfredson & Hirschi, 1990; Pratt & Cullen, 2000; Engel, 2012). Within the theoretical delinquency literature self-control is most frequently defined as the ability to regulate emotions, thoughts, and behaviors, as well as exert a conscious effort to restrain or override responses (Bandura, 1989; Baumeister, Vohs, & Tice, 2007; Metcalfe & Mischel, 1999; Vohs & Baumeister, 2004). Although low self-control has repeatedly been found as a significant predictor of and risk factor for delinquency (Perrone, Sullivan, Pratt, & Margaryan, 2004; Pratt & Cullen, 2000), researchers have recently discovered that higher levels of self-control, conversely, protects against delinquency. For example, Obokata and Muto (2005) conducted a study with 1,623 junior high school students. They found that higher levels of self-control served as a protective factor against delinquency. In addition, the results of 102 studies were recently

reported in a meta-analysis regarding the impact of self-control on a variety of behaviors (Ridder, Lensvelt-Mulders, Finkenhauser, Stok, & Baumeister, 2011). Authors found that higher levels of self-control were related to better school and work performance. They also found that males with low self-control were significantly more likely to engage in deviant behavior. Therefore, self-control may be a particularly important protective factor to target in delinquency prevention with male adolescents. Although considered an important outcome to investigate, there are very few reports of school-based interventions studies that have impacted self-control. One example was a study conducted by Larkin & Thyer (1999), which investigated the efficacy of a cognitive-behavioral therapy (CBT) group intervention with 52 primarily White behaviorally disruptive elementary students. Results of their randomized controlled trial (RCT) revealed statistically significant improvements in self-control.

Self-Efficacy. Self-efficacy has also been shown to serve as a protective factor against antisocial careers and delinquency (Bandura, Barbaranelli, Caprara, Pastorelli, & Regalia, 2001; Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003; Caprara, Regalia, & Bandura, 2002). Different from self-control, self-efficacy is defined as belief in one's capabilities (Bandura, 2006). Put in another way, it is a "judgment of capability" (Bandura, 2006, p. 309). Higher levels of self-efficacy have been found to increase self-control, but the two constructs are conceptually different (Pajares, 1996). Additionally, delinquency researchers conceptualize and measure self-efficacy differently. Self-efficacy has been argued to be both a situational factor that is related to domain specific behaviors and contexts (e.g., self-regulator behaviors, academics, sports) and a more generalized construct (e.g., generalized self-efficacy) that may influence behavior of individuals across different settings, events, and behaviors (Scherbaum, Cohen-Charash, & Kern, 2006). Generalized self-efficacy is usually measured as perceived self-

efficacy, and it is a global construct that is defined as an individual's belief in his or her abilities to perform well in a variety of different situations. Recent literature suggests that generalized self-efficacy may mediate or influence situational self-efficacy (Scholz et al., 2002; Sherbaum et al., 2006).

Self-efficacy is an important protective factor for adolescents at risk of delinquency. Caprara and colleagues (2010) recently reported on the longitudinal results of a study with 452 adolescents. Participants were interviewed four times over the course of 7 years, and analysis revealed that self-efficacy served as a protective factor against engagement in delinquency among boys. Different researchers have also linked self-efficacy with other delinquency protective factors. Specifically, it was found that adolescents with higher levels of self-efficacy have higher peer and social acceptance (Bradley & Newhouse, 1975; Downs, 1988), as well as pro-social behavior (Miller & Eisenberg, 1988). Although evidence regarding school-based interventions on self-efficacy exists (e.g., Kvarme et al., 2010), little is known about the impact of such interventions among students at-risk of delinquency.

Another prominent protective factor domain is family. In the context of delinquency prevention, family involvement is considered to be conventional activities in which the child participates with their family members (e.g., playing games, going to church) and the extent to which an adolescent feels conventionally bonded with their family (Hirschi, 1969). Specifically, factors associated with familial involvement and bonding have been found to protect against delinquency, as well as other at-risk behaviors (O'Connell, Boat, & Warner, 2009). For example, Youngstrom, Weist, and Albus (2003) conducted a study with 320 inner-city youth, most of whom had been exposed to community-level risk factors over the previous six months. Results of this cross-sectional study revealed that family involvement moderated the relationship

between cumulative risk factors and externalizing behaviors (such as delinquency and aggression). Thus, they found family involvement served as a protective factor against delinquency. In another evaluation, Johnson and colleagues (2011) reported on the results of a longitudinal study with 1,007 participants. They found that higher levels of familial support and involvement protected against offending into adulthood (Johnson, Giordano, Manning, & Longmore, 2011). Multimodal school-based interventions exist that have sought to increase family involvement among at-risk youth. One example is the Strengthening Families program, and researchers have found this program increases in family involvement among at-risk youth (Roach, Kim, O'Connor, & Laurion, 2009). Unfortunately, researchers have found it difficult to prevent high rates of attrition among at-risk students who often come from families that lack resources (Kapungu et al., 2012). This is of particular concern with minority populations (e.g., Martinez, McClure, Eddy, Ruth, & Hyers, 2011). Research is limited on the extent to which school-based interventions may teach students skills to strengthen family involvement without having to include the family in the intervention.

School Involvement. The school domain is also important to consider when protecting students from delinquency. One particular protective factor that has been found significant in longitudinal studies is school engagement (Herrenkohl, Lee, & Hawkins, 2012). School engagement has been defined in various ways, but in the context of delinquency prevention it is the extent to which an adolescent engages in conventional school activities (including classroom activities and assignments; Hirschi, 1969). Research has supported this relationship. For example, Herrenkohl and colleagues (2012) reported on the results of a longitudinal study with 808 adolescents who participated in the Seattle Social Development Project (SSDP). The SSDP was designed to examine delinquency- and violence-related risk and protective factors. They

found that participants who had higher levels of school engagement were significantly less likely to become violent or delinquent. This factor is important; not only are disengaged students more likely to enter into the juvenile justice system, but they are also more likely to experience academic failure, high school dropout, and several other negative psychosocial outcomes (Caraway et al., 2003; Connell, Halpern-Felsher, Clifford, Crichlow, & Usinger, 1995; & Finn, 1989). School engagement is of even greater concern among minorities. Compared to White youth, Black students are one and a half times more likely to drop out of high school, and Hispanic students are almost four times more likely than White adolescents to drop out (Kaufman, Alt, & Chapman, 2004). Some school-based intervention studies have been conducted that aim to increase school engagement among at-risk minority youth. Holt, Bry, and Johnson (2008) conducted a pilot randomized controlled trial with 40 mostly Hispanic (47%) and Black (38%) at-risk students to investigate the extent to which a mentoring intervention impacted school engagement. Among those who received treatment with fidelity, participants had higher levels of school engagement. Additional research is needed to determine how school-based interventions can impact this important protective factor among at-risk youth.

Career Development. Lastly, investment in adolescents' career development has become an important topic in recent decades, particularly in the school setting. Although not specifically considered to be a protective factor, the development of career strengths has been found to increase other protective factors. Career development initiatives in the school setting have been found to foster positive student attitudes toward school, increase school engagement (Lapan, 2004), and increase academic achievement (Evans & Burck, 1992). For example, Evans and Burck (1992) conducted a meta-analysis of 67 studies and found career development to increase school achievement. Researchers have since conducted additional studies and reported similar

results (e.g., Castellano, Stringfield, & Stone, 2003; Olson, 1997; Visher, Bhandari, & Medrich, 2004). In addition, because urban minority youth from lower socioeconomic status areas are at the greatest risk for delinquency and dropping out of school (U.S. Department of Education, 2009), researchers have begun to study the connection between school engagement and career development among urban youth. For example, Perry (2008) found that higher levels of career development predicted higher levels of school engagement among urban minority youth. It is important to examine the extent to which interventions impact factors, like career development, increase delinquency protective factors. Unfortunately, little attention has been given to this topic in school-based delinquency prevention literature.

Evidence-Based Practice and School-Based Delinquency Prevention

The term “evidence-based practice” (EBP) has become commonplace in the fields of medicine (Straus, Glaziou, & Richardson, 2010), nursing (Melnyk & Fineout-Overholt, 2011), policy (Nutley, 2000) psychology (Hersen & Sturkey, 2010), and social work (Grinnell & Unrau, 2011). Gambrill (2001) asserts that EBP is an approach to practice that offers the very best care available to clients. The *Social Work Policy Institute* defines EBP as “a process in which the practitioner combines well-researched interventions with clinical expertise and ethics, and client preferences and culture to guide and inform the delivery of treatment services” (2010, para 1). This process is associated with five steps: 1) ask a focused question, 2) find the best evidence, 3) evaluate the evidence, 4) apply information in combination with clinical experience and patient values, and 5) evaluate outcomes (Johnson, 2008). Central to this process is the identification and use of evidence-based treatments (EBTs) in step two. Although there are multiple criticisms of EBP (see Straus & McAlister, 2000), scientists assert that when specific EBP steps (see Gibbs & Gambrill, 2002) are followed, most criticisms are addressed (Rubin & Babbie, 2008) and

benefits associated with cost effectiveness, time efficiency, and lasting positive outcomes are made possible.

The EBP approach is fairly new to the field of delinquency. In fact, crime rates soared in the early 1990s (Greenwood & Edwards, 2011), and the most prevalent practices at that time, such as Drug Abuse Resistance and Education (D.A.R.E.), boot camps, Scared Straight, and the “get tough on crime” political agendas, proved to be ineffective and, in some cases, increased delinquency (MacKenzie, Brame, McDowall, & Souryal, 1995; Parent, 2003; Sherman et al., 1997). Since that time, several practices have been identified as EBPs for preventing delinquency (Greenwood, 2008). The EBP approach for delinquency has become especially relevant due to its “domino effect” on not only individuals engaging in delinquent acts, but also for families, victims, school systems, and policy-makers (Greenwood, 2008). For example, the prevention of a fatal assault can save a victim an estimated three million dollars in damages, and crimes ranging from attempted robbery to non-fatal physical or sexual assaults have been estimated to cost victims a range of \$8,000 to \$87,000 (Miller, Cohen, & Wiersema, 1996). Further, billions of dollars towards prison facilities could otherwise be avoided (Aos, Miller, & Drake, 2006). Cost analysis incorporating numbers like these have estimated that EBPs designed to prevent or treat delinquency can produce savings approximately five to ten times their original costs (Greenwood & Edwards, 2011). Thus, the identification and dissemination of EBPs for delinquency prevention has been deemed critical. In response, several federal and private agencies have created databases of EBPs to encourage the dissemination and implementation of efficacious practices.

Evidence-Based Treatment Databases

Although a substantial number of school-based interventions have been labeled as EBTs for impacting delinquency risk, the gap between research and practice still exists and is problematic (Bramless, Cates, Savina, & Lauinger, 2010). Few school-based practitioners have access to scientific journals and systematic reviews, and it can be overwhelming to review and appraise the evidence-base. In addition, school-based professionals' time is valuable, often stretched, and limited. Despite these difficulties, the call for schools to implement EBTs has increased (Wilson & Lipsey, 2007). Due to these reasons, among several others, practitioners are frequently encouraged to find EBTs through free databases offered online.

One example that is often cited in the literature is SAMHSA's NREPP (e.g., Kratochwill et al., 2012). The NREPP database was created in 1996 with the goal of disseminating EBTs (Hennessy, Finkbiner, & Hill, 2006). Since that time, their expert reviewers have reviewed thousands of interventions that positively impact dozens of mental and behavioral health outcomes. Interventions that meet their criteria are given ratings for quality of research and readiness for dissemination. Other information provided on each intervention includes: a brief description of the program; outcomes; gender, age, and ethnicity of participant groups; settings; geographic location (e.g., urban, suburban, rural); adaptations; adverse effects; research study citations; costs of implementation; and contact information (c.f., www.samhsa.gov).

Hennessy and Green-Hennessy (2011) conducted a review of the interventions posted on NREPP between 2007 and 2010 (with the exception of substance use interventions), and reported on 91 of the 159 interventions listed on NREPP. They found that about half (48%) of the interventions were conducted in a school setting and 41% of the participants were exclusively children or adolescents. Although this review is helpful in offering readers overall information

about some of the interventions on the NREPP website, other authors have asserted that practitioners should consult several EBT websites, looking for interventions that have achieved their highest rankings (Center for the Study and Prevention of Violence, n.d.). They caution that programs identified as a best practice by only one or two websites does not necessarily mean that it is an EBT. For example, Project ALERT is a school-based substance use prevention intervention currently listed on the NREPP website as an EBT, but it has been removed from other websites (such as the Colorado Blueprints site and OJJDP's model programs site) because of recently published studies that found either no treatment effects or negative treatment effects (c.f., Clark et al., 2010). Examples like Project ALERT highlight the importance of examining the evidence across multiple EBT websites. Therefore, the first article of this dissertation examines “best” school-based delinquency prevention interventions identified across multiple websites.

Criticisms of the Evidence-Based Practice Approach

Implementation, Dissemination, and Sustainability. Many problems still exist with translating EBTs into “real world” practice settings (Duncan & Reese, 2012). Different from what is observed in tightly controlled research experiments conducted in school settings, “real world” practice settings are often different. Gilbert Botvin (2004), the founder of the school-based substance use intervention, LifeSkills Training, expressed that there are many issues associated with translating EBTs into real-world practice. For example, he explained that once a school has decided to implement an EBT, problems associated with administering the intervention with fidelity exist. Some of the reasons for poor fidelity include lack of training and support, limited resources, classroom overcrowding, behavioral classroom management issues, teacher burnout and low morale, and insufficient time, largely due to competing demands (such

as No Child Left Behind mandates). Problems associated with EBT implementation fidelity in the schools are widely reported (Gottfreson & Gottfreson, 2002).

Sustainability of EBTs is also a concern. Sustainability is defined as “durable, long-term implementation of a practice at a level of fidelity that continues to produce valued outcomes” (McIntosh, Horner, & Sugai, 2009, p. 328). Although attention to the sustainability of EBTs in the school setting has been deemed critical, several barriers to sustainability exist (largely associated with implementation issues, fidelity, and insufficient resources and ongoing training) and evidence of the sustainability of EBTs in the natural school setting for preventing delinquency is limited.

Gender-Specific Programming. Recent research has also highlighted the need for delinquency prevention interventions to be gender-specific (Drukker, Kaplan, Feron, Van Os, & Korebrits, 2010). Very few, however, gender-specific interventions exist (and none of the EBTs in this review are gender-specific). Because pathways to delinquency vary greatly by gender (Moffitt, Caspi, Rutter, & Silva, 2001), investment is needed in interventions that prevent delinquency in the school setting. Specifically, researchers have found that males at-risk for delinquency are more likely to have delinquent peers, be aggressive, have higher levels of hyperactivity, and come from homes with harsh discipline and low socioeconomic status neighborhoods (Moffitt et al., 2001). In addition, male delinquent youth are more likely to become offenders in adulthood.

Culturally-Grounded. Culturally grounding interventions has been found to important, specifically with minority populations. Smith, Rodriguez, and Bernal (2011) reviewed 65 experimental and quasi-experimental studies involving 8,620 participants, and they found that culturally-grounded interventions were more effective ($d = 0.46$) with minority populations than

traditional interventions. Although the EBP approach encourages the reciprocal relationship between the clinicians' use of EBTs and their expertise in making necessary cultural adaptations, evidence supporting this approach for school-based delinquency prevention is limited. In fact, Castro and his colleagues (2004) highlight that cultural adaptation may impact the effectiveness of EBTs. He explains that there is a natural tension between fidelity and adaptation, and clinicians' and teachers' adaptations may change key components of the intervention. Castro and his colleagues (2004) argue that there is a need for a planned, organized, and systematic approach to culturally adapting EBTs. In addition, there has been substantial research associated with youth from low socio-economic status urban areas. Studies have found that youth who come from higher levels of poverty in urban neighborhoods are more likely to engage in delinquent behavior (Jarjoura, Triplett, & Brinker, 2002).

Primarily Universal Interventions. Many of the EBTs identified for delinquency prevention in schools are universal (delivered to the whole school or classroom; e.g., Wilson & Lipsey, 2007). Unfortunately, however, youth who encounter the juvenile justice system have frequently experienced a number of difficulties and many require more intensive interventions (Young, Farrell, Henderson, & Taxman, 2009). Evidence for effective Tier 2 and Tier 3 school-based interventions for these populations are limited and more rigorous research is needed to determine the impact of such interventions with students at-risk of delinquency and to understand the extent to which these interventions compare with universal programs.

High School Intervention. Another area where additional research is needed is with regard to high school interventions. Previous reviews (e.g., Durlak, Weissberg, Dynmicki, Taylor, & Schellinger, 2011), highlight that most school-based delinquency prevention studies are conducted with elementary-aged students. The adolescent years and transition into high

school is an important developmental transition for youth, as most youth commit their first offense between the ages of 14-16 (Farrington et al., 2006). Although researchers agree that earlier intervention is important, and children are often more developmentally amenable to change at earlier ages (Hopfer et al., 2010), attention should be given to investigating the extent to which early high school interventions divert youth from a delinquent trajectory. Limited research has been conducted in this area.

Protective Factors. Lastly, researchers have expressed that there is an absence of evidence associated with protective factors, as most EBTs targeting delinquency are deficit-based (Hall et al., 2012; Losel & Farrington, 2012). Over the past decade, researchers have drawn attention to the important implications of positive psychology and positive youth development programs (e.g., Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004), and viewing school-based intervention through a framework that is solution-focused rather than deficit-based (e.g., Franklin, Moore, & Hopson, 2008). In fact, the *American Journal of Preventive Medicine* published a special issue in 2012 that contained papers written by the Centers for Disease Control and Prevention's expert panel on protective factors (see Hall et al., 2012). With a specific focus on youth violence and delinquency, the panel was created to advance the status of prevention research associated with protective factors. One broad conclusion echoed throughout the papers was the need to inform youth violence and delinquency prevention through additional research on the impact of protective factors (Hall et al., 2012).

These examples illustrate limitations that currently exist among EBT interventions, thus limiting the EBP approach, and provide potential support for the importance of considering different approaches. In fact, an estimated six out of seven schools use interventions that are not based in evidence (Lemstra et al., 2010). Some researchers have drawn attention to the idea of

practice-based evidence (PBE) as one potential alternative solution (e.g., O'Connell, Boat, & Warner, 2009).

Practice-Based Evidence

Practice-based evidence has been defined in various ways. Some definitions are associated with the practitioners' expertise and clinical evaluation of each unique client (e.g., Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996), while others envision PBE as the adaptation of EBTs into clinical settings (Kratochwill et al., 2012). The conceptualization of PBE for the purpose of this dissertation is an approach that views PBE as a way in which the EBP process can be enhanced (e.g., Barkham & Baker, 2003; Barkham & Mellor-Clark, 2000; Barkham & Mellor-Clark, 2003; Conway, Audin, Barkham, Mellor-Clark, & Russell, 2003; Margison et al., 2000). Through this approach, PBE is evidence that begins in the practice setting. Similar to the progression through the hierarchy of evidence that EBTs demonstrate, evidence is first built through face validity, focus groups, and consulting theoretical frameworks that support the development of an intervention. Over time, the effectiveness of the intervention is evaluated through practitioner and researcher collaboration. The results are then utilized to undergird empirically driven decisions to change and sustain program components in an effort to meet the identified needs (e.g., Barkham, Mellor-Clark, Connell, & Cahill, 2006). Ultimately, this PBE approach would find a community-based intervention to be effective in rigorous research trials, and the intervention can be considered an EBT.

Offering additional support for this approach, for example, a committee commissioned by the National Research Council and the Institute of Medicine to find the best prevention evidence for youth suggested specific conclusions and recommendations regarding prevention interventions. They highlighted the following conclusion:

Despite multiple dissemination venues, evidence-based interventions have not been implemented on a wide-scale basis. Where interventions have been implemented, they are often not implemented with fidelity, with cultural sensitivity, or in settings that have the capacity to sustain the effort. (O'Connell, Boat, & Warner, 2009, p. 335)

One of the recommendations they offered in response to this conclusion is that collaboration between researchers and schools is necessary to evaluate “preventive interventions that have been developed in the community setting, have demonstrated feasibility of implementation and acceptability in the community, but lack experimental evidence of effectiveness” (p. 336). Thus, it may be important for researchers to consider conducting evaluations on delinquency prevention programs that are gender-specific and/or culturally-grounded and already successfully operating in the school setting.

An Example of an Intervention Developed by Practitioners

Focus on Preventing Multiple Outcomes

As was aforementioned, most school-based interventions that have been found efficacious in preventing delinquency were not specifically developed to prevent delinquency, but little emphasis has been placed on critiques of this literature through the lens of intervening with students who are most at-risk. Moreover, there has been recent growth in interventions that are being developed to address multiple outcomes. Specifically, researchers have increasingly begun to assert that there is substantial overlap in the risk factors for these adolescent problem behaviors, and the most at-risk adolescents (e.g., urban male minority youth from lower socioeconomic status areas) that have exhibited many of these behaviors are found to have an increased likelihood of engaging in one or more of the other problem behaviors (Catalano, Hawkins, Berglund, Pollard, & Arthur, 2002; Center for Disease Control and Prevention, 2010).

Therefore, collective prevention of adolescent problem behaviors has been deemed a necessity in the United States (O'Connell, Boat, & Warner, 2009).

For example, male minority youth, particularly in lower socioeconomic urban settings, are disproportionately represented in the juvenile justice system (Armour & Hammond, 2009), and are more likely to commit violent acts (Basch, 2011) and dropout of school (College Board Advocacy & Policy Center, 2010). Further highlighting the link between problem behaviors, young minority males who dropout of school are 6.3 times more likely to become incarcerated (in jails, prisons, and juvenile detention centers) than those who graduate from high school (Center for Labor Market Studies, 2009). In addition, aggression and violent behavior has been found to predict both school dropout (Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006) and delinquency (Bor, Najman, O'Callaghan, Williams, & Anstey, 2001) among males. This type of literature has provided support for school-based interventions to focus on preventing several problem behaviors. One such intervention was developed by social workers at Communities in Schools in Austin, Texas.

Communities in Schools

Communities in Schools (CIS) was developed over 35 years ago, and is an organization that serves over 1.26 million students in approximately 2,700 schools in the United States (Communities in Schools, 2013). In Texas, CIS serves students on 652 campuses, 61,972 of which receive selective intervention (also known as Tier 2 or group level intervention; Division of Federal and State Education Policy, 2013). Communities in Schools was recently identified as one of three best practices for dropout prevention interventions being implemented in Texas (National Dropout Prevention Center, 2008). Despite promising results associated with the impact of CIS, social workers in Austin, TX recognized a need that their traditional CIS services

failed to meet. Specifically, they recognized that many of the young men on their campuses were dropping out of school and were becoming engaged in delinquent and gang-related activity. At the time the intervention was developed, there were no gender-specific EBPs that met the needs of the at-risk male population. Out of this need, the XY-Zone was developed.

The XY-Zone Intervention

Driven by several theoretical perspectives pertinent to social work (strength-based perspective, risk and resiliency model, and developmental theories), the XY-Zone was developed in 1999 to intervene during a key developmental period for young men, the adolescent years and transition from middle school into high school. The program developers turned to research on risk and protective factors (e.g., Hawkins, Catalano, & Miller, 1992) and developmental assets (e.g., Leffert et al., 1998) to inform the development of the intervention. Specifically, the intervention approaches coalesced around focusing on strengths and enhancing protective factors to provide a buffer against problem behaviors among at-risk youth. The curriculum is driven by six assumptions (see Box 2.1) and five “pillars.” A combination of this research and focus groups conducted with the first participants in the XY-Zone (primarily minority urban male youth from lower socioeconomic neighborhoods) informed the development of the five guiding principles or pillars known as the five Rs: respect, responsibility, relationship, role modeling, and reaching out (see Table 2.1). Through these principles, the participant explored healthy psychosocial behaviors and thoughts in a structured 12-session group setting. Some specific goals associated with the 5 Rs are to practice critical thinking skills, build emotional intelligence through creative interaction with peers, define and develop a healthy understanding of self-respect (both physically and emotionally), recognize and appreciate individual differences and others’ basic right to respect, and increase awareness for personal responsibility for the self.

Students eligible to receive XY-Zone services must display risk factors in one of the following risk domains: academic risks (failed two or more core classes, failed state examination test, lack of class participation, and homework incompleteness), attendance risks (excessive absences and tardies), behavioral risks (gang involvement, substance use, poor classroom conduct, poor social skills, poor self-esteem, violence, delinquent conduct, and family or emotional crisis), and social service issues (difficulty with the following: college readiness, life skills, health, career/employment, housing, daycare, and grief or loss). These specific risk factors and domains have been chosen based upon literature that connects these risks to problem behaviors such as delinquency, violence, and school-dropout (Wilson, Gottfredson, & Najaka, 2001).

Box 2.1: Six Assumptions Underlying the XY-Zone

- We all need another person who knows us really well and cares deeply about us: this can only come about over time with frequent interaction.
- All human beings share universal characteristics and are a part of a larger whole – the brotherhood of mankind.
- Each person is a unique individual.
- Each person is a member or part of a cultural/ethnic history deserving appreciation and complete respect.
- Emotion drives attention, which drives learning, memory, and problem-solving.

Table 2.1 : The 5 Rs Described

Respect	Respect is considered fundamental to the success of the XY-Zone. Respect is modeled for new participants by both XY-Zone coordinators and students who have been in the program. The program staff facilitate a process with the 5 Rs group to allow each group of members to define respect. Although this process takes time, it models respect for the participants' judgment. It also allows the students to practice respecting each other's opinions and ideas as they negotiate their site's definition of this core value. Examples of respect that have been given by members include: respect of self is reflected in how a member dresses or comes prepared to class, respect for others is something that is given rather than earned, and respect is given to others despite different cultural backgrounds.
Responsibility	Responsibility is learned through participation in community activities and leadership roles. Similar to the respect construct, students are challenged to define that it means to be responsible on their campus and within their community. Through structured group activities, members increase their awareness of their responsibility to self, each other, family, peers, and the community. Examples of how students have defined responsibility include: being responsible to come to class prepared with necessary materials (pen, paper), taking responsibility for poor choices and/or being responsible for making a mistake, and showing up to group or class on time.
Relationships	Building healthy relationships that are based on respect is also important. Fraternity, the condition of brotherhood, is emphasized, making the young men part of something larger than themselves. Often, members of the XY-Zone did not have a significant male role model, nor have they had significant positive relationships in their lives. The relationships formed by participating in the XY-Zone offer members an example of what healthy relationships look like. By engaging in these healthy relationships, students are given tools to guide their interaction with their family and other peers.
Role Modeling	Role modeling is an important concept that begins from the first session. Although the XY-Zone coordinator role-models health communication and behavior, this pillar becomes much more meaningful when members begin to guide one another and hold each other accountable. Becoming a role model in the groups, at school, during community outings, and in the family setting is recognized as a key level of leadership for XY-Zone members.
Reaching Out	The Reaching out pillar is designed to highlight a member's role to society. Through engaging in community-based service learning activities, members have the opportunity to develop a reciprocal relationship with their community. One of the goals is for them to recognize that they are no longer simply taking from their community, but also giving back. By engaging in group projects, members learn to support one another, allowing opportunities to practice the other four pillars. Participation in service projects not only allows members to see themselves in a new light, but also creates positive change in how community residents view the XY-Zone members.

Note: Adapted from Aguiniga, D. M., Streeter, C., Hurewitz, M. (2007).

Since the previous publication of the XY-Zone in *Children & Schools*, (Aguiniga, Streeter, & Hurewitz, 2007) the program has evolved from one phase of intervention to three. The new three-phase manual was completed in 2008. Once a participant has completed the 5 Rs stage, they become eligible to enter into the next newly developed step: leadership. The leadership step builds upon the guiding principles, and students are encouraged to explore and practice leadership with each other, students in the school, their families, and in the community. Similar to the 5 Rs step, this phase is also delivered through 12 one-hour group sessions. Some goals associated with this phase are to explore and define positive leadership, practice positive leadership through making healthy decisions and cooperation with others, explore and develop personal integrity and awareness, enhance the development of moral reasoning, and develop interpersonal competences such as validation and communication. During the leadership step, participants also organize and carry out a service learning project in their community.

Once a participant has completed the second step, he becomes eligible for the third and final step of treatment: ambassador. Considered to be more of a contemplative phase, those in the ambassador step become a mentor to those in previous steps (as well as to those not involved in the program) and are “expected to explore the principles of leadership and the five R’s, and determine their personal relevance to their lives as young men” (Allen, 2008, p. i). Once a young man completes all three steps, he is eligible to become a “Blue Shirt” member and receives a blue XY-Zone shirt. He is then considered to be an XY-Zone member for life. Throughout participation in the program, XY-Zone participants are also offered various experiences and services through the following: career development, mentorship, community services projects,

peer education, and health education around men's health and adolescent pregnancy (RH2 Consulting, 2009).

XY-Zone services are administered by an XY-Zone coordinator at each school. Each coordinator must have earned a bachelor's degree and has participated in an extensive training process. Specifically, each coordinator attends two days of training associated with the XY-Zone program. In addition, the coordinators draft a professional development plan with the XY-Zone director that includes professional goals and additional trainings. The coordinators are required to attend two trainings annually that focus on effective approaches with at-risk youth. Lastly, each coordinator must attend 16 hours annually of staff development training through CIS or an outside agency.

The XY-Zone coordinator reports to and collaborates with both the XY-Zone program director and a CIS program manager in their respective school. The CIS program manager typically holds a masters degree in social work or a related field and is available to the XY-Zone coordinator to provide supervision and support as needed. The XY-Coordinator also meets with the CIS program manager at their school for weekly supervision.

Although the XY-Zone intervention is manualized, feedback from focus groups has influenced some important changes. Coordinators are encouraged to individualize the sessions to the specific group with whom they are working. For example, some 5 Rs group sessions focus on respect and cultural differences. If the XY-Zone coordinator feels that several issues exist that are related to respecting others from various cultural groups, the coordinator may spend more than sessions on that topic. For this reason, more sessions are often provided. The XY-Zone program director believes this individualization of group sessions to be one of the strengths of the program.

Practice-Based Evidence and the XY-Zone

As aforementioned, the developers of the XY-Zone have taken the “scaling up” PBE approach with the XY-Zone. First they used research from the literature, as well as results from focus groups within the target population, to define and develop the intervention. As the program grew and the director and coordinators saw a need to extend support, additional focus groups informed the development of the manual with extended groups and services. Then program administrators contracted with program evaluation agencies to examine the effectiveness of the XY-Zone.

2007-2008 evaluation. The first evaluation was conducted during the 2007-2008 school year. One hundred and sixty-seven students enrolled in the XY-Zone participated in this study. Participants were primarily Hispanic (46%) and Black (39%), and were mostly 10th graders (35%), followed by 9th graders (31%), 11th graders (20%), and 12th graders (14%). Additional participant characteristic data revealed that most received free and reduced lunch (or some other form of public assistance, 79%), and most were not living with both biological parents (69%), but were living in single parent homes (49%), in charge of caring for their siblings (79%), and were students whose father (70%) and mother (52%) did not graduate from high school. Using a one-group pretest/posttest design, preliminary data revealed that the majority (70% or above) of participants either maintained or improved their behavior (e.g., classroom conduct), school attendance, grade promotion, and academics (e.g., improved semester grades). Additionally, it was found that students who received more total service hours were more likely to improve in all aforementioned areas, and personal responsibility, self-worth, family relationships, and risky behavior variables all revealed improvement over time.

2008-2009 evaluation. Two hundred and fifty-four students enrolled in the XY-Zone participated in this study. Similar to the data from 2007-2008, the majority of participants were either Hispanic (48%) or Black (41%). Student's living situations and additional characteristics were similar to those reported from the previous year. Eighty-nine percent of the students either maintained or improved in at least one of the four target risk areas, which is an increase from the previous year (82%). This study also offered information measuring changes in positive self-image and risk-taking behaviors. Results revealed improvement on almost all measures related to self-image, including thinking positively about the future, doing well in school, increased self-esteem, making friends, seeing themselves as leaders, and accepting people different from themselves.

On January 26, 2010, the College Board Advocacy and Policy Center released a report entitled *The Educational Crisis Facing Young Men of Color* at a Capitol Hill briefing in Washington, D.C. In the report, the XY-Zone was one of twelve highlighted model programs aimed to intervene in the lives of those most at-risk for future problems: adolescent males of color. Approximately 14 years after the program was initially developed, the XY-Zone is now offered in schools in Texas and Louisiana. This male-only program has shown the ability to both be implemented and sustained in urban high schools with at-risk primarily minority youth from lower socioeconomic neighborhoods. Although the XY-Zone has been highlighted as one of 12 model programs and is being implemented in two states, limitations in research design have prevented important questions from being answered. For example, program evaluators only used data that was collected by the agency to calculate results, and did not use well-validated and reliable scales to measure primary outcomes associated with the program. In addition, the way in which the data were collected prevented evaluators from looking at the impact of the stages of

the program (5 Rs, leadership, ambassador, and blue shirt) on outcomes. To continue to “scale up” and determine the effectiveness of the XY-Zone, the social work administrators at the agency partnered with the School of Social Work at the University of Texas at Austin to conduct further evaluation. Articles two and three of this dissertation present an example of the next step in the PBE approach with the XY-Zone, a gender-specific program designed to increase protective factors among those most at-risk for problem behaviors.

CHAPTER 3

THEORIES OF SCHOOL-BASED DELINQUENCY PREVENTION

Introduction

For nearly a century, theologians have pondered and attempted to explain and prevent the phenomenon of delinquent and criminal behavior. Much of the criminological frameworks used today have come from sociological fields and attempt to explain crime as a result of environmental effects on human behavior (Hoge, 2001; Thornton & Voigt, 1992; Trojanowicz & Morash, 1992). Very few theorists have attempted to explain the prevention of delinquency through a school-related framework. One model, however, that has attempted to explain the prevention of delinquency is the social development model (SDM). This model is strong because of its empirical foundation, and it is one of the only frameworks that attempts to both explain delinquency prevention through school-related transitions and offers key concepts that coalesce around effective intervention. In addition to a description of SDM, this section also briefly describes the four school-based EBPs that met inclusion criteria for article one in this dissertation and their accompanying theoretical frameworks. Lastly, this section offers a description of the theoretical perspectives that have informed the intervention presented in articles two and three, the XY-Zone.

Social Development Model

Richard Catalano and David Hawkins (1986) developed a model of delinquency prevention that incorporates differential association (Matsueda, 1988; Sutherland, 1973), social

learning (Akers, Krohn, Lanza-Kaduce, & Radosevich, 1979; Bandura, 1977), and social control (Hirschi, 1969) theories and coalesces around school-based developmental changes. This theoretical approach is known as the social development model (SDM). Catalano and Hawkins (1986) assert that educational environmental transitions (e.g., preschool to elementary, elementary to middle school, and middle school to high school) during development impact behavior. Specifically, it is assumed that particular risk and protective factors are more malleable and have more influence during various developmental periods, and prevention interventions should be designed to intervene during specific developmental periods. Below is a brief description of the three theories that inform the SDM, followed by key features of SDM, assumptions, and descriptions of the developmental stages as they pertain to risk and protective factors and school-based prevention. Finally, content regarding empirical support for SDM as well as critiques of the model will be described.

Differential Association Theory

Differential association theory was first developed by Edward Sutherland (1939) in efforts to strengthen the scientific explanation for deviant behavior. At the time, the field of criminology had come under criticism for primarily using correlates of delinquency and crime as explanations (e.g., poverty, race, and sex). Interestingly, these criticisms are not far from critiques of the risk and protective factor framework (e.g., Luthar, Cicchetti, & Becker, 2000; Luthar & Zelazo, 2003). Sutherland sought to offer a stronger explanation for why individuals engage in criminal behavior. In short, he asserted that differential association theory explains crime through nine assumptions (see Box 3.1) that fall under one of three conceptual umbrellas: normative conflict in the society, differential association and individual criminal acts, and differential group organization (1939; 1947). Sutherland believed that children are not born

delinquent, but that they learn delinquent behavior (or non delinquent behavior) through socialization in their society, individual relationships, and groups to which they adhere. He recognized that the frequency, duration, priority, and intensity of the experience with the delinquent contact played a role in the amount of an effect the contact would have on the individual (Matsueda, 1988).

Box 3.1: Nine Assumptions of Differential Association Theory

1. Criminal behavior is learned.
2. Criminal behavior is learned in interaction with other persons in a process of communication.
3. The principal part of the learning of criminal behavior occurs within intimate personal groups.
4. When criminal behavior is learned, the learning includes: (a) techniques of committing the crime, which are sometimes very complicated; and (b) specific direction of motives, drives, rationalizations, and attitudes.
5. The specific direction of motives and drives is learned from definitions of the legal codes as favorable or unfavorable.
6. A person becomes delinquent because of an excess of definitions favorable to violation of law over definitions unfavorable to violation of the law.
7. Differential association may vary in frequency, duration, priority, and intensity.
8. The process of learning criminal behavior by association with criminal and anti-criminal patterns involves all of the mechanisms that are involved in any other learning.
9. While criminal behavior is an expression of general needs and values, it is not explained by those needs and values, since non-criminal behavior is an expression of the same needs and values.

Social Learning Theory

A theory that came out of Sutherland's work and differential association theory is social learning theory (Akers, Krohn, Lanza-Kaduce, & Radosevich, 1979; Bandura, 1977). In the first descriptions of social learning theory, a third extension of behaviorism (in addition to classical and operant conditioning) was offered: modeling, also called vicarious reinforcement (Newman & Newman, 2009). Different from theories of performance (classical and operant behavior), modeling is a form of observational learning (Bandura, 1977). From this perspective, an

individual observes the positive and negative reinforcements associated with a behavior and, in turn, they will perform/model or resist the behavior based upon their interpretation of the reinforcement.

Social Control Theory

Different from the dominating theories associated with crime during the 1960s, Travis Hirschi (1969) asked a different question regarding the explanation for crime and delinquency. Rather than asking “why do people engage in criminal and delinquent activity,” Hirschi asked “why don’t people engage in criminal and delinquent activity?” Hirschi asserted that humans are born with selfish and crime-prone tendencies (e.g., a child will steal a toy from another child on the playground, the other child might respond by shoving the child who stole his toy) and social bonds ultimately were responsible for preventing an individual from making a deviant decision (Pratt, Franklin, & Gau, 2011). The premise of Hirschi’s (1969) social control theory (also known as social bond theory) is that attachment, commitment, involvement, and beliefs in prosocial values, prosocial people, and prosocial institutions would prevent or control against deviant decisions. Substantial early empirical support exists for social control theory (e.g., Church, Jaggers, & Taylor, 2012; Church, Wharton, & Taylor, 2009; Conger, 1976; Hepburn, 1976; Hindelang, 1973; Hirschi, 1969; Wadsworth, 2000; Wiatrowski et al., 1982), however, there are also weaknesses. A primary concern associated with social control theory is an inability to explain why some youth who have strong conventional bonds still choose to engage in delinquent behavior (Elliott et al., 1982). With this criticism in mind, Catalano and Hawkins (1986) offered a the social development model to describe how youth are both controlled (protected) from delinquency, as well as placed at greater risk of delinquency by learning deviant behaviors through peers and other social groups.

Key Features and Assumptions of the Social Development Model

The SDM is a model of delinquency prevention that draws from social control theory to identify ways in which social bonds are both established and can be strengthened (Catalano & Hawkins, 1986). Through this theoretical lens, a social bond to conventional family, peers, school, and society is viewed as necessary, though not sufficient, to prevent delinquency. In addition, the authors assert that the differential association and social learning theories explain how social bonds are established, as well as account for the relationship between deviant peers and an individual's deviant behavior. The greater the frequency, duration, and intensity an individual has with deviant others (at home, in the peer group, at school, or in their community) the greater the likelihood he or she has of engaging in delinquent behaviors (Catalano & Hawkins, 1986). Antisocial behavior is also inhibited when youth have access to conventional activities and interactions, have the skills for effective participation in these activities and interactions, and received consistent reinforcement for appropriate participation in conventional activities and interactions (Catalano & Hawkins, 1986). Therefore, the social learning processes lead to the development or interruption of conventional social bonds with family, peers, school, and the community. Key features coalesce around the SDM theoretical framework and intervention during important developmental phases.

The first key feature of the model is associated with *intervention points*. An intervention point is an optimal developmental phase during which intervention should be offered to prevent delinquency through decreasing specific risk and increasing identified protective factors. Intervention points have been designed with two assumptions. First, risk and protective factors that are most amenable to change during a particular period should be targeted. Secondly, a

prevention intervention that has demonstrated effectiveness, where possible, with particular risk and protective factors should be chosen.

The second key feature is associated with identification of optimal developmental periods during which specific risk and protective factors are hypothesized to impact behavior. These four social development periods are: 1) preschool family socialization, 2) elementary school socialization, 3) middle or junior high school socialization, and 4) high school socialization. The authors note that it is important to differentiate these phases from “stages” in moral and cognitive development (e.g., Kohlberg, 1969; 1976; Piaget, 1965). The phases in the SDM are associated with environmental transitions that are related to changes in socialization processes among family, peers, and the school setting (Catalano & Hawkins, 1986). The authors further assert that three factors determine the impact of each developmental transition: 1) the level of social bonding established to social units during the previous period; 2) the rewards for conventional and antisocial behaviors which the child perceives as a result of experiences in the prior period, and 3) the opportunities for conventional and antisocial involvements and interactions encountered in the new environment(s)” (Catalano & Hawkins, 1986, p. 57). These key features, in tandem with three identified assumptions (see Box 3.2), provide the background that informs intervention points during the four developmental phases.

Box 3.2: Assumptions of the Social Development Model

- 1) The basic nature of human beings is neither immoral nor moral; humans are amoral.
Their behavior depends upon their own self-interest.
- 2) It is assumed ... that normative consensus exists to the extent that everyone knows the "rules of the game." That is, socialization is assumed to be effective to the extent that virtually all members of the society learn which behaviors are officially sanctioned and understand what is important for success in society. This level of agreement on rules makes group life possible, yet does not preclude conflicts of value or interest.
- 3) The final assumption ... is that human beings are satisfaction seekers and that human behavior depends upon acts of self-interest. People engage in activities or interactions because of the satisfaction they expect to receive from them. This assumption is derived from social learning theory. Behavior in each immediate situation is expected to be conditioned by long- as well as short-term payoffs. It is recognized that the perception and exercise of self-interest is restrained or controlled by ability, opportunity, and experience. One's skills and opportunities to a large extent determine one's ability to achieve or even perceive self-interest. In addition, experience provides empirical information on which to judge the likely impact of one's contemplated next action. Together these three elements tend to set limits on and direct the exercise of "pure" self-interest (Catalano & Hawkins, 1986, p. 35).

Four Developmental Phases

Catalano and Hawkins (1986) drew from empirical literature to offer specific descriptions of risk and protective factors, as well as specific interventions, during these developmental phases.

Preschool Phase. During this phase, the family is considered to be the most influential social bond associated with the risk of or protection against delinquency (Loeber & Dishion, 1983; McCord, 1979; West & Farrington, 1973). Key risk factors during this phase are familial substance use and antisocial behavior (e.g., childhood conduct disorder symptoms). Conventional interactions with family, friends, caretakers are considered to protect against delinquency. Important interventions for this phase include structural family therapy approaches and skills and behavioral training interventions. Researchers have confirmed that these types of intervention are effective for young children displaying antisocial behaviors (e.g., Barkley et al., 2003).

Elementary Phase. The elementary phase is considered to be a time during which school involvement can play a substantial role in prevention of delinquency. In addition, interaction with peers is of greater influence. Key risk factors during this phase include all risk factors mentioned in the preschool phase as well as academic failure in later elementary years (Bluestein et al., 1985), peer substance use, and involvement in unconventional and illegal activities. Conventional interactions with family, teachers, and school peers, and conventional involvement in school and family activities are important protective factors during the elementary phase. These risk and protective factors have been confirmed in recent research (e.g., Hall et al., 2012; Shader, 2004). Teacher delivered interventions are considered particularly relevant during this phase, and interventions should include instructional skills to student peer teaching and

consistent reinforcements associated with conventional behavior. In addition, family interventions during this phase should target effective familial communication, skills and behavioral training, as well as education around the importance of conventional and deviant behaviors so they can be enforced at home. Research on these types of intervention approaches have been found successful for students displaying these risk factors (e.g., Pfiffner, DuPaul, & Barkley, 1998).

Middle/Junior High School Phase. The time students enter into middle/junior high school is a period during which peer socialization becomes a dominant influence (Elliot et al., 1985). In addition to aforementioned risk factors, new factors that place the middle/junior high school student at risk for delinquency are lack of commitment to school, antisocial behavior, having peers who use substances and engage in antisocial behavior, substance use, and involvement in delinquent acts. Protection from delinquency during this phase is associated with conventional interaction with peers, family, school personnel, and conventional activities with the family, peer groups, and school. Recent research has confirmed the impact of these factors on delinquency (Shader, 2004; Hall et al., 2012). Important delinquency prevention interventions should involve familial, peer, and school change to increase conventional involvement and activities. Catalano and Hawkins (1986) assert that conventional involvement during this phase is particularly critical, as youth who are not conventionally connected are more likely to see deviant outlets through which they receive perceived positive reinforcement. They suggest interventions that enhance several skills: refusal skills, conventional coping skills, family communication skills, and crisis management skills. Recent research on interventions that enhance these skills has been found to protect against delinquency (e.g., Nichols, Birnel, Gruber, Brooks-Gunn, & Botvin, 2010).

High School Phase. Peers remain a dominant influence during this phase, and all aforementioned risk and protective factors remain as well. New risks include sexual activity, pregnancy, high levels of employment, and juvenile justice involvement. Researchers have found that youth who engage in sexually risky behavior are at increased risk for school dropout and delinquency (Jessor, 1992). In addition, youth who spend a substantial amount of time working are at increased risk for delinquency because they are not able to be as engaged with conventional school and family activities. Recent research has confirmed this relationship (Paternoster, Bushway, & Apel, 2003). The authors noted in the 1986 publication that no prevention interventions are included during this developmental phase because, at the time, no strong empirical support had been found to prevent delinquency during this phase (Catalano & Hawkins, 1986). Interestingly, the school-based delinquency prevention interventions offering the strongest empirical support today have been with elementary-age students (e.g., Durlak, Weissberg, Dynmicki, Taylor, & Schellinger, 2011). In their 1996 publication, however, they suggest social competence interventions that provide training in recognizing the consequences of risky behaviors, career development, initiating and maintaining healthy relationships, and understanding the importance of community service (Catalano & Hawkins, 1996).

Empirical Tests of the Social Development Model

Since the SDM was introduced, several empirical tests of the model have been conducted. For example, Catalano and colleagues (1999) analyzed data from the Raising Healthy Children project, examining 851 primarily White elementary age students across three years. Results found that conventional involvement and activities accounted for 25% of the variance in participants' problem behavior. Additional evaluations have been conducted that by the same research group that have mostly provided support for the SDM among adolescents in the

Northwest (e.g., Catalano et al., 2005; Catalano, Kosterman, Hawkins, Newcomb, & Abbott, 1996). Most recently Sullivan and Hirschfield (2011) independently reported on the results of a test of the SDM among Chicago public school students who transitioned into middle school (they collected data between 5th and 8th grade). Similar to studies conducted in the northwest, their test largely provided support for the SDM (Sullivan and Hirschfield, 2011).

In addition, some studies have been conducted that have tested certain variables and developmental phases associated with the SDM with minority youth. For example, Choi, Harrachi, Gilmore, and Catalano (2005) tested the applicability of the SDM to urban ethnic minority youth ranging in age from 11 to 15. Of the 2,055 students in their sample, 478 were Black, 491 were Asian, 442 were multiracial, and 644 were White. Results of this cross-sectional study indicated that youths' antisocial beliefs, peer antisocial beliefs, and lack of neighborhood safety were related to problem behavior across all groups. Although important, the results of this study are limited by research design and no causal pathways can be confirmed. In another study with minority youth, Roosa and colleagues (2011) tested the SDM model with 750 Mexican American youth during the transition into middle school. Data was collected from participants in 5th grade and then again in 7th grade. Results indicated that increased associations with deviant peers was the primary predictor of externalizing behaviors (conduct disorder and oppositional defiant disorder symptoms). In addition, they found support for the protective effect of conventional familial bonds against increases in association with deviant peers (Roosa et al., 2011).

EBT School-Based Delinquency Prevention Interventions and Supporting Theories

Four interventions met inclusion criteria for the article presented in Chapter 4 of this manuscript: the Good Behavior Game, LifeSkills Training, Positive Action, and Promoting

Alternative Thinking Strategies (PATHS). Offered below is a brief description of each intervention followed by their corresponding theoretical framework(s).

Good Behavior Game

The Good Behavior Game (GBG) is a school-based intervention that is grounded in behaviorism. The GBG was first tested in the 1960s with a particularly difficult fourth grade class to address problematic classroom behavior (Barrish, Saunders, & Wolf, 1969). Over the past several decades the program has been manualized, and most intervention studies have involved the impact of the GBG with first grade students. This moderately simple intervention involves dividing a classroom of students into two or three groups. Teachers employing the GBG will highlight a number of desired and undesired behaviors, and a particular group will receive a mark when a member exhibits an undesired behavior. The group with the fewest marks at the end of the game (or all groups who have received less than a set number of marks, usually 5 or 6) will receive a reward (e.g., a sticker, extra recess time, getting to go to lunch first). The GBG is to be played for short periods of time at the beginning of the school year, and is to be played with an increased frequency and extended time periods during the course of the school year (Embry, 2002). Different from most school-based interventions, the GBG can be employed in tandem with a teacher's typical lesson plan and does not require the teacher to use class time to deliver a treatment session.

Behaviorism. Behaviorism was a prominent school of thought during the first half of the twentieth century and was largely influenced by Wilhelm Wundt (1896), John Watson (1924), Ivan Pavlov (1927), B. F. Skinner (1953), and Albert Bandura (1977). Behavioral change is associated with three key constructs: classical conditioning, operant conditioning, and modeling. Classic conditioning occurs when a neutral stimulus triggers a behavior. The neutral stimulus has

been linked to something that a person associates with that stimulus. The first example of classical conditioning is Pavlov's dog example. When the dog was presented with food, it would salivate. Then Pavlov began to ring a bell every time the dog was offered food. Finally, the dog became conditioned by the bell, and would salivate when only hearing the bell (Coon & Mitterer, 2010). In work with clients, neutral cues, such as places, people, or feelings may become associated with a problem behavior.

Different from classical conditioning, operant conditioning occurs when a conscious choice is made either to obtain a reward or avoid an unwanted consequence (Gambrill, 1994). Behavioral approaches have been found to be particularly effective with students with ADHD (Pierangelo & Giuliani, 2008). From this perspective, students are able to control behavior or respond in a desired way because of the anticipated reward or an undesirable consequence. The final key construct associated with behaviorism is modeling. Bandura (1977) asserted that students would also become motivated to participate or refrain from a behavior by watching and learning from others. For example, a child may observe a peer raising their hand in class and receive praise from the teacher for patiently waiting with their hand raised. The child then models that learned behavior and raises his hand in attempts to receive the same praise. Supported by these three constructs, there are seven assumptions associated with behavioral theory:

- Behavior is what a person does, thinks, or feels that can be observed. Inferences about a person's mental activity should be minimized because it cannot be directly observed.

Clinical assessment should focus on observable events with a minimum amount of interpretation.

- People are motivated by nature to seek pleasure and avoid pain. They are likely to behave in ways that produce encouraging responses, or positive reinforcement.
- People behave based on their learning, by direct environmental feedback, and also by watching others behave and interact.
- Behavior is amenable to change. A prerequisite for clinical change is that the behavior of concern must be defined in terms of measurable indicators.
- Intervention should focus on influencing reinforcements or punishments for client behaviors. Consistent and immediate reinforcement produces change most rapidly.
- Thoughts and feelings are behaviors subject to reinforcement principles.
- The simplest explanations for behavior are preferred. Practitioners should avoid reification (giving “life” to esoteric concepts such as the “ego”) and searching for “ultimate” causes of behavior. (Walsh, 2006, p. 109-110).

LifeSkills Training

Grounded in social influence and competence enhancement models, the LifeSkills Training (LST) program is designed to prevent tobacco, alcohol, and drug use (Botvin, Griffin, & Nichols, 2006). The LST program is intended for middle and high school students and is delivered through three primary treatment components. These three treatment components are taught through the use of cognitive-behavioral skills training techniques, facilitated group discussions, classroom demonstrations, and traditional didactic teaching methods (Botvin & Griffin, 2004). The first treatment component largely coalesces around self-management skills associated with decision-making and problem-solving. Students are taught how to assess their own strengths and weaknesses, set and achieve their own goals, make important decisions, and how to cope with anxiety. The second treatment component is associated with general social

skills. Students learn how to communicate more effectively, develop healthy peer relationships, and respond to situations that necessitate assertive communication. The final treatment component teaches health information, promotes anti-substance use norms, and teaches students ways in which they can respond to social influences associated with substance use (Botvin & Epstein, 1999; Botvin & Griffin, 2005). Implemented by teachers in a classroom setting, these three treatment components are typically delivered to seventh-graders through 15 manualized lessons (about 45 minutes each) over the course of a school year. Ten booster sessions are delivered in eighth grade and five in ninth grade to reinforce material covered in seventh grade (Botvin & Griffin, 2004).

Problem Behavior Theory. Problem behavior theory was developed by Richard and Shirley Jessor to frame a study that they conducted in the 1960s regarding heavy alcohol use among participants in diverse community in Southwest Colorado (Jessor & Jessor, 1977). Richard Jessor and his colleagues have conducted several empirical studies (Jessor, 1982; Jessor, 1987; Jessor, 1992; Jessor, 1998; Jessor, Turbin, & Costa, 1998; Jessor, Bos, Banderryn, Costa, & Turbin, 1995) since that time, and the data collected further informed the development of the theory that is known today. According to the theory, problem behavior is defined as “behavior that is socially defined as a problem, as a source of concern, or as undesirable by the norms of conventional society and the institutions of adult authority, and its occurrence usually elicits some kind of social control response” (Jessor & Jessor, 1977, p. 33). Examples of social control responses might range from minimal, such as a statement of disapproval, to extreme, such as incarceration (Costa, 2008). The basic premise of the theory is that all behavior is the result of a person-environment interaction.

The theoretical framework includes three domains or systems that explain behavior: environment, personality, and behavior (Rew, 2005). Each system is operationally defined by a set of specific variables that either control against or place an adolescent at risk of problem behavior:

- ***Environment***

- *Examples that increase problem behavior proneness:* low parental disapproval of problem behavior, high peer approval of problem behavior, high peer models for problem behavior, low parental controls and support, low parental controls, and low parent (relative to peer) influence.
- *Examples that control against problem behavior:* parental support, parental controls, peer support, peer controls, parent-friend compatibility

- ***Personality***

- *Examples that increase problem behavior proneness:* low value on academic achievement, greater social criticism, higher alienation, lower self-esteem, greater attitudinal tolerance of deviance, lower religiosity.
- *Examples that control against problem behavior:* higher values of academic achievement, higher values of affection, and religiosity.

- ***Behavior***

- *Problem behavior examples:* alcohol use, cigarette smoking, marijuana use, other illicit drug use, deviant behavior, risky driving, sexually risky behavior
- *Conventional behavior examples:* church attendance, involvement in school, academic achievement (Costa, 2008; Jessor & Jessor, 1977)

Jessor and Jessor (1977) asserted that the higher number of problem behaviors present increased additional problem behavior proneness. Conversely, conventional behavior controls against problem behavior. When the work of Hawkins, Catalano, & Miller was being published (1992), Jessor (1992) asserted that problem behaviors were similar to, if not synonymous with, risk factors and risky behaviors. Additionally, he also published papers describing how controls against problem behavior were also similar to protective factors (Jessor et al., 1998; Jessor et al., 1995).

Social Learning Theory. (See social learning theory section under the social development model.)

Positive Action

Driven primarily by the broad theory of self-concept (Combs, 1962; Purkey, 1970; Purkey & Novak, 1970) and the positive psychology framework (Fredrickson, 2000; Seligman & Csikszentmihalyi, 2000), Positive Action (PA) is a school-based program that was designed to foster positive character development, prevent problem behavior, and enhance academic achievement (Flay, Allred, & Ordway, 2001). Positive Action is a comprehensive curriculum that was developed in the late 1970s to intervene with elementary students (K-6th grade). The intervention includes daily classroom lessons to be delivered by teachers, a school-wide climate component, and family and community involvement components (Flay & Allred, 2003). Consisting of over 140 age-appropriate lessons per grade (K-6th grade), the manualized intervention is delivered for 15-20 minutes each day (for a total of 35 to 45 hours each year) in the classroom. Lessons coalesce around teaching students positive actions associated with the physical, intellectual, social, and emotional areas of the self. The underlying assumption (which has been empirically supported in positive psychology studies; e.g., Seligman, 1998) is that

positive thoughts about the self lead to positive actions, which then lead to increased positive feelings and thoughts about the self and additional positive actions (Flay, Allred, & Ordway, 2001). In addition, the “principal’s kit” provides direction for school-climate, parent involvement, and community involvement activities to promote and reinforce positive actions in each of these important domains. Most studies, however, have only collected data on the outcomes associated with the classroom intervention.

Self-Concept. The major contributors to the broad theory of self-concept date back to Rene Descartes (1644) and Sigmund Freud (1900). The theory has been built upon by Anna Freud (1946), Prescott Lecky (1945), and Carl Rogers (1947). Different from self-esteem (a person’s perception of self-worth and level of satisfaction in the self) and self-report (information a person is willing to disclose), self-concept is defined “as the totality of a complex, organized, and dynamic system of learned beliefs, attitudes, and opinions that each person holds to be true about his or her personal existence (Purkey, 1988, p. 2). Fromm (1956) succinctly described self-concept as “life being aware of itself.”

Purkey (1988) explained that there are three primary assumptions about self-concept. The first is that self-concept is learned. Self-concept is perceived to gradually emerge in the early years of life, and is continuously shaped through experiences with the environment and with others. Because of its malleability, self-concept is believed to have limitless potential for development and actualization. The second assumption is that self-concept is organized. Specifically, a person has countless perceptions regarding their own existence, which is often shaped by experiences with countless others. Through this assumption, researchers have asserted that a stable and fairly organized quality of self-concept provides consistency for the personality. Change in self-concept should theoretically be a slow process associated with one’s

development. Theorists believe that a frequently changing self-concept yields an inconsistent and unreliable personality (Heard & Linehan, 1993). The third major assumption is that self-concept is dynamic. It is believed that a person's self-concept is driven by a slow and constant movement to a "true north" of a perceived existence.

This guidance system not only shapes the ways a person views oneself, others, and the world, but it also serves to direct action and enables each person to take a constant "stance" in life. Rather than viewing self-concept as the cause of behavior, it is better understood as the gyrocompass of human personality, providing consistency for personality and direction for behavior. (Purkey, 1988, p. 4)

Positive Psychology. Considered to be a concept linked to the risk and resilience approach (e.g., Greene, 2008), there has been growing attention over the past decade to the idea of positive psychology. Recognizing that the field of psychology was dominated with deficit-based approaches, Martin Seligman (2000) challenged the field to consider concepts associated with hope, wisdom, creativity, future mindedness, courage, spirituality, responsibility, and perseverance. He asserted that "working exclusively on personal weakness and on damaged brains... has rendered science poorly equipped to effectively prevent mental illness. Psychologists need to call for massive research on human strengths and virtues" (Seligman & Csikszentmihalyi, 2000, p. 7-8). An important assumption of positive psychology is that people who feel positive about themselves will have more positive thoughts and engage in subsequent positive behavior (Fredrickson, 2000). Seligman (2002) recognized that the idea of positive psychology was not new; however, he wanted to present an umbrella under which these schools of thought could be viewed to address client outcomes.

Since Seligman's call, hundreds of articles have been published on the topic, some of which have reported on the efficacy of positive psychology interventions with youth in school settings. Waters (2011) conducted a review of school-based positive psychology interventions and reported on the effects of 12 interventions. Waters found that positive psychology interventions increased well-being, academic performance, hope, school engagement, resilience, and character strengths. This is important because increases in school engagement and academic performance have been found to protect against delinquency (Hall et al., 2012).

Promoting Alternative THinking Strategies (PATHS)

Promoting Alternative THinking Strategies (PATHS) is a school-based program designed to promote children's emotional development, self-regulation, and social problem-solving skills. Grounded in the ABCD (affective-behavioral-cognitive-dynamic) model of development (Greenberg & Kushe, 1993; Greenberg, Kusche, & Speltz, 1990), the PATHS curriculum operates under the four following assumptions:

- 1) Children's ability to understand and discuss emotions is related to both communicative development and the ability to inhibit behavior and show self-control.
- 2) Children's ability to manage, understand, and discuss emotions operates under developmental constraints and is also affected by socialization practices.
- 3) Children's ability to understand their own and others' emotions is a central component of effective problem-solving.
- 4) The school environment is a fundamental ecology, and one that can be a central locus of change (Kam, Greenberg, & Kusche, 2004, p. 68).

Different from many of the deficit-based interventions for at-risk youth, the PATHS curriculum focuses on increasing protective factor outcomes to ultimately prevent and decrease risk factors

and negative trajectories (such as delinquency). This teacher-implemented curriculum consists of 131 manualized lessons that are delivered throughout the school year to elementary students in the classroom setting three times per week for 20-30 minutes.

ABCD Model of Development. The ABCD (affective-behavioral-cognitive-dynamic) model of development (Greenberg & Kushe, 1993; Greenberg, Kusche, & Speltz, 1990) was created to support the PATHS curriculum. The primary assumption of the ABCD model is that developmental integration of affect (including emotion related language), behavior, and cognitive understanding is related to social and emotional competence (Kam, Greenberg, & Kusche, 2004). The basic premise is that a child's ability to cope, which is reflected in behavior and internal regulation, is considered to be a function of the combination of emotional awareness, affective-cognitive control, behavioral skills, and socio-cognitive understanding. In addition, a key assumption of this developmental model is that early developmental affect is an antecedent to important modes of thinking and must be present for optimal maturation (Greenberg, Kusche, & Speltz, 1990).

The model also offers rationale associated with empirical support for externalizing behaviors in youth. For example, disruptive behavior disorders (i.e., oppositional defiant disorder, conduct disorder, and attention deficit hyperactivity disorder) have been found to be associated with deficiencies in behavior (e.g., Mash & Barkely, 1986), cognitive functioning (Schonfeld, Shaffer, O'Connor, & Portnoy, 1988), and social-cognitive processes (Dodge, 1986). In addition, these disorders are also characterized by poor self-control and poor emotion regulation that often lead to uncontrolled behavior and emotional expression (usually revealed in anger) towards the family, school, and community setting. The assumption of the ABCD model

is that these behaviors are due to interruptions during key developmental phases in earlier childhood (Greenberg, Kusche, & Speltz, 1990).

Theoretical Framework for the XY-Zone

Due to the importance of the XY-Zone and this dissertation, a thorough description of the program is previously provided in the literature review section of this manuscript (Chapter 2). The following is a description of the theoretical frameworks that have been identified as informing the XY-Zone. Drawing from the risk and resiliency framework, it is believed that particular risk factors associated with academics, attendance, behavior, and social service issues place a youth at greater risk for problematic trajectories including delinquency, school dropout, and violence. Therefore, students must display one or more risks in the aforementioned domains to receive XY-Zone services. The XY-Zone treatment is also driven by the theoretical underpinnings of resilience and strengths. It is believed that students, despite the presence of risk factors, are capable of positive change, have several innate strengths within themselves and in their environment, and are resilient. In addition, it is believed that investing in developing protective factors will protect youth from adverse outcomes. Lastly, the XY-Zone loosely draws from a developmental perspective. Although program creators do not identify specifics developmental theories, they assert that the transition from “boyhood” to “manhood” that occurs during high school years are key developmental periods in which support and guidance is necessary to divert at-risk youth from a problematic life course. A description of the risk and resiliency framework and the strengths perspective is offered below.

Risk and Resiliency Perspective

Risk and Resiliency History. Considered a newer model for understanding delinquency, the risk and resiliency framework has been developed out of the work of several scholars and

fields of study over the past three decades (Borden, 1992; Fraser & Galinsky, 1997; Greene, 2007; Masten & Reed, 2002; Rutter, 1983; Saleeby, 1996, Werner & Smith, 1992). Concepts of risk and resiliency were first explored by developmental psychologists seeking to understand why particular children were able to avoid problematic outcomes despite adversity (Masten & Reed, 2002). Perhaps one of the most well-known studies in support of this framework is Werner and Smith's (1977, 1982, 1992) longitudinal study of children living in poverty. Through this study, various factors were identified that place a child at risk of adverse trajectories and, additionally, factors were identified that protect a child from encountering these difficult outcomes. The findings from this study have come to shape many school-based prevention programs (Bernard, 1993) and provided a foundation for the key concepts and assumptions in the risk and resiliency framework (Greene, 2008).

Major Assumptions

Risk Factors. According to Howell (2003), “risk factors are those elements in an individual’s life that increase his or her vulnerability to negative developmental outcomes and also increase the probability of maintenance of a problem condition or digression to a more serious state” (p. 104). When a youth progressively accumulates particular risk factors, he or she is considered to be at risk of engaging in delinquent behavior. Herenkohl and colleagues (2001) found that a 10-year old child with six or more risk factors is ten times more likely to become a juvenile delinquent than an 18-year old presenting with one risk factor. Thus, when a greater number of particular risk factors are present in an individual’s life, there is an increase in the odds or probability that deviant behaviors will occur (Werner, 1990). Researchers have also found that particular factors present during different developmental timeframes (e.g., childhood or adolescence) also place a youth at risk of delinquency (Shader, 2004). It is noteworthy that

adolescents displaying multiple or particular risk factors are not assured to become delinquent, but simply at greater risk of developing delinquent behaviors than those not displaying the specific risk factor.

Protective Factors. While a great deal of research has focused on developing an understanding of risk factors, less is known about protective factors. Kirby and Fraser (1997) defined protective factors as factors that assist children and adolescents in guarding against risk. It is believed that the more protective factors present, the less likely the adolescent will engage in delinquent behaviors (Fergus & Zimmerman, 2005; Masten, Cutuli, Herbers, & Reed, 2009). Importantly, researchers have also asserted that protective factors are not simply the opposite of risk factors (e.g., Hall et al., 2012).

Resilience. Many theorists have offered interpretations of resilience (e.g., Anthony & Cohler, 1987; Borden, 1992; Fonagy, Steele, Higgitt, & Target, 1994; Garmezy, 1993; Masten, 1994; Palmer, 1997; Rutter, 1987), some believing resilience to be a successful adaptation to difficult events (Rutter, 1987), while others believe resilience to be the maintenance of continuity of a healthy lifestyle (Borden, 1992), and still others believe resilience to be a developmentally achieved competence (Masten, 1994). Ultimately, resilience is seen by most as the ability to display adaptive behaviors despite adversity (Gordon & Song, 1994; Greene, 2008). Researchers have found that resiliency is a strong protective factor for those potentially at risk of becoming delinquent (Howell, 2008; Weiner, 2003).

Theoretical Models of Risk and Resiliency. Multiple interpretations of the interactions of these key concepts exist and offer differing theoretical assumptions. The two primary models associated with the risk and resiliency framework are *additive* and *interactive* models (Pollard, Hawkins, & Arthur, 1999). The additive model, also known as the compensatory model (Fergus

& Zimmerman, 2005), purports that the independent accumulation of protective factors can counterbalance the negative impact associated with accumulation of risk factors (Fraser, Kirby, & Smokowski, 2004; Masten et al., 2009; Simonton, 1999). The opposite is also assumed to be true, a greater accumulation of risk factors can supersede the impact of a lesser number of protective factors and result in negative behaviors (Fergus & Zimmerman, 2005).

The interactive model assumes that particular factors act as moderating or buffering effects between risk factors and maladaptive outcomes (Fergus & Zimmerman, 2005; Luthar, 1993; Masten et al., 2009; Walsh, 2006). Masten and colleagues (2009) offer two types of interaction effects. The first is known to always be functioning and either reduces or increases the impact of the impending threat on the person's well-being. Examples of this type of interaction are an individual's temperament or personality. They explain that the second type of interaction effect is "threat-activated." In other words, the moderator is triggered as a response to a perceived threat. Some examples include a child's coping responses to a traumatic event, a parent's responses to a serious physical injury of the child, or even emergency services such as foster care (Masten et al., 2009).

Strengths Perspective

Often described in tandem with resilience constructs (e.g., Greene, 2008; Saleebey, 2000), the strengths perspective is an approach that was developed by social worker Dennis Saleebey (1992). The core premise of the strengths approach is associated with empowerment- to empower individuals, families, and communities to recognize and utilize their capacities; to uncover existing options; understand realistic barriers; awaken hopes and aspirations; and align with inner and outer resources to improve quality of life (Cowger, 1994; Rapp, 1988; Saleebey, 1997; Saleebey, 2000). This perspective is informed by a "CPR" triangle. At the top of the

triangle, the “P” represents promise and possibility. On the bottom left, the “C” symbolizes capacities, competencies, and character. And lastly, the bottom right “R” stands for resources, resilience, and reserves (Saleebey, 2000). Saleebey asserts that these constructs are a dynamic core of the strength-based approach, and all must be present for meaningful change and healing.

Box 3.3 highlights the primary assumptions associated with the strengths perspective.

Box 3.3: Strengths Perspective Assumptions

- People who confront stress almost always develop some ideas, capacities, traits, or defenses that may subsequently stand them in good stead.
- Even in the most demanding, tough, lean, and mean environments, there are natural resources – individuals, families, churches, associations, groups- available to individuals, groups, and families.
- Even though people may have labored under years of blame and disapproving opinions of others or self-criticism, habitual pessimism, or unfortunate life decisions, at some level they almost always know what is right for them.
- As a species, humanity surely has – or we would not have survived thus far- an innate capacity for health and self-righting.
- Healing, transformation, regeneration, and resilience almost always occur within the confines of a personal, friendly, supportive, and dialogical relationship. Whether a physician, social worker, psychologist, friend, or relative, the more the power of a caring relationship is actualized with those served, the better for the individual's future and for social work's equipoise.
- Everyone has knowledge, talents, capacities, skills, and resources that can be used to help move them towards their aspirations, solve problems, meet their needs, and bolster the quality of their lives.
- A positive orientation to the future is far more important in the long run for healing and helping than an obsession with a dark and disappointing past.
- Every maladaptive response or pattern of behavior may also contain the seeds of struggle for health and self-righting. (Saleebey, 2000, p. 128-129)

Summary

Each of the aforementioned theoretical frameworks offers important and helpful lens through which delinquency prevention may be viewed. Reflecting the current empirical literature, several of the theories coalesced around risk and protective factors to describe problem behavior and intervention (the social development model, problem behavior theory, and risk and resiliency). In addition, researchers have drawn from empirically validated frameworks to extend and explain risk and protective factor models and how they can inform school-based intervention (behaviorism, social learning theory, social control theory, and differential association theory). Although mostly neglected within the delinquency prevention frameworks (as most have been environmentally related), others have begun to draw from recent empirical work to support the importance of perspectives that look at the individual to explain behavior and opportunities for change (self-concept theory and the ABCD model of development). Some of the newest research, however, has begun to call upon intervention researchers to draw from the impact of both the individual and environmental influences to explain behavior and opportunities for change through a positive or strengths-based framework (positive psychology and strengths-based perspective). As research continues to build an evidence-base for multidisciplinary approaches in explaining behavior and change regarding those at-risk of delinquency, a potentially exciting road for continued theoretical integration and development lays ahead.

CHAPTER 4

ARTICLE ONE

School-Based Delinquency Prevention: A Review of “Evidence-Based” Treatments

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My co-authors contributed by calculating effect sizes, creating the results table, authored the section on statistical procedures, and were available for conceptual consultation as needed.

Abstract

Substantial consequences for both victims and offenders exist as a result of juvenile delinquency, and prevention of delinquency has been deemed as a necessity by practitioners, policy-makers and researchers. School-based interventions that impact delinquency risk and protective factors have been identified as one of the most effective ways to prevent delinquency. Due to difficulties associated with translating evidence-based treatments (EBTs), national databases have been created to assist practitioners in selecting the most effective practices for identified problems. The purpose of this systematic review was to identify the “best” interventions suggested by national EBT databases for school-based delinquency prevention, and to explore the extent to which they were effective in impacting risk and protective factors. The search resulted in the identification of four school-based interventions: the Good Behavior Game, LifeSkills Training, Positive Action, and Promoting Alternative THinking Strategies (PATHS). Small significant effects were found with some risk factors (antisocial behavior/beliefs, substance use, aggression, externalizing behaviors, and hyperactivity) and protective factors (sociability, intolerant attitudes towards deviance, and school engagement). These results are similar to what has been reported in meta-analyses conducted on school-based interventions. This review also highlights that additional school-based delinquency prevention research should be conducted to investigate the extent to which protective factors, practice-based evidence approaches, gender-specific interventions, and selected and indicated level approaches prevent delinquency.

Introduction

Approximately 1.5 million juveniles are arrested annually for delinquent acts in the United States (U. S. Census Bureau, 2012). Although crime rates have begun to decline in recent years, the profound impact of this number is illuminated when one considers the associated consequences. The estimated fiscal costs related to the emotional and financial losses sustained by a victim is substantial: \$8,000 for one attempted robbery, \$18,000 for drunk driving, \$87,000 for non-fatal sexual or physical assault, and \$3,000,000 for a fatal assault (Miller, Cohen, & Wiersema, 1996). There are also great consequences for the individuals who engage in a delinquent trajectory. Youth who become involved in the juvenile justice system are more likely to drop out of school, become alcohol and drug dependent, parent children at an early age, and become incarcerated as an adult (Greenwood, 2008). Often, these consequences have a cumulative “domino effect,” not only in the life of the individual, but also on public health. For example, federal, state, and local governments spend approximately \$75 billion a year on corrections (Kamrany & Boyd, 2012). These types of consequences have led researchers and policy-makers to examine delinquency prevention.

The United States scientific commissions on early childhood development and juvenile offending have called for action to make early prevention of juvenile delinquency a top priority at a macro level (McCord, Widom, & Crowell, 2001; Shonkof & Phillips, 2000; U.S. Department of Health and Human Services, 2001). Researchers have asserted that the most effective way in which large numbers of children can receive delinquency prevention intervention is through the schools (Faggino et al., 2005; Gottfredson, 1997; Wilson & Lipsey, 2007). Ensuring that students receive effective services, however, is a complicated process. Policy-makers, researchers, and practitioners have recognized that the evidence-based practice

(EBP) process for school-based delinquency prevention is compromised by several issues associated with accessibility (e.g., access to journal articles, research that is practitioner-friendly and easy to understand, synthesized treatment information around specific outcomes; Bramlett, Cates, Savina, & Lauinger, 2010; Wilson & Lipsey, 2007). In response, federal and private agencies have created user-friendly databases to offer practitioners and school administrators access to information regarding evidence-based treatments (EBTs; e.g., The Substance Abuse and Mental Health Services Administration's (SAMHSA) National Registry of Evidence-Based Programs and Practices (NREPP)). Practitioners and school administrators utilizing an EBP approach are encouraged to use these databases to find EBTs that are also informed by a combination of knowledge about the students with whom they work and their clinical expertise (American Psychological Association Presidential Task Force on Evidence-Based Practice, 2006). These databases purport to examine and highlight interventions for their “evidence base,” but critics of this approach have questioned the validity of this method and the quality of interventions on these websites (c.f., Duncan & Reese, 2012). Although efforts to encourage the dissemination of the school-based delinquency prevention interventions have increased, no reviews have examined the extent to which interventions labeled as “evidence-based” by these websites are efficacious in preventing delinquency.

Background

Theoretical Model for Delinquency Prevention

Richard Catalano and David Hawkins (1996) developed a model of delinquency prevention that incorporates social learning theory, social control theory, and differential association theory and coalesces around school-based developmental changes. This theoretical approach is known as the Social Development Model. They assert that educational

environmental transitions (e.g., preschool to elementary, elementary to middle school, and middle school to high school) during development impact behavior. A key assumption of this model is that particular risk and protective factors are more malleable during various developmental periods, and prevention interventions should be designed to intervene at the most appropriate time. Another assumption of this model is that the most effective and evidence-based practices should be identified that target delinquency risk and protective factors (Hawkins & Catalano, 1996).

Other researchers have sought to ascertain the breadth of psychosocial factors that may serve as risk and protective factors, as well as, the typologies associated with youth engaging in delinquent behavior to inform prevention (Greenwood, 2008). When researchers describe the epidemiology of delinquency, they frequently draw from Hawkins and colleagues' (1992) research on risk and protective factors associated with delinquency. They have identified five domains under which several factors fall: individual, family, peer, school, and community (for a detailed list of delinquency risk and protective factors see Hawkins, et al., 1992; Shader, 2004; Wasserman et al., 2003). These risk and protective factors have been identified as primary target outcome variables to impact the prevention of juvenile delinquency and have been used to inform school-based EBT delinquency prevention interventions.

Evidence-Based Practice and School-Based Delinquency Prevention

The strongest and most efficacious programs identified as preventing risk factors¹ associated with delinquency are school-based programs (Botvin & Griffin, 2005; Conroy, Sutherland, Snyder, & Marsh, 2008; Greenwood, 2008; Kazak et al., 2010; Welsh & Farrington, 2007). Schools have long been the primary provider of services to children (Kratochwill &

¹ Unfortunately, less is known about the impact of interventions on delinquency protective factors (Welsh & Farrington, 2007).

Shernoff, 2004), and have offered services that target delinquency risk factors for decades (Greenwood, 2008). Gottfredson (1997) explained that schools provide the most consistent access to crime-prone youth throughout important developmental years; they are usually staffed with professionals who desire to see youth succeed; and the community is generally more amenable to the schools' efforts to socialize their children. Schools also provide the best way in which professionals delivering EBTs have access to largest number of students (Faggiano et al., 2005; Wilson & Lipsey, 2007).

Most of the interventions that have been identified as school-based EBTs in preventing delinquency were first developed by researchers outside of the juvenile justice field to address a variety of problematic behaviors, such as substance use, academic failure, problematic school behavior, and child abuse (Greenwood, 2008). However, researchers who developed the Social Development Model (Hawkins & Catalano, 1986) drew attention to these programs for their ability to impact delinquency risk factors, and thus, delinquency prevention (Welsh & Farrington, 2007).

A number of reviews have recently been published investigating the efficacy of school-based interventions on some factors that place a youth at risk of delinquency (Faggiano et al., 2005; Farrington & Ttofi; 2009; Foxcroft & Tsartsadze, 2011; Hahn et al., 2007; Hopfer et al., 2010; Lemstra et al., 2010; Mytton, DiGuiseppi, Gough, Taylor, & Logan, 2006; Stoltz, can Londen, Dekovic, de Castro, & Prinzie, 2012; Thomas & Perera, 2006; Wilson, Gottfredson, & Najaka, 2001; Wilson & Lipsey, 2007). The majority of these reviews reported on outcomes associated with either aggressive behavior or substance use. Almost all of the recent reviews reported a positive and significant overall effect, however, little attention has been given to the critique of specific interventions identified in the reviews. For example, Wilson & Lipsey (2007)

conducted a meta-analysis on school-based interventions for aggressive and disruptive behavior. They reported on the results of 249 experimental or quasi-experimental design studies conducted around the world. Compared to the control groups, they found an overall statistically significant effect ($d = 0.21$) on students' aggressive and disruptive behavior who had received a universal intervention, and also found a significant effect ($d = 0.29$) for students who received a selected or indicated intervention. Additionally, they reported that the majority of school-based interventions were universal (meaning that they were delivered to the whole classroom or school), and concluded that school-based practitioners could choose from a variety of researcher-implemented interventions (Wilson & Lipsey, 2007). Other reviews have reported similar results. Hahn and colleagues (2007) conducted a review of universal school-based programs designed to impact violence and aggression and identified 53 studies that met their criteria. Researchers reported a 15% reduction in violent and aggressive behavior and found that the universal school-based programs were effective at all school levels across all populations (Hahn, Crosby, Moscicki, Stone, & Dahberg, 2007).

Different from the reviews that included universal programs, Mytton, DiGuiseppi, Gough, Taylor, and Logan (2006) published a review in the Cochran Collaboration on school-based secondary/selected programs (interventions given to a specific population, often in a group setting) that impacted aggressive and violent behavior among students who had been identified as aggressive or at-risk of being aggressive. Only including randomized controlled trials (RCTs) conducted in the U. S., they reported on 56 studies. Meta-analytic results indicated a significant overall effect ($d = -0.41$) in the reduction of aggressive behaviors compared to the control groups. Very few studies reported follow-up results through 12 months. Among the seven that did, however, the significant effect ($d = -0.40$) was maintained.

There have also been several reviews of school-based programs on substance use outcomes. Lemstra and colleagues (2010) conducted a systematic review investigating the impact of school-based interventions on alcohol and marijuana use among 10- to 15-year-old adolescents. Researchers only included studies that reported on at least one-year follow-up or longer, and, similar to the Mytton et al. (2006) review, only a small number of studies ($n = 6$) reported on that length of follow-up. They found a significant treatment effect among those who received the intervention for combined substance use across all studies when compared to the control groups.

Exploring effects among a younger population, Hopfer and colleagues (2010) conducted a systematic review of substance use prevention programs with elementary students published between 1980 and 2008. They included experimental, quasi-experimental, and pretest/posttest studies published in the United States and found 30 studies that met inclusion criteria. Similar to studies on aggression, the majority (80%) of the studies examined universal programs. The authors found that 56% of the included studies revealed significant decreases in substance use. Few reviews, however, offered effects and descriptions of specific interventions, so, it is possible that particular interventions may be more effective than others. One of the exceptions was a review published by the Cochrane Collaboration (Foxcroft & Tsertsvadze, 2011). They conducted a review on the efficacy of school-based interventions that targeted alcohol misuse among students and reported that the LifeSkills Training program and the Good Behavior Game were considered to be the most effective interventions (Foxcroft & Tsertsvadze, 2011).

Although the majority of reviews associated with delinquency risk factors have reported on the impact of school-based interventions with aggression and substance use, one review is often cited in the delinquency prevention literature. Wilson, Gottfredson, and Najaka (2001)

conducted a meta-analysis on the impact of school-based prevention interventions on problem behaviors. Specifically, they included comparison group evaluation studies that reported on one of the following outcomes: crime, delinquency, theft, violence, illegal acts of aggression, substance use, school dropout, truancy, nonattendance, aggressive behavior, antisocial behavior, defiance of authority, disrespect for others, suspension, expulsion, and other acting-out behavior. Authors found 165 studies, representing 219 manuscripts, that met their inclusion criteria. Similar to aforementioned reviews, the majority of interventions in this review were delivered in the classroom setting. Authors calculated meta-analytic effects for four primary outcomes: delinquency, substance use, dropout/attendance, and other problem behaviors. They found that interventions had a range of significant and near small effect sizes ($d = 0.13 - 0.17$) with dropout/nonattendance and other problem behaviors, a very small significant effect for substance use ($d = 0.05$), and no effect on delinquency outcomes. However, there was considerable heterogeneity across interventions, suggesting that some were more effective than others.

Evidence-Based Databases

Although a substantial number of school-based interventions have been labeled as EBTs for impacting delinquency risk, the gap between research and practice still exists and is problematic (Bramless, Cates, Savina, & Lauinger, 2010). Few school-based practitioners have access to scientific journals and these reviews, and it can be overwhelming to review and appraise the evidence-base. In addition, school-based professionals' time is valuable, often stretched, and limited. Despite these difficulties, the call for schools to implement EBTs has increased (Wilson & Lipsey, 2007). Due to these reasons, among several others, practitioners are frequently encouraged to find EBTs through free databases offered online.

One example that is often cited in the literature is SAMHSA's NREPP (e.g., Kratochwill et al., 2012). The NREPP database was created in 1996 with the goal of disseminating EBPs (Hennessy, Finkbiner, & Hill, 2006). Since that time, their expert reviewers have reviewed thousands of interventions that impact dozens of mental and behavioral health outcomes. Interventions that meet their criteria are given ratings for quality of research and readiness for dissemination. Other information provided on each intervention includes: a brief description of the program; outcomes; gender, age, and ethnicity of participant groups; settings; geographic location (e.g., urban, suburban, rural); adaptations; adverse effects; research study citations; costs of implementation; and contact information (c.f., www.samhsa.gov).

Hennessy and Green-Hennessy (2011) conducted a review of the interventions posted on NREPP between 2007 and 2010 (with the exception of substance use interventions), and reported on 91 of the 159 interventions listed on NREPP. They found that about half (48%) of the interventions were conducted in a school setting and 41% of the participants were exclusively children or adolescents. Although this review is helpful in offering readers overall information about some of the interventions on the NREPP website, other authors have asserted that practitioners should consult several EBT websites, looking for interventions that have achieved their highest rankings (Center for the Study and Prevention of Violence, n.d.). They caution that programs identified as a best practice by only one or two websites does not necessarily mean that it is an EBT. For example, Project ALERT is currently listed on the NREPP website as an EBT, but it has been removed from other websites (such as the Colorado Blueprints site and OJJDP's model programs site) because of recently published studies that found either no treatment effects or negative treatment effects (Clark et al., 2010). Examples like Project ALERT highlight the importance of examining the evidence across multiple EBT websites.

Research Questions

Practitioners seeking to find the “best” evidence for school-based delinquency prevention are encouraged to explore EBT websites for interventions that have effectively impacted delinquency risk and protective factors in rigorous research studies (e.g., Center for the Study and Prevention of Violence, n.d.; Hennessy, Finkbiner, & Hill, 2006). Criticisms, however, exist regarding the extent to which programs suggested by these databases are effective (c.f., Duncan & Reese, 2012). To date, no review of school-based delinquency prevention interventions identified as “evidence-based” on public EBT websites exists. Therefore, the purpose of this review is to 1) identify and describe the “best” school-based delinquency prevention interventions identified by national EBT registries, and 2) describe the effects of those interventions on key delinquency risk and protective factors.

Methods

Inclusion Criteria

To be included in this review, studies had to have been: a) listed on four or more of the following national databases aimed to help professionals identify EBTs: the Coalition for Evidence-Based Policy; Blueprints for Violence Prevention; NREPP; OJJDP’s Model Programs; Office of Justice Programs’ Crime Solutions; School Success Best Practices; and What Works Clearinghouse, b) labeled with the highest rating from the EBT website, c) conducted in the United States, d) a randomized controlled trial (RCT) design, e) conducted exclusively in the school setting, f) designed to address at least one risk or protective factor associated with juvenile delinquency, and g) published between 1992-2012. Only RCT design studies were included because the RCT design is considered to be the gold standard in evaluating delinquency prevention programs (Welsh & Farrington, 2001), and experts caution against comparing the

results of quasi-experimental designs with RCTs (Piquero, Jennings, & Farrington, 2010). The inclusion criteria of RCTs also seemed particularly important, as these studies produce the highest quality efficacy studies that may be used to guide practice.

Search Process

All seven databases were searched for school-based interventions that were identified as having the highest rating of evidence as determined by the national database and met this study's inclusion criteria. (See the "search results" section below for a more thorough description of selected interventions.) Once interventions were determined to be eligible, academic databases were searched to find all published RCTs associated with each intervention over a 20-year timeframe (1992-2012). The name of each specific intervention was entered into the search term box for the following academic databases: Academic Search Complete, CINAHL, ERIC, MEDLINE, and PsycINFO.

Coding

Two independent coders coded the included articles and followed the standards outlined by Cooper (1998). First, the two researchers independently coded two articles and then met to compare and answer any remaining questions that emerged. Then, one of the researchers coded all included studies, and the second researcher randomly selected and coded 20% of the included studies for inter-rater reliability. Finally, coding documents were compared and found to have a high level of agreement. All remaining discrepancies were discussed and resolved.

Statistical Procedures

Statistical analysis was conducted to produce descriptive information on the characteristics of the included studies and interventions, effect sizes of each intervention for conceptually distinct risk or protective factors of interest to this review, and, when possible, a

weighted mean effect of each intervention on specific risk and protective factors. The effect size statistic allows for study findings measured using different measures or scales to be standardized, thus allowing for the numerical values to be interpreted in a consistent manner and permitting meaningful comparison and analysis across studies (Lipsey & Wilson, 2001). Effect sizes go beyond the typical statistical significance normally reported with *p*-values by estimating the magnitude and direction of the treatment effect (Littell, Corcoran, & Pillai, 2008).

For this review, effect sizes and 95% confidence intervals were calculated using Comprehensive Meta-Analysis software 2.0 (Borenstein, Hedges, Higgins, & Rothstein, 2005). Hedges' *g* effect size statistic was calculated for all studies when possible. For two studies, the odds ratio effect size was reported by the study authors and is the effect size statistic utilized in this review. Effect sizes for conceptually distinct risk and protective factors were calculated for each study for both short-term effects (outcomes measured at post-test to 1 year post-intervention) and long-term effects (outcomes measured greater than 1 year post-intervention). To ensure statistical independence of effect sizes, only one effect size was calculated per study per outcome per time frame. Most studies used a no treatment comparison group. In cases of studies with more than one comparison group, the comparison group that received the least amount of intervention was utilized to provide similar comparisons across studies. In cases where multiple measures or multiple reporters were utilized to measure the same construct in a study, a study-level average was calculated. Hedges's *g* effect sizes are reported such that positive estimates indicate favoring the intervention group and negative effect sizes indicate results favoring the control group.

Meta-analysis was conducted in Comprehensive Meta-Analysis 2.0 (Borenstein, Hedges, Higgins, & Rothstein, 2005) to pool effects across studies when there were more than two

studies reporting effects on the same outcome within the same time period. Analyses were inverse variance weighted using random effects statistical models. Random effects weighted mean effect sizes were calculated using 95% confidence intervals. Estimates of Cochrane's Q was used to assess heterogeneity in the effect sizes (Shadish & Haddock, 1994). Due to the small number of studies that measured the same outcomes within each time period the authors were not able to conduct meaningful moderator analyses to assist with understanding what factors contributed to the heterogeneity.

Results

Search Results

Each of the seven aforementioned EBT databases were searched for interventions that met the inclusion criteria. The search process for each database varied due to differences regarding the way in which the websites were created. For the Coalition for Evidence-Based Policy, there were 9 “top tier” interventions assessed for inclusion. Of the 34 school-based programs listed on the Blueprints for Violence Prevention website, four “model” programs were assessed for inclusion. Because NREPP did not have a search option associated with a research rating, all 143 school-based interventions listed were initially assessed. The NREPP website gave interventions scores ranging from 0-4 for the quality of research and readiness for dissemination, and those that met inclusion criteria and had rating of 3.0 or higher were included in the review. Twenty-three school-based interventions labeled as “exemplary” were included from the OJJDP model programs website. The Office of Justice Programs’ Crime Solutions database provided information on 70 interventions with their highest rating of “effective.” The School Success Best Practices website offered 143 “evidence-based practices” (which is their top rating) that were initially reviewed. And finally, the What Works Clearinghouse offered 16 school-based

interventions that had the highest effectiveness rating with positive results supported from a “medium to large” extent of evidence. After searching through the total potential interventions ($n = 438$), four interventions met inclusion criteria (see Table 4.1) and were highlighted with the highest rating on four or more of the EBT websites: the Good Behavior Game (GBG), LifeSkills Training (LST), Positive Action (PA), and Promoting Alternative THinking Strategies (PATHS).

Table 4.1

EBT Websites of Included Interventions

<i>EBT Websites</i>	<i>GBG</i>	<i>LST</i>	<i>PA</i>	<i>PATHS</i>
Coalition for Evidence-Based Policy		X		
Blueprints for Violence Prevention		X		X
NREPP	X	X		
OJJDP Model Programs	X	X	X	X
Office of Justice Programs	X	X	X	X
School Success Best Practices	X	X	X	X
What Works Clearinghouse			X	

Each of these four interventions were entered in the search box for the aforementioned academic databases. (Because LifeSkills Training is sometimes incorrectly titled “Life Skills Training,” both search terms were used in the search process.) The search yielded a total of 1566 articles (149 for the GBG, 499 for LST, 849 for PA, and 69 for PATHS). Ultimately, 23 articles reporting on the effects of 13 studies met inclusion criteria and were included in this review (4 for the GBG, 12 for LST, 3 for PA, and 4 for PATHS).

Description of Interventions and Meta-Analytic Results

Good Behavior Game. The Good Behavior Game (GBG) is a school-based intervention that is grounded in behavioral therapy principals. The GBG was first tested in the 1960s with a

particularly difficult fourth grade class to address problematic classroom behavior (Barrish, Saunders, & Wolf, 1969). Over the past several decades the program has been manualized, and most intervention studies have involved the impact of the GBG with first grade students. This moderately simple intervention involves dividing a classroom of students into two or three groups. Teachers employing the GBG will highlight a number of desired and undesired behaviors, and a particular group will receive a mark when a member exhibits an undesired behavior. The group with the fewest marks at the end of the game (or all groups who have received less than a set number of marks, usually 5 or 6) will receive a reward (e.g., a sticker, extra recess time, getting to go to lunch first). The GBG is to be played for short periods of time at the beginning of the school year, and is to be played with an increased frequency and extended time periods during the course of the school year (Embry, 2002). Different from most school-based interventions, the GBG can be employed in tandem with a teacher's typical lesson plan and does not require the teacher to use class time to deliver a treatment session.

Table 4.2 illustrates that the GBG had a small ($g = 0.31$), but positive significant effect on the school engagement protective factor. It was also found that the GBG had a positive small effect on reducing participants' substance use ($g = 0.24$) and antisocial behaviors/beliefs ($g = 0.13$). All of these results were found from two studies that reported on the impact of the GBG at 14-year follow-up.

Table 4.2

Risk and Protective Factor Effect Sizes for Included Studies

	Short-Term		Long-Term	
	ES	95% CI	ES	95% CI
GBG				
PROTECTIVE FACTORS				
School Engagement			.31 ^a	.09, .54
RISK FACTORS				
Antisocial behavior/beliefs			.13 ^b	-.14, .39
Substance use			.24 ^b	-.15, .64
LifeSkills Training				
PROTECTIVE FACTORS				
Intolerant attitudes toward deviance			.20 ^a	.07, .34
RISK FACTORS				
Aggression	.77 ^{a,d}	.49, 1.21		
Antisocial behavior/ beliefs	.17 .68 ^{a,d}	-.35, .38 .48, .98	.08 ^a	.01, .134
Peer antisocial beliefs			.06	-.01, .13
Substance Use	.19 ^b	-.02, .41	.41 ^{a,d} .08 ^c	.22, .75 -.01, .17
Positive Action				
PROTECTIVE FACTORS				
N/A				
RISK FATORS				
Aggression	.11 .42 ^{a,d}	-.07, .28 .24, .72		
Substance Use	.16 .39 ^{a,d}	-.02, .34 .17, .88		
PATHS				
PROTECTIVE FACTORS				
Sociability	.13	-.07, .42	.34 ^a	.27, .41
RISK FACTORS				
Aggression	.29 ^a	.09, .49		
Externalizing	.36 ^a	.14, .59	.18	-.22, .57
Hyperactivity	.22 ^a	.02, .42		

LifeSkills Training. Grounded in social influence and competence enhancement models, the LifeSkills Training (LST) program is designed to prevent tobacco, alcohol, and drug use (Botvin, Griffin, & Nichols, 2006). The LST program is intended for middle and high school students and is delivered through three primary treatment components. These three treatment components are taught through the use of cognitive-behavioral skills training techniques, facilitated group discussions, classroom demonstrations, and traditional didactic teaching methods (Botvin & Griffin, 2004). The first treatment component largely coalesces around self-management skills associated with decision-making and problem-solving. Students are taught how to assess their own strengths and weaknesses, set and achieve their own goals, make important decisions, and how to cope with anxiety. The second treatment component is associated with general social skills. Students learn how to communicate more effectively, develop healthy peer relationships, and respond to situations that necessitate assertive communication. The final treatment component teaches health information, promotes anti-substance use norms, and teaches students ways in which they can respond to social influences associated with substance use (Botvin & Epstein, 1999; Botvin & Griffin, 2005). Implemented by teachers in a classroom setting, these three treatment components are typically delivered to seventh-graders through 15 manualized lessons (about 45 minutes each) over the course of a school year. Ten booster sessions are delivered in eighth grade and five in ninth grade to reinforce material covered in seventh grade (Botvin & Griffin, 2004).

Researchers investigating the impact of LST with students reported on four delinquency risk factors (aggression, antisocial behavior/beliefs, peer antisocial beliefs, and substance use) and one protective factor (intolerant attitudes towards deviance). Compared to those in the control group, short-term results revealed that participants receiving LST were 23% less likely

($OR = 0.77$) to have aggressive behaviors and 32% less likely ($OR = 0.68$) to have antisocial beliefs and behaviors, both of which were significant. In a different short-term study, there was a small ($g = 0.17$) non-significant effect on participants' antisocial behaviors and beliefs. The final short-term outcome reported was substance use. Effects across studies revealed a small ($g = 0.19$) non-significant effect when comparing the substance use of LST participants with control students. Conversely, those who participated in LST were found to have significantly higher levels of intolerant attitudes towards deviance when compared with the control group. This long-term treatment effect was small ($g = 0.20$). Long-term significant intervention effects were found for students who received LST. Specifically, they were less likely to use substances ($OR = 0.41$) and reported fewer antisocial behaviors and beliefs ($g = 0.08$). Those who received LST were also significantly more likely to report having intolerant attitudes toward deviance at long-term follow-up. The long-term effect on peer antisocial beliefs was not significant.

Positive Action. Driven primarily by the broad theory of self-concept (Combs, 1962; Purkey, 1970; Purkey & Novak, 1970), Positive Action (PA) is a school-based program that was designed to foster positive character development, prevent problem behavior, and enhance academic achievement (Flay, Allred, & Ordway, 2001). Positive Action is a comprehensive curriculum that was developed in the late 1970s to intervene with elementary students (K-6th grade). The intervention includes daily classroom lessons to be delivered by teachers, a school-wide climate component, and family and community involvement components (Flay & Allred, 2003). Consisting of over 140 age-appropriate lessons per grade (K-6th grade), the manualized intervention is delivered for 15-20 minutes each day (for a total of 35 to 45 hours each year) in the classroom. Lessons coalesce around teaching students positive actions associated with the physical, intellectual, social, and emotional areas of the self. The underlying assumption (which

has been empirically supported in positive psychology studies; e.g., Seligman, 1998) is that positive thoughts about the self lead to positive actions, which then lead to increased positive feelings and thoughts about the self and additional positive actions (Flay, Allred, & Ordway, 2001). In addition, the “principal’s kit” provides direction for school-climate, parent involvement, and community involvement activities to promote and reinforce positive actions in each of these important domains. Most studies, however, have only collected data on the outcomes associated with the classroom intervention.

Two studies included in this review on PA reported the short-term results of two delinquency risk factors: aggression and substance use. In one study, participants revealed a 58% ($OR = 0.42$) significant reduction in aggressive outcomes and a 61% ($OR = 0.39$) significant reduction in substance use outcomes. The second study revealed small effects for both aggressive ($g = 0.11$) and substance use ($g = 0.16$) outcomes, neither of which were significant.

Promoting Alternative THinking Strategies. Promoting Alternative THinking Strategies (PATHS) is a school-based program designed to promote children’s emotional development, self-regulation, and social problem-solving skills. Grounded in the ABCD (affective-behavioral-cognitive-dynamic) model of development (Greenberg & Kushe, 1993; Greenberg, Kusche, & Speltz, 1990), the PATHS curriculum operates under the four following assumptions:

- 1) Children’s ability to understand and discuss emotions is related to both communicative development and the ability to inhibit behavior and show self-control.
- 2) Children’s ability to manage, understand, and discuss emotions operates under developmental constraints and is also affected by socialization practices.
- 3) Children’s ability to understand their own and others’ emotions is a central component of effective problem-solving.

- 4) The school environment is a fundamental ecology, and one that can be a central locus of change (Kam, Greenberg, & Kusche, 2004, p. 68).

Different from many of the deficit-based interventions for at-risk youth, the PATHS curriculum focuses on increasing protective factor outcomes to ultimately prevent and decrease risk factors and negative trajectories (such as delinquency). This teacher-implemented curriculum consists of 131 manualized lessons that are delivered throughout the school year to elementary students in the classroom setting three times per week for 20-30 minutes.

Results from the PATHS studies provided data on one protective factor (sociability) and three risk factor outcomes (aggression, externalizing behaviors, and hyperactivity). It is important to note that externalizing behaviors represent a group of delinquency risk factors. These studies used one measure that operationally defined these externalizing behaviors as aggressive, impulsive, hyperactive, and antisocial. Each behavior is a risk factor for delinquency, and short-term results revealed a significant effect ($g = 0.36$) for students who received PATHS when compared to the control. Short-term outcomes associated with aggression ($g = 0.29$) and hyperactivity ($g = 0.22$) were also significant. Interestingly, effects for sociability ($g = 0.13$) were not significant during the short-term evaluation, but became significant and revealed a greater effect size ($g = 0.34$) during the long-term follow-up investigation. Conversely, effects on externalizing behaviors were no longer significant at the follow-up evaluation.

Discussion

Recognizing the numerous limitations that exist for practitioners and schools to identify and implement EBTs that impact their specific needs or problems (e.g., O'Connell, Boat, & Warner, 2009), researchers have encouraged the practice of identifying interventions across multiple EBT websites. However, others have criticized this approach, questioning the validity

and quality of interventions on these databases (Duncan & Reese, 2012). Therefore, within the context of school-based delinquency prevention, the purpose of this review was to identify the “best” interventions from national EBT databases and to determine the extent to which identified practices were empirically efficacious. The search yielded four school-based delinquency prevention interventions that were given a top rating across four or more of the seven EBT databases searched: the Good Behavior Game, LifeSkills Training, Positive Action, and Promoting Alternative THinking Strategies. Similar to school-based reviews on delinquency risk factors, this review offers both promise as well as important implications for future research.

Each of the four interventions that met inclusion criteria have received substantial support from both research literature and federal and private agencies. For example, the National Research Council (NRC) and Institute of Medicine (IOM) created the *Committee on the Prevention of Mental Disorders and Substance Abuse Among Children, Youth, and Young Adults: Research Advances and Promising Interventions* and received funding from SAMHSA, the National Institute of Mental Health (NIMH), the National Institute on Drug Abuse (NIDA), and the National Institute on Alcohol Abuse and Alcoholism (NIAAA). The primary aim of the committee was to provide a report with the best evidence and future recommendations associated prevention among the nation’s youth. Specifically, the

report calls on the nation – it’s leaders, its mental health research and service provision agencies, its schools, its primary care medical systems, its community-based organizations, its child welfare and criminal justice systems – to make prevention of mental, emotional, and behavioral disorders and the promotion of mental health of young people a very high priority. (O’Connell, Boat, & Warner, 2009, p. xiii)

The PATHS, LST, and GBG programs were all highlighted in the report. For example, the GBG was highlighted for its efficacy in the prevention of conduct problems, the reinforcement of positive behavior, and its long-term developmental implications. LifeSkills Training was also noted for its impact on substance use and its long-term effects.

LifeSkills Training has also earned national recognition from the American Psychological Association, the Centers for Disease Control and Prevention, the American Medical Association, NIDA, the National Cancer Institute, the Center for Substance Abuse Prevention, and OJJDP (Botvin & Griffin, 2004). Similarly, PA has been recognized by organizations such as the U.S. Department of Education, the International Safe Schools and World Health Organization, the National Crime Prevention Council, and OJJDP. Despite impressive support for these interventions, only some of the results were significant and effect sizes were mostly small.

Consistent with the outcomes from previous school-based reviews, results of this review indicated that EBTs for school-based delinquency prevention have mostly small and positive effects on the following risk factors: antisocial behaviors and beliefs, aggression, substance use, hyperactivity, and externalizing behaviors. This is important because each of these risk factors have been found to contribute substantially to delinquency. For example, researchers conducted a longitudinal study and followed a group of 3,792 youth from birth to adolescence (Bor, Najman, O'Callaghan, Williams, & Anstey, 2001). They found that childhood aggression was the strongest predictor of adolescent delinquency. Also consistent with the literature is the limited knowledge on the impact of school-based intervention on protective factors. Results of this review found that three protective factors significantly were impacted at the long-term follow-up points: school engagement, intolerant attitudes toward deviance, and sociability.

Future Implications

There are several important implications from this review that both support what is known about school-based delinquency prevention, but also highlight areas where additional attention and research is needed. First, the results of this review share some consistency with what has been found in previous school-based reviews. For example, reviews associated with school-based delinquency prevention outcomes primarily coalesce around substance use, aggression, and problem behaviors (e.g., Wilson, Gottfredson, & Najaka, 2001; Wilson & Lipsey, 2007). It is likely that the emphasis of research conducted on these outcomes is associated with substantial increases in youth violence and substance use that occurred in the late 1980s and early 1990s (e.g., Butts & Travis, 2002) and largely informed the focus of many prevention interventions being developed and tested at that time. For example, the most of the first tests of LST occurred in the 1980s, a time during which substance use was a substantial problem among youth and school-based prevention was identified as a necessity (Greenwood, 2008).

As aforementioned, what is known about school-based delinquency prevention is largely attributed to intervention research conducted outside of the field of delinquency (Greenwood, 2008). Delinquency prevention researchers, however, began to identify school-based interventions that impacted delinquency risk and protective factors (c.f., Hawkins, Catalano, & Miller, 1992). The results of this review are consistent with previous literature, having highlighted that the most effective school-based delinquency prevention interventions impact only a few risk and even fewer protective factors (Hall et al., 2012). Because intervening with a larger number of factors increases the likelihood that a child will be diverted from the juvenile justice system, it is important to explore prevention interventions that impact a greater number of

risk and protective factors. Although the EBT interventions from this review offer promising results, RCT studies investigating the impact of interventions on additional factors is needed.

Most specifically, researchers have expressed that there is an absence of evidence associated with protective factors, as most EBTs targeting delinquency are deficit-based (Hall et al., 2012; Losel & Farrington, 2012). Consistent with the literature, the results of this review found that school-based delinquency prevention EBTs offer more data on risk factor outcomes than protective factors. Over the past decade, however, others have drawn attention to the important implications of positive psychology and positive youth development programs (e.g., Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004), and viewing school-based intervention through a framework that is solution-focused rather than deficit-based (e.g., Franklin, Moore, & Hopson, 2008). In fact, the *American Journal of Preventive Medicine* published a special issue in 2012 that contained papers written by the Centers for Disease Control and Prevention's expert panel on protective factors (see Hall et al., 2012). With a specific focus on youth violence and delinquency, the panel was created to advance the status of prevention research associated with protective factors. One broad conclusion echoed throughout the papers was the need to inform youth violence and delinquency prevention through additional research on the impact of protective factors (Hall et al., 2012). The results of this review highlight similar conclusions, that among the “best” delinquency prevention interventions, less is offered on protective factors and additional research is necessary.

Another important implication is that all of the EBTs identified in this review were created by researchers, and much of the research was conducted by one of the original program developers. Although SAMHSA’s NREPP gave three of these four interventions the top rating (4.0 out of 4.0; PATHS was rated a 3.6) for readiness for dissemination, many problems still

exist with translating EBTs into real-world practice settings (Duncan & Reese, 2012). Gilbert Botvin (2004), the founder of LST, expressed that there are many issues associated with translating EBTs into real-world practice (e.g., problems with fidelity, sustainability, and cultural adaptation). In fact, an estimated six out of seven schools use interventions that are not based in evidence (Lemstra et al., 2010). Some researchers have drawn attention to the idea of practice-based evidence (PBE) as one potential alternative solution (e.g., O'Connell, Boat, & Warner, 2009). Through this approach, an intervention is developed by practitioners in a real-world setting to meet an identified need. Over time, practitioners work with researchers to examine the effectiveness of the intervention and use the results to make empirically driven decisions to change the program as necessary to meet the identified needs. This PBE approach might be particularly important to consider when problems implementing an EBT may exist, or when an EBT has not been identified to meet a specific need. For example, recent research has highlighted the need for delinquency prevention interventions to be gender-specific (Drukker, Kaplan, Feron, Van Os, & Korebrits, 2010). Very few, however, gender-specific interventions exist (and none of the EBTs in this review are gender-specific). Because pathways to delinquency vary greatly by gender (Moffitt, Caspi, Rutter, & Silva, 2001), those seeking to prevent delinquency in the school setting may benefit from a PBE approach. Another example is research on interventions that are culturally-grounded, as the evidence-based for such interventions is limited. Smith, Rodriguez, and Bernal (2011) reviewed 65 experimental and quasi-experimental studies involving 8,620 participants, and they found that culturally-grounded interventions were more effective ($d = 0.46$) with minority populations than traditional interventions. These examples illustrate limitations that currently exist among EBT interventions and provide potential support for the importance of considering approaches like PBE.

Offering additional support for this approach, for example, the aforementioned committee that was supported by NRC and IOM suggested specific conclusions and recommendations regarding prevention interventions. They highlighted the following conclusion:

Despite multiple dissemination venues, evidence-based interventions have not been implemented on a wide-scale basis. Where interventions have been implemented, they are often not implemented with fidelity, with cultural sensitivity, or in settings that have the capacity to sustain the effort. (O'Connell, Boat, & Warner, 2009, p. 335)

One of the recommendations they offered in response to this conclusion is that collaboration between researchers and schools is necessary to evaluate “preventive interventions that have been developed in the community setting, have demonstrated feasibility of implementation and acceptability in the community, but lack experimental evidence of effectiveness” (p. 336). Thus, it may be important for researchers to consider conducting evaluations on delinquency prevention programs that are gender-specific and/or culturally-grounded and already successfully operating in the school setting.

Another important implication is with regard to research design. Although RCTs are considered to be the “gold standard,” methodological limitations still exist among the included studies. For example, many of the studies with substance use outcomes relied on researcher generated measures despite the fact that several well validated and reliable measures currently exist. In addition, researchers fail to include relevant variables that parallel trends in the literature. For example, there has been an increase in the abuse of prescription medications over the past decade (Johnston, O'Malley, Bachman, & Schulenberg, 2013); however, no studies measured this outcome. Another important methodological limitation is that the many of studies relied on one source of information (either self-report or teacher report). Flaws have been found

in studies that only include one form of data collection (Dunning, Heath, & Suls, 2004), and more than one source is recommended to triangulate and strengthen outcomes (Rubin & Babbie, 2010). Despite strength in the type of research design, future investigators conducting RCTs should pay careful attention to possible methodological limitations.

Also consistent with previous literature is the finding that many interventions are universal (delivered to the whole school or classroom; e.g., Wilson & Lipsey, 2007). In this current review, all interventions that met inclusion criteria were universal. Unfortunately, however, youth who encounter the juvenile justice system have frequently experienced a number of difficulties and many require more intensive interventions (Young, Farrell, Henderson, & Taxman, 2009). It is possible that more intensive interventions may be necessary to prevent juvenile delinquency among this at-risk population. More rigorous research is needed to determine the impact of selective and indicated level interventions with students at-risk of delinquency and to understand the extent to which these interventions compare with universal programs.

A final implication is with regard to students' ages in the studies. Consistent with previous reviews (e.g., Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011), most school-based delinquency prevention studies are conducted with elementary-aged students. Three of the four interventions in this review were conducted with elementary students, and one intervention, LST, was delivered to middle school students. This is an important developmental transition for youth, as most youth begin commit their first offense between the ages of 14-16 (Farrington et al., 2006). Although researchers agree that earlier intervention is important, and children are often more developmentally amenable to change at earlier ages (Hopfer et al., 2010),

attention should be given to investigating the extent to which early high school interventions divert youth from a delinquent trajectory.

Limitations

Limitations exist in this review that warrant caution in the interpretation of the results. First, only published studies were included in this review, thus publication bias is a potential threat to the internal validity of this study. Because studies reporting positive and significant results are more likely to be published, the synthesis of studies included in this review could be overestimating the effects of the included interventions. A second limitation is associated with the EBT databases chosen. Authors chose to draw from databases that were frequently cited in the literature and most relevant to the topic of school-based delinquency prevention. However, other databases exist, and it is possible that additional interventions may have met inclusion criteria. A third potential limitation is that only RCTs were included in this review. It has been noted that conducting RCTs in the school setting is very difficult (Thyer, 2008), and it is possible that strong interventions exist and reasons associated with feasibly have prevented researchers from conducting RCTs. The timeframe during which studies were published is another limitation. It is possible that studies were published prior to 1992 that could impact the synthesis of the results. Despite these limitations, this study is still important because it is the first review to examine school-based delinquency prevention interventions found on national EBT databases.

Conclusions

Researchers have found that every dollar invested in effective delinquency prevention programs will subsequently save seven to ten dollars (Greenwood, 2008). In addition to fiscal impacts, delinquency prevention has also been found to prevent substantial emotional and physical damage to both victims and offenders. Researchers, policy-makers, and clinicians have

responded by asserting that delinquency prevention, particularly in the school setting, is a necessity (Gottfredson, 1997; Welsh & Farrington, 2010). Although an agreed-upon priority, the way in which efficacious interventions are identified and delivered is often debated. This review confirms that the “best” interventions identified on EBT websites offer positive, albeit small, effects on delinquency prevention outcomes. Although this review offers promise to those who are encouraged to use EBT databases, it also highlighted weaknesses that still exist in the “best” evidence. Additional school-based delinquency prevention research should be conducted to investigate the extent to which protective factors, PBE approaches, gender-specific interventions, selected and indicated level approaches, and high school interventions prevent delinquency. Although much has been done, many additional steps are necessary to continue preventing delinquency.

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CHAPTER 5

ARTICLE TWO

An Example of Practice-Based Evidence and the XY-Zone:

A School-Based Prevention Program for At-Risk Youth

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Abstract

The prevention of adolescent problem behaviors (such as delinquency, violence, and school dropout) among at-risk youth has been deemed a national priority in the United States. The most effective way these problem behaviors have been prevented is through school-based intervention. School social workers are necessary professionals to carry out these interventions, but evidence-based treatments (EBTs) are often not implemented in schools. Despite increased attention to the use, and at times mandate, of EBTs in the school setting, problems associated with implementation and sustainability often prevent the dissemination of EBTs. In addition, EBTs have been criticized for the absence of evidence around gender-specific programming for urban at-risk youth from lower socioeconomic neighborhoods, as well as an absence in protective factor research. Some researchers have asserted that a practice-based evidence (PBE) approach may provide an alternative solution. Therefore, this study sought to offer an example of how a PBE approach with a gender-specific program designed for urban at-risk male youth from lower socioeconomic status neighborhoods might address gaps in the literature. Specifically, the study reports on the results of collaboration between practitioners and researchers to identify the extent to which a growing and sustaining program increased protective factors among at-risk urban male youth. Using results from a pretest/posttest design, increases in self-efficacy, self-control, family involvement, and school engagement protective factors were found. Due to small sample size, most differences were not significant. Researchers, however, have highlighted the need to place greater importance on observing effect sizes rather than statistical significance in pilot level intervention research with small sample sizes. Specific treatment groups had significant or approaching significant increases in self-control, self-efficacy, and semester grades. Implications for future research are described.

Introduction

In the United States, it has been deemed a national priority to prevent at-risk students from trajectories that include delinquency, violence, and school dropout (O'Connell, Boat, & Warner, 2009). Although there have been recent declines in each of these identified problem behaviors, national estimates are still high and the associated consequences are substantial. For example, tax-payers contribute an estimated \$5.7 billion a year toward youth confinement (Justice Policy Institute, 2009) for the 1.5 million youth that are arrested annually in the United States (U. S. Census Bureau, 2012). In another example, approximately 500,000 students dropped out of high school in 2011 (U.S. Department of Education, 2013), and it has been estimated that the students who dropped out of school in 2011 will be responsible for a potential \$154 billion dollar loss to the United States economy throughout their lifetime. Although often studied in isolation, researchers have increasingly begun to assert that there is substantial overlap in the risk factors for these adolescent problem behaviors, and adolescents exhibiting many of these behaviors are found to have an increased likelihood of engaging in one or more of the other problem behaviors (Catalano, Hawkins, Berglund, Pollard, & Arthur, 2002; Center for Disease Control and Prevention, 2010). Therefore, collective prevention of adolescent problem behaviors has been deemed a necessity in the United States (O'Connell, Boat, & Warner, 2009).

School social work researchers have asserted that one of the most effective ways to prevent multiple problem behaviors among at-risk youth is in the school setting (Franklin & Hopson, 2004; Proctor, 2002). Specifically, policy-makers and researchers have suggested, and at times mandated, the use of evidence-based treatments (EBTs) in the schools to prevent problem behaviors among at-risk youth. However, school social workers and other school service professionals often do not use an evidence-based practice (EBP) approach (c.f., Kelly et

al., 2010). Difficulty translating EBTs into practice settings is one of the primary reasons that school-based practitioners do not use the EBP approach (e.g., Duncan & Reese, 2012; Franklin & Kelly, 2009). Some of these difficulties are associated with population specific adaptations of EBTs. In response, some researchers have highlighted that a practice-based evidence (PBE) approach is useful (Barkham, Mellor-Clark, Connell, & Cahill, 2006). The purpose of this paper is to build upon previous work (Aguiniga, Streeter, & Hurewitz, 2007) and offer an example of a PBE approach with a school-based social work intervention designed to meet the unique needs of urban, primarily minority, male at-risk adolescents from lower socioeconomic status neighborhoods.

Background

Evidence-based interventions have received criticism because they often have not been tested with or designed to meet the needs of specific populations (e.g., male, urban, minority youth from lower socioeconomic neighborhoods) that are more likely to engage in problem behaviors. For example, male minority youth, particularly in lower socioeconomic urban settings, are disproportionately represented in the juvenile justice system (Armour & Hammond, 2009) and are more likely to commit violent acts (Basch, 2011) and dropout of school (College Board Advocacy & Policy Center, 2010). Further highlighting the link between problem behaviors, young minority males who dropout of school are 6.3 times more likely to become incarcerated (in jails, prisons, and juvenile detention centers) than those who graduate from high school (Center for Labor Market Studies, 2009). In addition, aggression and violent behavior has been found to predict both school dropout (Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006) and delinquency (Bor, Najman, O'Callaghan, Williams, & Anstey, 2001) among males. Researchers have argued that interventions for youth who are at-risk for these problem behaviors

should be gender-specific (e.g., Drukker, Kaplan, Feron, Van Os, & Korebrits, 2010) and shown to be effective with minority urban youth (Smith, Rodriguez, & Bernal, 2011). However, most school-based EBPs are not gender-specific, nor are they designed to meet the specific needs of urban minority youth from lower socioeconomic neighborhoods, and this makes EBPs less applicable and less useable in school-based practice.

Another recently identified problem with school-based EBPs for at-risk youth is that interventions are primarily deficit-based (e.g., Hall et al., 2012). This is not only a problem for school-based mental health services in general, but it is particularly important for school social workers who often prefer to operate from a strengths perspective (Saleebey, 1992). Fortunately, researchers have drawn attention over the past decade to the importance of positive behavioral intervention supports in school settings (Anderson-Ketchmark & Alvarez, 2010; Thompson, 2013) and viewing at-risk students through a framework that is solution-focused rather than deficit-based (e.g., Franklin, Moore, & Hopson, 2008). This approach has become important, because longitudinal studies have revealed that protective factors (such as self-efficacy, self-control, family involvement, and school engagement) prevent problem behaviors among at-risk youth (Caprara et al., 2010; Herrenkohl, Lee, & Hawkins, 2012; Johnson, Giordano, Manning, & Longmore, 2011; Obokata & Muto, 2005). Even though school social workers have long advocated for the importance of building upon client strengths (regarding both the individual and their environment; Saleebey, 1992), little empirical support exists that actually demonstrates that protective factors are important outcomes associated with at-risk youth. Recognizing this limitation, the Center for Disease Control and Prevention commissioned a committee to investigate, define, and address the study of protective factors among at-risk youth (c.f. Hall et al., 2012). The committee concluded that little is known about the impact of prevention

interventions on protective factors, and interventions that impact protective factors should be identified and tested.

In response to the problems with evidence-based practice approaches in school-based services, some researchers have recently suggested that the PBE approach is an effective alternative (e.g., O'Connell, Boat, & Warner, 2009). The PBE approach begins with practitioners and builds upwards by utilizing more rigorous outcome research (Barkham & Mellor-Clark, 2003). More specifically, the PBE approach views research as a central activity for practitioners, where a sense of ownership of the research informs all levels of practice. Through this approach, a school-based intervention is developed in the community setting to meet a specific need. Over time the effectiveness of the intervention is evaluated through practitioner and researcher collaboration. The results are then utilized to undergird empirically driven decisions to change and sustain program components in an effect to meet the identified needs (e.g., Barkham, Mellor-Clark, Connell, & Cahill, 2006). One suggestion in particular is to employ the PBE approach when issues associated with cultural sensitivity and EBT sustainability exist (O'Connell, Boat, & Warner, 2009). Specifically, O'Connell and colleagues (2009) suggested that schools and researchers should collaborate to evaluate “preventive interventions that have been developed in the community setting, have demonstrated feasibility of implementation and acceptability in the community, but lack experimental evidence of effectiveness” (p.336). Communities in Schools’ XY-Zone is an example of an intervention that was developed in the practice setting to increase protective factors among at-risk, male, urban, minority youth from lower socioeconomic neighborhoods.

Communities in Schools (CIS) was developed over 35 years ago, and is an organization that serves over 1.26 million students in approximately 2,700 schools in the United States

(Communities in Schools, 2013). Communities in Schools is one of the larger employers of school social workers in Texas. In Texas, CIS serves students on 652 campuses, 61,972 of which receive selective intervention (also known as Tier 2 or group level intervention; Division of Federal and State Education Policy, 2013). Communities in Schools was recently identified as one of three best practices for dropout prevention interventions being implemented in Texas (National Dropout Prevention Center, 2008). Despite promising results associated with the impact of CIS, social workers in Austin, TX recognized a need that their traditional CIS services failed to meet. Specifically, they recognized that many of the young men on their campuses were dropping out of school and were becoming engaged in delinquent and gang-related activity. At the time the intervention was developed, there were no gender-specific EBPs that met the needs of the at-risk male population. Out of this need, the XY-Zone intervention was developed.

On January 26, 2010, the College Board Advocacy and Policy Center released a report entitled *The Educational Crisis Facing Young Men of Color* at a Capitol Hill briefing in Washington, D.C. In the report, the XY-Zone was one of twelve highlighted model programs aimed to intervene in the lives of those most at-risk for future problems: adolescent males of color. Approximately 14 years after the program was initially developed, the XY-Zone is now offered in schools in Texas and Louisiana. This male-only program has shown the ability to be both implemented and sustained in urban high schools with at-risk primarily minority youth from lower socioeconomic settings. Although the XY-Zone has been highlighted as one of 12 model programs and is being implemented in two states, limitations in research design have prevented important questions from being asked. To continue to “scale up” and determine the effectiveness of the XY-Zone, the social work administrators at the agency partnered with the school of social work at the University of Texas at Austin to conduct further evaluation. The following presents

an example of the next step in the PBE approach with the XY-Zone. The specific research question that drove this particular study was this: 1) To what extent does involvement in the XY-Zone increase protective factors among youth in various stages of the program?

Methods

Participants and Procedures

Through a purposive selection process, students were recruited to participate in this pretest-posttest design study. A sample of youth ages 13-20 who were eligible to receive XY-Zone services in two urban high schools in lower socioeconomic neighborhoods in Austin, Texas were recruited for participation. These two schools were chosen because the XY-Zone had been substantially developed in both schools, with a fairly even distribution of students in each of the four levels of the program (5 Rs, Leadership, Ambassador, and Blue Shirt). Students eligible to receive XY-Zone services must have displayed risk factors in one of the following risk domains: academic risks (failed two or more core classes, failed state examination test, lack of class participation, and homework incompleteness), attendance risks (excessive absences and tardies), behavioral risks (gang involvement, substance use, poor classroom conduct, poor social skills, poor self-esteem, violence, delinquent conduct, and family or emotional crisis), and social service issues (difficulty with the following: college readiness, life skills, health, career/employment, housing, daycare, and grief or loss).

Sixty-two XY-Zone eligible students agreed to participate in the program evaluation, and a total of 55 participants completed surveys at both time points. Students were lost to follow-up because they moved ($n = 3$), were sent to an alternative school for behavioral problems ($n = 2$), enrolled in an accelerated program to graduate early ($n = 1$), or joined the military ($n = 1$). Specifically, there were 12 participants in the 5 Rs group, 22 in the leadership group, 9 in the

ambassador group, and 12 students who were blue shirt members. The final sample ($N = 55$) was primarily of Hispanic (46%) or Black (41%) ethnicity, and although students were approximately 16-years-old ($M = 15.95$, $SD = 0.95$), Table 5.1 shows that age varied depending upon the group to which a student belonged. About half (47%) of the students had risk factors in three or more of the four risk domains.

Table 5.1

Descriptive Characteristics

	5Rs <i>N (%)</i>	Leadership <i>N (%)</i>	Ambassador <i>N (%)</i>	Blue Shirt <i>N (%)</i>
<i>Black</i>	5 (41.7)	12 (54.5)	2 (22.2)	3 (25.0)
<i>Hispanic</i>	6 (50.0)	7 (31.8)	5 (55.6)	8 (66.7)
<i>White</i>	0 (0.0)	1 (4.5)	0 (0.0)	0 (0.0)
<i>Other</i>	1 (8.3)	2 (9.0)	2 (22.2)	1 (8.3)
<i>Academic Risk</i>	8 (66.7)	13 (59.1)	6 (66.7)	4 (33.3)
<i>Attendance Risk</i>	3 (25.0)	7 (38.1)	3 (33.3)	0 (0.0)
<i>Behavioral Risk</i>	11 (91.7)	18 (81.8)	3 (33.3)	10 (83.3)
<i>Social Service Risk</i>	12 (100.0)	16 (72.7)	6 (66.7)	12 (100.0)
<i>Risk</i>				
<i>One Risk</i>	0 (0)	3 (13.6)	4 (44.4)	2 (16.7)
<i>Two Risks</i>	4 (33.3)	8 (36.4)	2 (22.2)	6 (50.0)
<i>Three Risks</i>	6 (50.0)	9 (40.9)	2 (22.2)	4 (33.3)
<i>Four Risks</i>	2 (16.7)	2 (9.1)	1 (11.1)	0 (0.0)
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
<i>Age</i>	15.00 (0.95)	15.77 (0.69)	16.67 (0.71)	16.67 (0.69)

Youth in the 5 Rs group were recruited through the agency's XY-Zone recruitment process. These youth first met with the XY-Zone coordinator to determine eligibility to enter the program. Once the coordinator assessed a student as eligible for the XY-Zone, the youth was asked to participate in the study. To recruit students from the other three groups, the coordinator asked all current XY-Zone members (Leadership, Ambassador, & Blue Shirt) if they were interested in participating as well. Each interested individual was provided with a consent form and explanation of the study. The coordinators provided the youth with both the regular agency

consent form as well as this study's consent form to be taken home and signed by their parent/guardian. Participants were informed that they would be asked to complete a questionnaire at two time points (September 2011 and January 2012) that would take approximately 30-45 minutes to complete, and they would be compensated with a Best Buy gift card (\$10 at time one and \$15 at time two). It is important to note that students would likely have received only a portion of intervention between these two time points, as the groups would often be completed at the end of the school year.

Interviews were conducted in a private office located in the respective school that each student attended. Two trained social work graduate students from the University of Texas at Austin conducted the interviews with all participants. To reduce social desirability bias when administering the surveys, both the interviewer and the student each had their own copy of the survey, and students were prompted to circle responses on their survey as the interviewer read each item aloud. This study was approved by The University of Texas at Austin's Institutional Review Board and the Austin Independent School District's Office of Accountability. In addition, a Certificate of Confidentiality from the National Institutes of Health was obtained for this study to protect students' responses regarding sensitive data.

The XY-Zone

Driven by several theoretical perspectives pertinent to social work (strength-based perspective, risk and resiliency model, and developmental theories), the XY-Zone was developed in 1999 to intervene during a key developmental period for young men. The program developers turned to research on risk and protective factors (e.g., Hawkins, Catalano, & Miller, 1992) and developmental assets (e.g., Leffert et al., 1998) to inform development of this intervention. Specifically, the intervention coalesces around focusing on strengths and enhancing protective

factors to provide a buffer against problem behaviors among at-risk youth. Focus groups were also conducted with the first participants in the XY-Zone (primarily minority, urban, male youth from lower socioeconomic neighborhoods) to inform the development of the five guiding principles known as the five Rs: respect, responsibility, relationship, role modeling, and reaching out (for a description of these constructs see Aguiniga, et al., 2007). Through these principles, the participants explore healthy psychosocial behaviors and thoughts in a structured 12-session group setting. Some specific goals associated with the 5 Rs are to practice critical thinking skills, build emotional intelligence through creative interaction with peers, define and develop a healthy understanding of self-respect (both physically and emotionally), recognize and appreciate individual differences and others' basic right to respect, and increase awareness for personal responsibility for the self. Since the previous *Children & Schools* publication (Aguiniga, Streeter, & Hurewitz, 2007), the program has evolved from one step (or phase) of intervention to three. The new three-phase manual was completed in 2008.

Once a participant has completed the 5 Rs stage, they become eligible to enter into the next step: leadership. The leadership step builds upon the guiding principles and students are encouraged to explore and practice leadership with each other, students in the school, their families, and in the community. Similar to the 5 Rs step, this phase is also delivered through 12 one-hour group sessions. Some goals associated with this phase are to explore and define positive leadership, practice positive leadership through making healthy decisions and cooperation with others, explore and develop personal integrity and awareness, enhance the development of moral reasoning, and develop interpersonal competences such as validation and communication. During the leadership step, participants also organize and carry out a service learning project in their community. Once a participant has completed the second step, he

becomes eligible for the third and final step of treatment: ambassador. Considered to be more of a contemplative phase, those in the ambassador step become a mentor to those in previous steps (as well as to those not involved in the program) and are “expected to explore the principles of leadership and the five R’s, and determine their personal relevance to their lives as young men” (Allen, 2008, p. i). Once a young man completes all three steps, he is eligible to become a “Blue Shirt” member and receives a blue XY-Zone shirt. He is then considered an XY-Zone member for life. Throughout participation in the program, XY-Zone participants are also offered various experiences and services such as: career development, mentorship, community services projects, peer education, and health education around men’s health and adolescent pregnancy (RH2 Consulting, 2009).

XY-Zone services are administered by an XY-Zone coordinator at each school. Each coordinator must have earned a bachelor’s degree and has participated in an extensive training process. Specifically, each coordinator attends two days of training associated with the XY-Zone program. In addition, the coordinators draft a professional development plan with the XY-Zone director that includes professional goals and additional trainings. The coordinators are required to attend two trainings annually that focus on effective approaches with at-risk youth. Lastly, each coordinator must attend 16 hours annually of staff development training through CIS or an outside agency.

The XY-Zone coordinator reports to and collaborates with both the XY-Zone program director and a CIS program manager in their respective school. The CIS program manager typically holds a masters degree in social work or a related field and is available to the XY-Zone coordinator to provide supervision and support as needed. The XY-Coordinator also meets with the CIS program manager at their school for weekly supervision.

Although the XY-Zone intervention is manualized, feedback from focus groups has influenced some important changes. Coordinators are encouraged to cater the sessions to the specific group with whom they are working. For example, some 5 Rs group sessions focus on respect and cultural differences. If the XY-Zone coordinator feels that several issues exist that are related to respecting others from various cultural groups, the coordinator may spend more sessions on that topic. For this reason, more than 12 sessions are often provided. The XY-Zone program director believes this individualization of group sessions to be one of the strengths of the program.

Measures

Protective Factors. The Behavioral and Emotional Rating Scale- II Youth Report (BERS-II) was used to measure protective factors (Epstein et al., 2004). This 57-item Likert-style scale has been designed for youth ages 11-18 and assesses several dimensions. Developed by a social worker, this is a practical scale for school-based social workers, because it is easy to administer, measures student strengths, and is able to potentially show increases in protective factors. The interpersonal strength (measures the child's ability to control his or her emotions or behaviors in social situations) subscale was used to measure self-control. The intrapersonal strength (measures in a broad sense a child's outlook on his or her competence and accomplishments) subscale was used to measure self-efficacy. Family involvement was measured with the family involvement subscale (measures child's participation in and relationship with his or her family). Lastly, school engagement was measured using two data sources. The first source was the school functioning subscale from the BERS-II youth report was used (specifically measuring a child's level of engagement in the classroom). The second form of data collection used to measure school engagement was semester grades. The BERS-II youth

report has strong internal consistency ($\alpha = 0.81 - 0.91$) and good test-retest reliability ($r = 0.84 - 0.91$). Among the sample for this study, strong internal consistency was also found for the subscales that were used ($\alpha = 0.83 - 0.90$).

XY-Zone scale. The program directors at CIS developed the XY-Zone Scale, a self-report measure to assess the extent to which the program increased the overlapping goals associated with the 5 Rs. This 23-item scale is comprised of several statements associated with the focus of the XY-Zone, such as “I see myself as a positive leader,” “I would like to know more people from different cultural groups,” “I am serving others in my community,” I have the skills to be in a healthy relationship,” and “I take responsibility for what I do.” Participants choose from one of four options to indicate how true each statement is for them: 1) not true at all, 2) sort of true, 3) true, and 4) very true. This scale was found to have strong internal consistency ($\alpha = .92$) among students in this study.

Intervention Fidelity

Measuring treatment fidelity of interventions conducted in a real-world setting is been deemed as a difficult task (e.g., Carroll et al., 2002), as was the case in this study. Because the XY-Zone creators credit the flexibility given to the XY-Zone coordinators as a strength of the program (allowing coordinators to alter the treatment protocol and duration to meet the needs of the individual groups), a simple fidelity instrument was created for this study. Coordinators were given a checklist with the manualized treatment objectives that accompanied each of the 12 sessions for each group step. Checklists revealed that XY-Zone coordinators addressed an average of 96% of the manualized treatment objectives. In addition, students in the XY-Zone attended an average of 64% of the sessions made available to them ($M = 64.38$, $SD = 26.00$) and

participated in approximately 11 hours of community service projects over the year ($M = 11.11$, $SD = 12.50$).

Data Analysis

Program directors and school social workers partnered with researchers using data from the BERS-II subscales and the XY-Zone scale to conduct a program evaluation of the XY-Zone. Repeated measures t-tests were conducted to examine differences in continuous dependent variables between time one and time two. These tests were run separately for each of the four groups. Independence and normality assumptions were satisfied for continuous variables. Cohen's d effect sizes were also calculated to reflect the strength of the reported effects.

Results

Program Outcomes

5 Rs Group. Participants in the 5 Rs group were primarily Freshman ($n = 5$, 41.7%) and Sophomore ($n = 6$, 50.0%) students, and most had risk factors in three or more risk domains ($n = 8$, 66.7%). Analysis revealed that students in the 5 Rs group increased semester grades, as well as scores in family involvement, school engagement, self-control, self-efficacy, and XY-Zone measures (Figure 5.1, and Figure 5.2). The difference in self-control was significant, $t(11) = 3.00$, $p = .01$, and had a medium effect size ($d = 0.61$). In addition, the difference in XY-Zone scores, $t(11) = 2.08$, $p = .06$, was nearing significance and had a small to moderate effect size ($d = .41$).

Figure 5.2

Difference in Semester Grades between Time One and Time Two

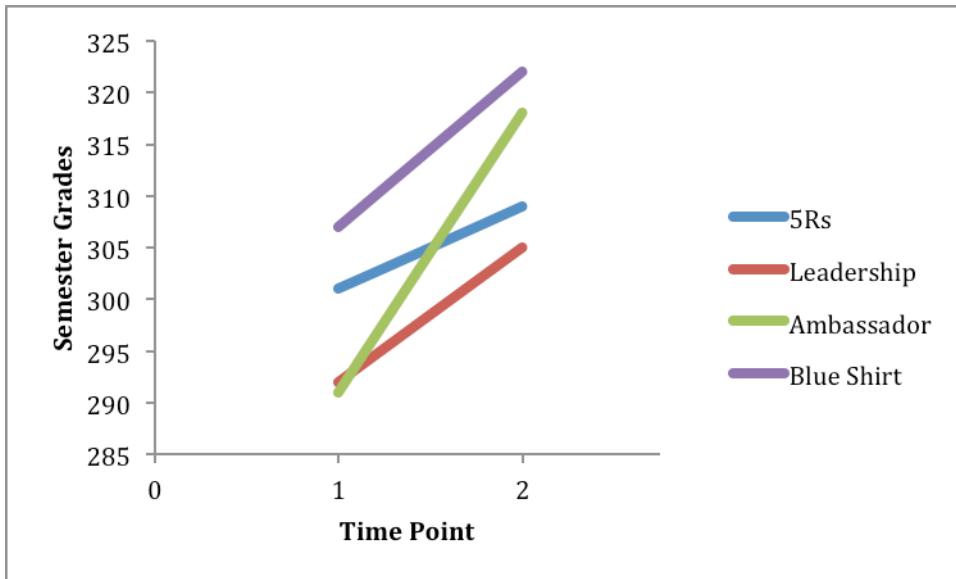
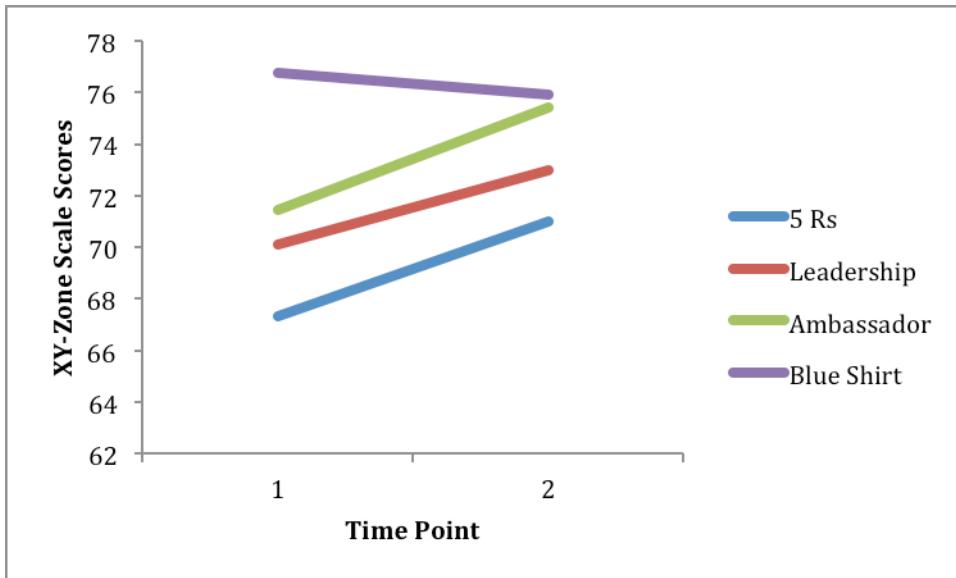


Figure 5.2

Difference in XY-Zone Scale Scores between Time One and Time Two



Leadership Group. Participants in the leadership group were mostly Sophomores ($n = 12$, 54.5%) or Juniors ($n = 7$, 31.8%). Similar to those in the 5 Rs group, half of the students in

the leadership group had risks in three or more of the four risk domains ($n = 11$, 50.0%). Students in the leadership group reported increases in semester grades, family involvement, school engagement, self-control, self-efficacy, and XY-Zone constructs. Increases in semester grades, $t(18) = 1.93$, $p = .07$, self-efficacy, $t(20) = 1.76$, $p = .09$, and XY-Zone construct scores, $t(19) = 1.57$, $p = .13$, approached statistical significance with small effect sizes.

Ambassador. Ambassador group participants were either Juniors ($n = 4$, 44.4%) or Seniors ($n = 5$, 55.6%), and most had risk factors in two or fewer ($n = 6$, 66.7%) of the risk factor domains. Analysis revealed that those in the ambassador step reported increases in semester grades, family involvement, school engagement, self-efficacy, and XY-Zone construct scores. Increases in semester grades were significant, $t(4) = 2.44$, $p = .02$, and had a very large effect size ($d = 1.37$). In addition, the increase in XY-Zone scores was also significant among Ambassador members, $t(8) = 2.44$, $p = .04$. This increase had a moderate effect ($d = 0.41$).

Blue Shirt. Participants who had graduated from the XY-Zone program and become blue shirt members were either Juniors ($n = 5$, 41.7%) or Seniors ($n = 7$, 58.3%). Similar to those in the Ambassador group, most blue shirt members had risks in two or fewer risk domains ($n = 8$, 66.7%). Semester grade increases were significant, $t(7) = 2.44$, $p = .05$, and had a medium effect size ($d = 0.61$).

Discussion

The purpose of this study was to offer an example of a PBE approach by describing a program evaluation of a school-based program developed in the practice setting by social workers to meet the identified needs of at-risk male, minority youths. Specifically, after implementation and sustainability of the XY-Zone had been demonstrated, the developers of the program recognized the importance of collaborating with researchers to investigate effectiveness.

In addition to demonstrating successful implementation, sustainability, and growth, the XY-Zone also brings strength because few interventions have been found to be gender-specific and to increase key protective factors among urban high school minority youth from lower socioeconomic neighborhoods who are at-risk of problematic trajectories, including delinquency, violence, and school dropout. Below is a brief description of the evaluation findings, important next steps, and implications for PBE approaches.

The results of this program evaluation suggest that participants in all phases of the XY-Zone were found to have increases between their first and second semester grades, and these differences were significant with medium to very large effect sizes for those in the ambassador and blue shirt groups. It is possible that students in the first step of the program are unable to see grades as a priority due to several other psychosocial stressors in their lives. For example, all students in the 5 Rs group received free or reduced lunch, meaning that they came from lower socio-economic homes. Perhaps once students had learned the skills taught in the other groups (leadership and ambassador), and the ability to navigate difficult internal and external problems, they might be able to invest more into school engagement and raising grades. This finding is supported by research and is also consistent with the experience of social workers conducting the groups. Researchers have found, for example, that when students who are able to disengage from unhealthy psychosocial stressors, they are able to make and invest in healthier choices (Greco & Hayes, 2008). Additional research, with larger samples and longitudinal data is needed to determine the extent to which the XY-Zone impacts grades and school engagement.

All three groups receiving treatment (5 Rs, Leadership, & Ambassador) also reported increases in family involvement, school engagement, self-efficacy, and XY-Zone self-report rating scale scores. None of these increases were significant; however, the increase in self-

efficacy among the leadership group was approaching significance. It is possible that practicing appropriate leadership and modeling healthy behaviors (objectives taught in the leadership group) improved the way in which students viewed themselves. In addition, those in the 5 Rs and leadership groups reported increases in self-control, and the effect size among the 5 Rs students was significant. Because low self-control has been linked to many problem behaviors (e.g. Pratt & Cullen, 2000), it is important that the XY-Zone may increase self-control among at-risk students during this vulnerable developmental period.

Although few of the increases in outcomes were found to be significant, over half of the increases had small to medium treatment effect sizes. This is a particularly important concept for school-based practitioners to consider, as smaller studies like this require focus on the effect size. It is possible that significance was not found because of small sample size (Cohen, 1988). For example, according to Cohen (1988), researchers conducting *t*-tests must have 310 participants in their sample to have an 80% chance of detecting statistically significant small treatment effects ($d = 0.20$). Fewer participants are needed to detect a significant medium effect ($n = 50, d = 0.50$). When school-based social workers have developed an intervention, it is unlikely that the early stages of program development and implementation will yield participation of over 300 students. It is also difficult to find medium to large effects among at-risk male urban youth (e.g., Clampet-Ludquist, Edin, Kling, & Duncan, 2011; Farrell, Meyer, & White, 2010). As a result, during the early stages of intervention development with smaller sample sizes, researchers often draw from effect sizes to offer initial implications of treatment effectiveness (e.g., D'Amico, Miles, Stern, Meredith, 2008). Regarding the implications of the XY-Zone, the positive direction of outcome results, accompanied with corresponding effect sizes, suggests that the XY-Zone may be increases important protective factors among at-risk youth. Although the null hypothesis cannot

be rejected (meaning we can not empirically state that this relationship exists), these initial and exploratory data offer potential support for the XY-Zone. As the program continues to grow and “scale up” its evidence, important next steps will include larger sample sizes and more sophisticated research designs (such as the use of a control group and longitudinal data) to determine the effectiveness of the XY-Zone.

Practice-Based Evidence Implications

Although the PBE approach has been defined in various ways (e.g., Kratochwill et al., 2012; Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996), this evaluation offers an example of a compelling PBE approach, where PBE is viewed as a way in which the EBP process can be enhanced (e.g., Barkham & Baker, 2003; Barkham & Mellor-Clark, 2003; Margison et al., 2000). Through this approach, PBE is evidence that begins in the practice setting and progresses through the hierarchy of evidence, similar to the progression that EBTs demonstrate. Ultimately, this PBE approach would find a community-based intervention to be effective through collaborating with researchers to conduct rigorous research trials, and the intervention can be considered an EBT. The primary difference is that the intervention is developed by practitioners in the practice setting and has an increased chance for “buy-in” and sustainability. Another strength of this approach is associated with financial support. Social workers frequently encounter the loss of programs due to funding issues, and school-based practitioners are being increasingly called upon to empirically validate their positions and impact with at-risk youth (Allen-Meares, 2013; Franklin & Kelly, 2009). Although the PBE approach is not without its own limitations, this manuscript offers social work practitioners an important alternative to effectively meet the unique needs of the populations they serve in circumstances where implementing an EBT may

not be feasible or appropriately able address identified issues associated with population-specific intervention.

Limitations

There are several limitations that warrant attention when interpreting these results. First, the study was conducted with adolescents from two high schools in Austin, Texas, so results are not generalizable to other populations. Secondly, because there was no comparison group, it is possible that the results were vulnerable to several threats of internal validity, and causality cannot be confirmed. Thirdly, the participants in each of the four groups first joined the XY-Zone at four different times. So the differences between groups could be associated with something different than the XY-Zone, such as maturation or history. Lastly, this study did not have adequate sample size to achieve power, and the results of this study are made vulnerable to a type II error. Despite these limitations, this study is important because this is the first time changes associated with specific groups in the XY-Zone have been explored. Additional longitudinal research with a comparison group is needed to further determine the impact of the XY-Zone on each of the four program groups.

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CHAPTER 6

ARTICLE THREE

A Pilot School-Based Randomized Controlled Trial to Prevent Delinquency: Testing the Effectiveness of the XY-Zone on Protective Factors

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Abstract

The prevention of delinquency has been deemed critical, as severe consequences exist for victims, offenders, and the public in general. Researchers have found that the most efficacious way to prevent delinquency is through school-based intervention to impact risk and protective factors. Most research, however, on school-based delinquency prevention has been primarily deficit-based and focused on addressing risk factors. Much less is known about the impact of school-based interventions on protective factors among youth at-risk for delinquency. Therefore, this randomized controlled pilot study sought to investigate the extent to which participation in a school-based intervention, the XY-Zone, increased protective factors (self-control, self-efficacy, family involvement, and school engagement) and career development, a factor related to protective factors. Results revealed a significant treatment effect with career development. Small to medium effects nearing significance were also found for self-control, self-efficacy, and family involvement. Implications for future research are described.

Introduction

An estimated 1.5 million adolescents have been arrested in the United States for delinquent behaviors (U. S. Census Bureau, 2012). Although crime rates have steadily declined over the past decade, the impact of current arrest rates remain substantial when one considers the consequences associated with one offense. For example, the emotional and fiscal damages sustained by the victims of juvenile offenders are estimated to cost approximately \$8,000 for one attempted robbery, \$18,000 for drunk driving, \$87,000 for non-fatal sexual or physical assault, and \$3,000,000 for a fatal assault (Miller, Cohen, & Wiersema, 1996). In addition, those who have experienced victimization are more likely to become offenders themselves (Jain & Cohen, 2013). There are also far-reaching consequences for those who become involved with the juvenile justice system. Youth who are arrested for delinquent acts are more likely to become addicted to substances, drop out of school, parent children at an early age, and become incarcerated as an adult (Greenwood, 2008). The result of these types of consequences often extends beyond impacting victims and offenders. For example, federal, state, and local governments spend approximately \$5.7 billion a year on juvenile corrections (Kamrany & Boyd, 2012). In response, researchers and policy-makers have deemed delinquency prevention a necessity (Welsh & Farrington, 2010).

Theoretical Model for Delinquency Prevention

Richard Catalano and David Hawkins (1996) developed a prominent model for delinquency prevention known as the Social Development Model. This theoretical approach coalesces around school-based developmental transitions for youth and incorporates social learning theory, social control theory, and differential association

theory. They espouse that key school-based transitions (e.g., preschool to elementary, elementary to middle school, and middle school to high school) during development impact behavior. A primary assumption of this model is that prevention interventions should be designed to target particular risk and protective factors that are more malleable during these various developmental periods (Catalano & Hawkins, 1996). It is primarily through this lens that school-based delinquency prevention for this study is viewed.

Despite substantial advancement in the knowledge base regarding the efficacy of school-based delinquency prevention interventions on risk factors, very little is known about interventions that enhance protective factors among youth who are at-risk for delinquency. The *American Journal of Preventive Medicine* published a special issue in 2012 that contained papers written by the Centers for Disease Control and Prevention's expert panel on protective factors (see Hall et al., 2012). Focusing specifically on violence and delinquency prevention, the panel concluded that more research is needed to determine the extent to which prevention interventions impact protective factors. Therefore, the purpose of this paper is to examine the effectiveness of a delinquency prevention intervention on protective factors among youth at-risk for juvenile delinquency.

Background

School-Based Delinquency Prevention

Over the past two decades, a large body of research has emerged asserting that one of the most effective ways in which delinquency is prevented is in the school setting (Botvin & Griffin, 2005; Conroy, Sutherland, Snyder, & Marsh, 2008; Greenwood, 2008; Kazak et al., 2010; Welsh & Farrington, 2007). Specifically, Gottfredson (1997)

highlighted several strengths that suggested delinquency risk and protective factors can be changed through school-based intervention. She espoused that schools provide the most regular access to crime-prone youth during important developmental years. They are often equipped with professionals who share a desire to see youth succeed, and the community is generally more agreeable to schools' efforts to socialize their children (Gottfredson, 1997).

The majority of school-based delinquency prevention research is associated with risk factors. Specifically, delinquency prevention researchers frequently cite school-based meta-analytic reviews on interventions that have reduced aggressive behavior (e.g., Hahn, Crosby, Moscicki, Stone, & Dahberg, 2007; Wilson & Lipsey, 2007), substance use (e.g., Lemstra et al., 2010; Hopfer et al., 2010), and problem behaviors (e.g., Wilson, Gottfredson, & Najaka, 2001). In addition, longitudinal epidemiology studies have identified several important risk factors that precede involvement with the juvenile justice system: familial poverty, truancy, academic failure, and familial conflict (Farrington et al., 2006; Hall, Simon, Lee, & Mercy, 2012). Lastly, literature also highlights that male minority youth are disproportionately more likely to enter into the juvenile justice system (Kempf-Leonard, 2007). Despite great advancements on the efficacy of school-based delinquency prevention and risk factors, researchers have recently drawn attention to the absence of evidence associated with protective factors (Hall et al., 2012; Losel & Farrington, 2012). Some of the available evidence is described below.

Delinquency Protective Factors

Self-Control. Self-control has been theoretically and empirically associated with delinquency for decades (Pratt & Cullen, 2000; Engel, 2012). Self-control is most

frequently defined as the ability to regulate emotions, thoughts, and behaviors, as well as exert a conscious effort to restrain or override responses (Bandura, 1989; Baumeister, Vohs, & Tice, 2007; Metcalfe & Mischel, 1999; Vohs & Baumeister, 2004). Although low self-control has repeatedly been found as a significant predictor of and risk factor for delinquency (Perrone, Sullivan, Pratt, & Margaryan, 2004; Pratt & Cullen, 2000), researchers have recently discovered that self-control, conversely, protects against delinquency. For example, Obokata and Muto (2005) conducted a study with 1,623 junior high school students. They found that greater levels of self-control served as a protective factor against delinquency. In addition, the results of 102 studies were recently reported in a meta-analysis regarding the impact of self-control on a variety of behaviors (Ridder, Lensvelt-Mulders, Finkenhauser, Stok, & Baumeister, 2011). Authors found that higher levels of self-control were related to better school and work performance. They also found that being male significantly increased the relationship between low self-control and deviant behavior. Therefore, self-control may be a particularly important protective factor to target in delinquency prevention with male adolescents. Although considered an important outcome to investigate, there are very few reports of school-based interventions studies that have impacted self-control. One example was a study conducted by Larkin & Thyer (1999), which investigated the efficacy of a cognitive-behavioral therapy (CBT) group intervention with 52 primarily White behaviorally disruptive elementary students. Results of their randomized controlled trial (RCT) revealed statistically significant improvements in self-control.

Self-Efficacy. Self-efficacy has also been shown to serve as a protective factor against antisocial careers and delinquency (Bandura, Barbaranelli, Caprara, Pastorelli, &

Regalia, 2001; Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003; Caprara, Regalia, & Bandura, 2002). Different from self-control, self-efficacy is defined as belief in one's capabilities (Bandura, 2006). Put in another way, it is a "judgment of capability" (Bandura, 2006, p. 309). Higher of self-efficacy has been found to increase self-control, but the two constructs are conceptually different (Pajares, 1996). Additionally, researchers in the delinquency literature conceptualize and measure self-efficacy differently. Self-efficacy has been argued to be both a situational factor that is related to domain specific behaviors and contexts (e.g., self-regulator behaviors, academics, sports) and a more generalized construct (e.g., generalized self-efficacy) that may influence behavior of individuals across different settings, events, and behaviors (Scherbaum, Cohen-Charash, & Kern, 2006). Generalized self-efficacy is usually measured as perceived self-efficacy, and it is a global construct that is defined as an individual's belief in his or her abilities to perform well in a variety of different situations. Recent literature suggests that generalized self-efficacy may mediate or influence situational self-efficacy (Scholz et al., 2002; Sherbaum et al., 2006).

Self-efficacy is an important protective factor for adolescents at risk of delinquency. Caprara and colleagues (2010) recently reported on the longitudinal results of a study with 452 adolescents. Participants were interviewed four times over the course of 7 years, and analysis revealed that self-efficacy served as a protective factor against engagement in delinquency among boys. Different researchers have also linked self-efficacy with other delinquency protective factors. Specifically, it was found that adolescents with higher levels of self-efficacy have higher peer and social acceptance (Bradley & Newhouse, 1975; Downs, 1988), as well as pro-social behavior (Miller &

Eisenberg, 1988). Although evidence regarding school-based interventions on self-efficacy exists (e.g., Kvarme et al., 2010), little is known about the influence of such interventions on students at-risk of delinquency.

Family Involvement. Another prominent protective factor is family involvement. In the context of delinquency prevention, family involvement is considered to be conventional activities in which the child participates with their family members (e.g., playing games, going to church) and the extent to which an adolescent feels conventionally bonded with their family (Hirschi, 1969). Specifically, factors associated with familial involvement and bonding have been found to protect against delinquency, as well as other at-risk behaviors (O'Connell, Boat, & Warner, 2009). For example, Youngstrom, Weist, and Albus (2003) conducted a study with 320 inner-city youth, most of whom had been exposed to community-level risk factors over the previous six months. Results of this cross-sectional study revealed that family involvement moderated the relationship between cumulative risk factors and externalizing behaviors (such as delinquency and aggression). In another evaluation, Johnson and colleagues (2011) reported on the results of a longitudinal study with 1,007 participants. They found that familial support and involvement protected against offending into adulthood (Johnson, Giordano, Manning, & Longmore, 2011).

Multimodal school-based interventions have sought to increase family involvement among at-risk youth. One example is the Strengthening Families program, and researchers have found this program increases family involvement among with at-risk youth (Roach, Kim, O'Connor, & Laurion, 2009). Unfortunately, researchers have found it difficult to prevent high rates of attrition among at-risk students who come from

families that lack resources (Kapungu et al., 2012). This is of particular concern with minority populations (e.g., Martinez, McClure, Eddy, Ruth, & Hyers, 2011). Research is limited on the extent to which school-based interventions may teach students skills to strengthen family involvement without having to include the family in the intervention.

School Involvement. The school domain is also important to consider when protecting students from delinquency. One particular protective factor that has been found significant in longitudinal studies is school engagement. School engagement has been defined in various ways, but in the context of delinquency prevention it is the extent to which an adolescent engages in conventional school activities (including classroom activities and assignments; Hirschi, 1969). Research has supported the relationship between delinquency prevention and school engagement. For example, Herrenkohl, Lee, & Hawkins (2012) reported on the results of a longitudinal study with 808 adolescents who participated in the Seattle Social Developmental Project (SSDP). The SSDP was designed to examine delinquency- and violence-related risk and protective factors. They found that among participants, those who had higher levels of school engagement were significantly less likely to become violent or delinquent. School engagement is important; not only are disengaged students more likely to enter into the juvenile justice system, but they are also more likely to experience academic failure, high school dropout, and several other negative psychosocial outcomes (Caraway et al., 2003; Connell, Halpern-Felsher, Clifford, Crichlow, & Usinger, 1995; & Finn, 1989). This is of even greater concern among minorities. Compared to White youth, Black students are one and a half times more likely to drop out of high school, and Hispanic students are almost four times more likely than White adolescents to drop out (Kaufman, Alt, & Chapman, 2004). Some

school-based intervention studies have been conducted that aim to increase school engagement among at-risk minority youth. Holt, Bry, and Johnson (2008) conducted a pilot randomized controlled trial with 40 mostly Hispanic (47%) and Black (38%) at-risk students to investigate the extent to which a mentoring intervention impacted school engagement. Among those who received treatment with fidelity, participants had higher levels of school engagement. Additional research is needed to determine how school-based interventions can impact this important protective factor among at-risk youth.

Career Development

Lastly, investment in adolescents' career development has become an important topic in recent decades, particularly in the school setting. Although not specifically considered to be a protective factor, the development of career strengths has been found to increase other protective factors. Career development initiatives in the school setting have been found to foster positive student attitudes toward school, increase school engagement (Lapan, 2004), and increase academic achievement (Evans & Burck, 1992). For example, Evans and Burck (1992) conducted a meta-analysis of 67 studies and found career development to have a positive effect on school achievement. Researchers have since conducted additional studies and reported similar results (e.g., Castellano, Stringfield, & Stone, 2003; Olson, 1997; Visher, Bhandari, & Medrich, 2004). In addition, because urban minority youth from lower socioeconomic settings are at the greatest risk for delinquency and dropping out of school (U.S. Department of Education, 2009), researchers have begun to study the connection between school engagement and career development among urban youth. For example, Perry (2008) found that higher levels of career development predicted higher levels of school engagement among urban

minority youth. It is important to examine the extent to which interventions influence factors, such as career development, that increase delinquency protective factors.

Unfortunately, little attention has been given to this topic in school-based delinquency prevention literature.

The Need for Gender-Specific and Selective Programs

In addition to the limited evidence regarding protective factors and school-based delinquency prevention, additional limitations have been identified. For example, researchers have found that there are gender-specific pathways that lead to delinquency (Moffitt, Caspi, Rutter, & Silva, 2001), and several of the identified risk factors only apply to male youth (Shader, 2004). In response, others have asserted that delinquency interventions should be gender-specific (Foley, 2008). Unfortunately, the delinquency prevention literature is largely limited to interventions that include both males and females. Another identified limitation with the current evidence-base is that almost all evidence-based treatment (EBTs) have been developed by researchers, and there is substantial difficulty associated with translating efficacious interventions into real-world practice settings with interventions developed by practitioners (Duncan & Reese, 2012). Duncan and Reese (2012) suggested that investment in practice-based evidence, by conducting rigorous evaluations of promising interventions already being delivered in real-world practice settings, may prove to be a potential solution. A final limitation worth noting is that most school-based delinquency prevention interventions are universal, meaning they are delivered to the whole school or whole classroom (e.g., Wilson & Lipsey, 2007). Unfortunately, youth who encounter the juvenile justice system have frequently experienced a number of difficulties and many require more intensive

interventions (Young, Farrell, Henderson, & Taxman, 2009). In school settings, these types of interventions are usually described as being selective interventions and are delivered within a positive behavioral interventions and supports framework (also known as Tier two level intervention; Thompson, 2013). It is possible that selective, more intensive interventions may be necessary to prevent juvenile delinquency among this at-risk population. More rigorous research is needed to determine the impact of gender-specific and selective level interventions developed by practitioners with students at-risk of delinquency.

Research Hypotheses

The purpose of this study is to investigate the extent to which a gender-specific, selective school-based intervention, the XY-Zone, is efficacious with male youth who are at-risk for delinquency. The XY-Zone is a multicomponent school-based prevention program intended to intervene during key developmental periods to empower at-risk male students to identify strengths and enhance protective factors. The program was created within the school setting and has been sustained for more than 10 years. Specific program components are described below. The following primary hypothesis was tested: 1) The XY-Zone will increase self-control, self-efficacy, family involvement, school engagement, and career development among adolescent males who are identified as being at-risk for delinquency when compared to the control group. In addition, the following exploratory secondary hypotheses were tested: 1) increases in career development will also increase school engagement, and 2) participation in the 5 Rs step in the XY-Zone will positively impact the program constructs that it is designed to increase.

Methods

Participant Eligibility and Procedures

Through a purposive sampling process, male students (ages 13-18) from all grade levels who were eligible for the XY-Zone at ten urban high schools in the Austin, Texas area were recruited through the XY-Zone's standard recruitment process. The majority of the participants in each of these schools received free or reduced lunch, indicating that they were from lower socioeconomic neighborhoods. Potential XY-Zone members were typically identified through referrals from various sources (teachers, counselors or service professionals, other students, and self-referrals from students who had heard about the XY-Zone while in middle school). To be eligible for the XY-Zone, male students had to be considered "at-risk." The agency operationally defined "at-risk" through four domains of risk: academic risks (failed two or more core classes, failed state examination test, lack of class participation, and homework incompleteness), attendance risks (excessive absences and tardies), behavioral risks (gang involvement, substance use, poor classroom conduct, poor social skills, poor self-esteem, violence, delinquent conduct, and family or emotional crisis), and social service issues (difficulty with the following: college readiness, CPS involvement, life skills, health, career/ employment, housing, daycare, and grief or loss). Youth were first assessed by the XY-Zone coordinator to determine eligibility to enter the program. Once the coordinator assessed a participant as eligible for the XY-Zone, the coordinator asked the youth if he was interested in participating in the study. If so, each individual was provided with a consent form and explanation of the study. The coordinators provided students with both the regular agency consent form as well as this study's consent form to be taken home and signed by their parent/guardian.

Both English and Spanish consent forms were available to students and families.

Participants were also informed that they would be asked to complete a questionnaire at three time points that would take about 30-45 minutes, and would be compensated with a gift card. Based upon information from a previous Austin Independent School District (AISD) study, \$25 was determined to be a necessary amount to retain control group participants over time. Thus an increasing gift card amount was offered: \$10 at time one, \$15 at time two, and \$25 at time three.

After students were randomly assigned to the treatment or control groups, measurement instruments were administered in a private office located in the respective school that each student attended. Two trained social work graduate students from the University of Texas at Austin conducted the interviews with participants in the treatment group. One student was a doctoral student and the PI of the study. The second student was a master's student. The PI met with the master's student for two hours to train her in the interviewing procedures. In addition, they met and reviewed procedures before and during each wave of data collection. The XY-Zone coordinators from each particular school conducted the interviews with the student in the control groups. Coordinators all attended a two-hour training with the principal investigator (PI) on how to administer the surveys. In addition, the PI met with each coordinator in person prior to each data collection to answer any questions and review training content. To reduce social desirability bias when administering the surveys, both the interviewer and the student had their own copy of the survey, and students were prompted to circle responses on their survey as the interviewer read each item aloud. This study was approved by The University of Texas at Austin's Institutional Review Board and the Austin Independent

School District's Office of Accountability. In addition, a Certificate of Confidentiality from the National Institutes of Health was obtained for this study to protect students' responses regarding sensitive data.

Participant Flow

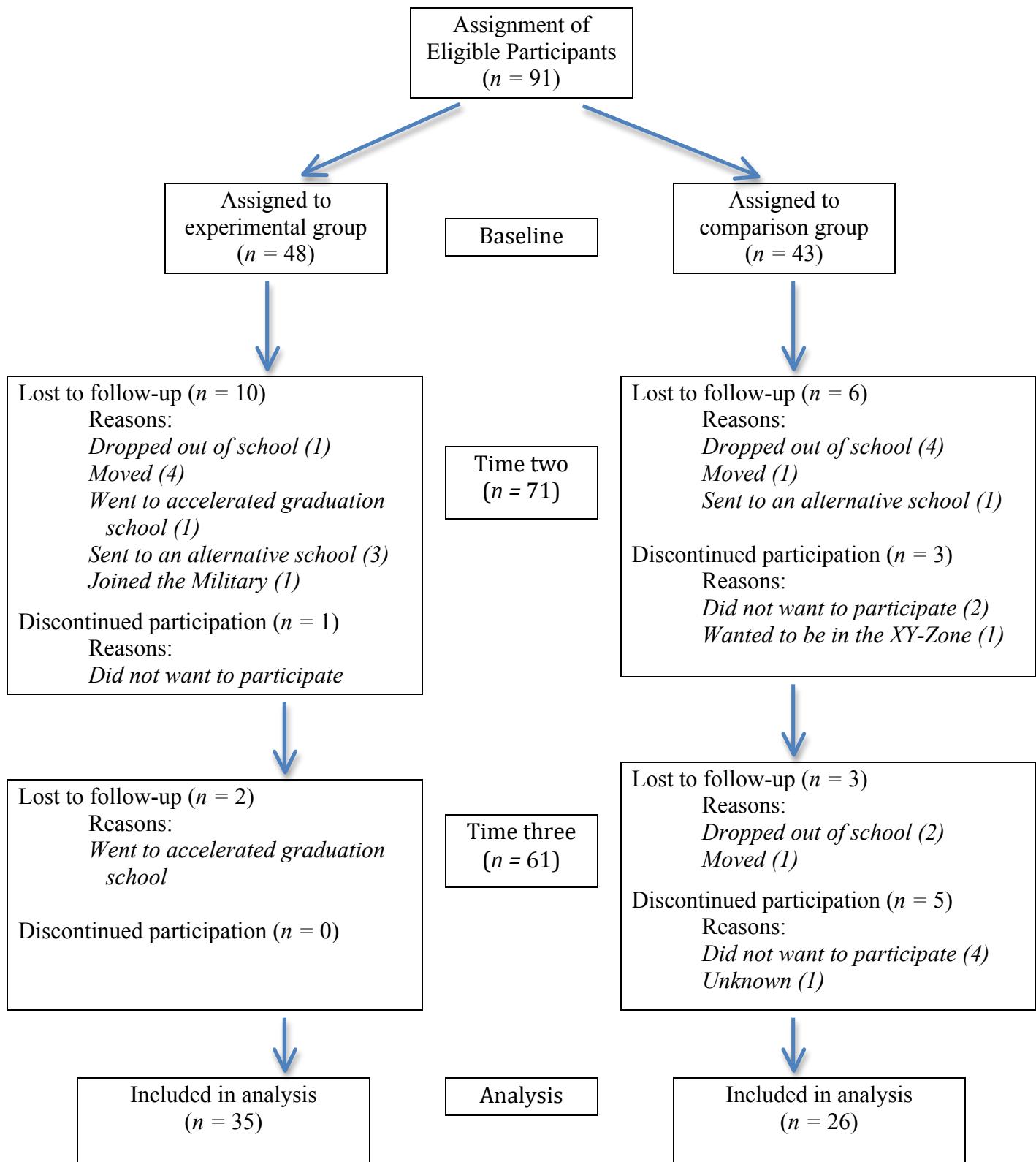
Ninety-one XY-Zone eligible participants agreed to participate in the XY-Zone study (see Figure 6.1). Forty-eight participants were randomized into the treatment group, and 43 were assigned to the control group. Between time one and time two, 11 participants dropped out of the treatment group, and 9 participants dropped out of the control group. Figure 6.1 illustrates that most of these students were lost because they either moved or dropped out of school. A total of 61 participants completed surveys at all three time points and comprised the final sample used in this analysis, with 36 students in the treatment group and 25 in the control group. Sixty-seven percent of the original sample was retained, which is better than attrition rates from school-based intervention research conducted in urban settings (e.g., Greene, Way, Pahl, 2006; Li et al., 2011).

Baseline Data

The final sample ($n = 61$) was primarily of Hispanic (54%) or Black (34%) ethnicity (see Table 6.2), and most were either Freshmen (51%) or Sophomore (36%) students. Students were approximately 15-years-old ($M = 15.07$, $SD = 1.08$), however, participants in the control group were significantly younger than those in the treatment group, $t(59) = 2.15$, $p = .035$, 95% CI [.04, 1.13]. Due to small sample size, this variable was not included as a covariate in the analysis. Most (75%) of the participants had risk factors in more than one risk domain, with 24.6% ($n = 15$) in one, 44.3% ($n = 27$) in two, 26.2% ($n = 16$) in three, and 4.9% ($n = 3$) of participants had risk factors in all four risk

domains. Almost all (98.4%) students had social service risk factors, followed by academic (62.3%), behavioral (45.9%), and attendance risks (6.6%). Specifically, the majority of students who qualified for the social service risk factor did so by coming from low socioeconomic status families and received free or reduced lunch. Differences between treatment and control group regarding risk domains and number of risk domains under which participants fell were not significant. In addition, no significant baseline differences in outcome variables of interest were found between groups.

Figure 6.1
Flow of Participants



Treatment Fidelity and Dosage

Measuring treatment fidelity of interventions conducted in the practice setting has been deemed a difficult task (e.g., Carroll et al., 2002), as was the case in this study. Because the XY-Zone creators credit the flexibility given to the XY-Zone coordinators as a strength of the program (allowing coordinators to alter the treatment protocol and duration to meet the needs of the individual groups), a simple fidelity instrument was created for this study. Coordinators were given a checklist with the manualized treatment objectives that accompanied each of the 12 sessions. For example, the manualized session six on “responsibility and the self” had four treatment objectives: 1) develop a group definition of responsibility, 2) increase awareness of personal responsibility for self, 3) explore the connection between current behavior and the future, and 4) set one goal regarding responsibility for self. Coordinators would provide a check next to the completed objective and the date on which it was completed. Checklists revealed that XY-Zone coordinators addressed an average of 93% of the manualized treatment objectives. In addition, students in the XY-Zone attended an average of 70% of the sessions made available to them ($M = 70.00$, $SD = 26.18$) and participated in approximately five hours of community service projects over the year ($M = 5.08$, $SD = 5.70$).

Table 6.2***Participant Characteristics and Baseline Differences***

Characteristics	Total Sample N (%)	Treatment Group N (%)	Control Group N (%)	Treatment versus Control <i>p</i> value
<i>Black/ not Hispanic</i>	21 (34.4)	11 (31.4)	19 (38.5)	0.60
<i>Hispanic</i>	33 (54.1)	20 (57.1)	13 (50.0)	
<i>White/ not Hispanic</i>	4 (6.6)	2 (5.7)	2 (7.7)	
<i>Other</i>	3 (4.9)	2 (5.7)	1 (3.8)	
<i>Academic Risks</i>	38 (62.3)	25 (71.4)	13 (50)	0.11
<i>Attendance Risks</i>	4 (6.6)	3 (8.6)	1 (3.8)	0.63
<i>Behavioral Risks</i>	28 (45.9)	18 (51.4)	10 (38.5)	0.45
<i>Social Service Risks</i>	60 (98.4)	34 (97.1)	26 (100)	1.00
<i>One Risk</i>	15 (24.6)	6 (17.1)	9 (34.6)	1.00
<i>Two Risks</i>	27 (44.3)	16 (45.7)	11 (42.3)	
<i>Three Risks</i>	16 (26.2)	11 (31.4)	5 (19.2)	
<i>Four Risks</i>	3 (4.9)	2 (5.7)	1 (3.8)	
	Mean (SD)			<i>t</i>
<i>Age</i>	15.07 (1.08)	15.31 (1.13)	14.73 (0.92)	2.15*
<i>Career Development</i>	2.96 (1.61)	12.63 (2.77)	12.69 (2.49)	-0.93
<i>Family Involvement</i>	43.79 (18.49)	21.94 (5.07)	21.31 (4.80)	0.50
<i>School Engagement</i>	18.47 (4.42)	18.91 (4.34)	17.88 (4.54)	0.89
<i>Self-Control</i>	24.39 (18.49)	33.81 (6.98)	31.30 (6.78)	1.39
<i>Self-Efficacy</i>	8.09 (2.73)	27.34 (5.28)	27.54 (3.51)	-0.17
<i>XY-Zone Scale</i>	2.02 (1.46)	68.11 (9.76)	71.20 (8.12)	-1.29

Note: p<.05*

Research Design

A pilot randomized controlled trial design was employed to test the research hypotheses. Once all consent forms had been received, students were randomized into groups in early September of 2011. Participants at each school were randomly assigned to either a treatment (XY-Zone) or control group through the use of a computer algorithm.

Specifically, names of the participants were entered into an Excel document, and Excel generated a random number for each student. The PI arranged the numbers in ascending order and assigned every other student to one of the groups. Those assigned to the control group were referred to the Communities in Schools (CIS) program manager at that school and received CIS services. Additionally, they were placed on a waiting list to receive XY-Zone services the following year. Students in both groups were asked to complete survey information three times during the school year (baseline in September of 2011, mid-year in January, 2012, and at the end of the school year in May 2012). Clustering of students did not occur due to limitations with small sample size.

XY-Zone Intervention

Driven by several theoretical perspectives (strength-based perspective, risk and resiliency model, and developmental theories), the XY-Zone was developed by social workers at CIS to intervene during a key developmental period and empower students to decrease risk behavior and identify strengths through a combination of services and three linear treatment steps. The first step is driven by five guiding principles known as the five R's: respect, responsibility, relationship, role modeling, and reaching out (a thorough description of the 5 Rs is published elsewhere (see Aguiniga, Streeter, & Hurewitz, 2007). Through these principles, the participant explores healthy psychosocial behaviors and thoughts in a structured and manualized 12-session group setting. Each session lasts approximately one hour and is often delivered once every one to two weeks (see Table 6.3 for a list of the treatment objectives for the 5 Rs step). Once a participant has graduated from the 5 Rs stage, they become eligible to enter into the next step: leadership.

Table 6.3: The Purposes of the 5 Rs Step Sessions

Session Number	Purpose of Sessions
1	Create an environment in which every participant feels welcomed, engaged, and interested in continuing to meet together.
2	Provide an opportunity for participants to reflect on their experiences by creating a tangible record of their lives; to recognize the connections between past experiences and current feelings and responses; and to introduce the concept of free attention.
3	Provide a safe environment to explore ideas related to definitions of manhood.
4	Explore what self-respect means in everyday life, and how our actions reflect respect or disrespect for ourselves.
5	Explore and honor differences among people.
6	Provide participants an opportunity to explore and define responsibility as it relates to taking responsibility for themselves and their actions.
7	Provide participants the opportunity to explore responsibility as it relates to others.
8	Provide an opportunity to explore relationships with the opposite sex and significant others in a respectful environment (e.g., mother, significant other).
9	Explore how different societies handle the transition to manhood, as well as the father-son relationship or absence of a father figure.
10	Explore and define the concept of role-modeling as it relates to participants' lives.
11	Define and explore the idea of reaching out to others and what impact reaching out has on participants' lives in the larger community.
12	Acknowledge and celebrate group members' participation, commitment, and growth.

The leadership step builds upon the guiding principles and employs activities to engage youth in exploring leadership in a 12-session group setting (see Table 6.4).

During the leadership step, participants organize and carry out a service-learning project in their community. Once a participant has graduated from the second step, he becomes

eligible for the third and final step: ambassador. Those in the ambassador step become a mentor to those in previous steps (as well as to those not involved in the program) and are “expected to explore the principles of leadership and the five R’s, and determine their personal relevance to their lives as young men” (Allen, 2008, p. i). Once a participant completes all three steps, he is then eligible to become a “Blue Shirt” member. At that time, he receives a blue XY-Zone shirt, and is considered an XY-Zone member for life. In addition to progressing through the three treatment steps, XY-Zone participants receive additional services as well. Collectively, the services provided by the XY-Zone program include: job readiness services, support groups, mentors, community services projects, peer education, and group discussions around men’s health information and adolescent pregnancy (RH2 Consulting, 2009). For feasibility purposes, this pilot RCT collected data that compared the effectiveness of the XY-Zone’s 5 Rs step to the control group.

Table 6.4: Purposes of Leadership Step Sessions

Session Number	Purpose of Sessions
1	Re-engage group members with the XY-Zone; emphasize that each individual has the potential for leadership; and create a working definition of leadership using qualities identified by the group.
2	Recognize that leadership is a dynamic element within a team; leaders arise out of the membership in different circumstances. To realize that leadership can be positive or negative, constructive or destructive.
3	Reflect on the meaning of integrity and its relationship to Respect, Responsibility, Relationships, Role modeling and Reaching out.
4	Explore the values of individual members of the group and how they affect the whole.
5	Show that acceptance of differences is a necessary quality of brotherhood and leadership.
6	Teach acceptance of and empathy for those seen as different, through interpersonal experience.
7	Develop a clearer understanding of peace and non-violence and share it with the school.
8	Validate participant efforts toward the service project, and to critique results.
9	Practice leadership and utilize individual strengths and creativity to establish a unified group vision.
10	Create a workable project plan while building on previous lessons regarding leadership and teamwork.
11	Explore participants' experiences and provide the information and support they need to be successful. If the project is completed, repeat Session Nine. If the project is still being done, continue meeting as a group weekly or as needed until it is completed or something happens outside the groups' control to prevent its completion. If the group does not meet the initial completion deadline, process why with the group. Get feedback from the group and determine whether the project can be completed with a new deadline or whether the mission is not possible. Follow up with ideas from the book <i>Failing Forward</i> by John C. Maxwell.
12	Celebrate participants' leadership rite of passage. The ceremony should be meaningful to everyone present.

Intervention services were provided by the XY-Zone coordinator at each school. The coordinators hold a bachelor's degree and have gone through an extensive training process prior to beginning as a coordinator. The XY-Zone coordinator reported to both the XY-Zone program director and also to the CIS program manager in their respective school. The CIS program managers typically hold a master's degree in either social work or psychology and were available to the XY-Zone coordinator for consultation and supervision. Although the XY-Zone intervention is manualized, coordinators are encouraged to cater the group sessions to the individual groups. For example, some 5 Rs group sessions focus on relationships. If the XY-Zone coordinator felt that there were several issues related to healthy relationships among the group, the coordinator may spend more sessions on that topic. For this reason, groups often take longer than 12 sessions. The number of possible sessions varied at each school, ranging from 12 to 21 one-hour sessions. The XY-Zone program director credits this individualization of group sessions as one of the strengths associated with the success of the program. On average, students attended 70% of the groups that were available to them.

Nine XY-Coordinators delivered the intervention to participants in this study, with one coordinator at each of the nine schools included. There was an average of 7 participants in each school ($M = 6.7$, $SD = 2.29$), ranging from 2 to 14. Because school staff and self-referrals are important components to the number of students enrolled in the XY-Zone, schools that have had the program running for fewer years had fewer participants at the beginning of the schools year.

Control Intervention

Communities in Schools is a school-based organization that serves over 1.26 million students in 28 states (Communities in Schools, 2013). In Texas, CIS provides selective intervention (also known as Tier 2 or group level intervention) to 61,972 on 672 campuses (Division of Federal and State Education Policy, 2013). Regarding treatment in Texas, CIS was recently highlighted as one of top three best practices for dropout prevention (National Dropout Prevention Center, 2008). Services provided by CIS to control group students were individualized to meet participants' identified needs. These services could have included case management, mental health services, individual or group treatment, mentorship services, after school programs, crisis intervention and academic assistance.

Measures

Primary Outcomes. All primary outcomes were measured using the Behavioral and Emotional Rating Scale-II (Youth Report; Epstein et al., 2004). This 57-item Likert-style scale has been designed for youth ages 11-18. The BERS-II youth report has strong internal consistency ($\alpha = 0.81 - 0.91$) and good test-retest reliability ($r = 0.84 - 0.91$). Normative tests for the BERS-II youth report were conducted with two samples: 2,176 students without emotional or behavioral disorders (EBD) and 861 students with EBD. Students ranged in age from 5-18, were from one of 30 states across the U. S., and were mostly White (80%) or Black (15%). Because students in the current study were racially different (mostly Hispanic and Black) than normed samples, Cronbach's alpha was calculated. Among the sample for this study, strong internal consistency was found ($\alpha = 0.80 - 0.88$).

Convergent validity has also been demonstrated, with moderate to high significant correlations being found with multiple comparison instruments (the Walker-McConnell Scale of Social Competence and School Adjustment- Adolescent Version, the Systematic Screening for Behavior Disorders, the Scale for Assessing Emotional Disturbance, Social Skills Rating System, and the Teacher Report Form) administered to a range of students (aged 5-18). Data was also collected from three groups of children (students with EBDs, students with learning disabilities, and students without disabilities) to demonstrate discriminant validity (Epstein et al., 2004). When completing the BERS-II youth report, students are instructed to respond in one of four ways (not at all like me, not much like me, like me, very much like me) to a variety of statements.

Self-control was measured using the BERS-II interpersonal strength subscale. The subscale is specifically defined to measure “the child’s ability to control his or her emotions or behaviors in social situations” (Epstein & Sharma, 1998, p. 5). The interpersonal strength subscale was found to be significantly correlated ($r = .75$) with the self-control subscale from the social skills rating system (Epstein, Mooney, Ryser, & Pierce, 2004). Examples of interpersonal strength statements are “when my feelings are hurt, I stay calm,” “I think about what could happen before I decide to do something,” and “I can deal with being told no.” Among this sample, strong internal consistency was found for this subscale ($\alpha = .87$).

Self-efficacy was measured using the BERS-II intrapersonal strength subscale. Specifically, it measures a child’s broad outlook “on his or her competence and accomplishments” (Epstein & Sharman, 1998, p. 5) and is assumed to function as a measure of general self-efficacy. Example statements include “I believe in myself” and “I

know what I do well.” Strong internal consistency among this sample for this subscale was also found ($\alpha = .88$).

Family involvement was measured using the BERS-II family involvement subscale, which has been defined as “a child’s participation in and relationship with his or her family” (Esptein & Sharma, 1998, p. 5). Statements that measure this subscale include “my family makes me feel wanted,” “I go to church regularly with my family,” “I get along well with my family,” and “I get along with my brothers and sisters.” Among this sample, internal consistency for family involvement was good ($\alpha = .80$).

School engagement was measured using the BERS-II school functioning subscale, which measures a child’s performance and involvement in classroom and school activities. This construct is measured by statements such as “I attend school daily,” “I listen during class and write things down to help me remember later,” and “I pay attention in class.” Cronbach’s alpha for school engagement among this sample was good ($\alpha = 0.88$).

Secondary outcomes. Career development was measured using the career strengths BERS-II subscale. This subscale was designed for youth to measure an adolescent’s interest and aptitude for career development. This 5-item subscale is comprised of statements such as “I have a plan for my future career” and “I have a skill that will help me succeed in a good job.” A strong internal consistency score was found for this subscale among those included in the study ($\alpha = .88$).

The program directors at CIS developed the XY-Zone Scale to measure the extent to which the program impacted the overlapping goals associated with the 5 Rs. This 23-item scale is comprised of several statements associated with the focus of the XY-Zone,

such as “I see myself as a positive leader,” “I would like to know more people from different cultural groups,” “I am serving others in my community,” I have the skills to be in a healthy relationship,” and “I take responsibility for what I do.” Participants choose from one of four options to indicate how true each statement is for them: 1) not true at all, 2) sort of true, 3) true, and 4) very true. This scale was found to have strong internal consistency among the sample ($\alpha = 0.90$).

Data Analysis

Baseline differences regarding age, ethnicity, risk factors, and outcomes of interest were calculated using the fisher’s exact test and independent samples t-test analyses. A two-way analysis of variance (ANOVA) with repeated measures was conducted to determine the impact of the XY-Zone on continuous variables (self-efficacy, self-control, family involvement, school engagement, and career development). Prior to interpreting results, normality and sphericity assumptions were examined. When sphericity assumptions were violated, the Greenhouse-Geisser or Huynh-Feldt correction was applied to the F statistic, depending upon the severity of the violation. Once the assumptions were satisfied, a time effect (within subjects effect), a group effect (between subjects effect), and a time by group effect (the interaction effect, also known as the treatment effect) was calculated for each of the continuous outcome variables. When a statistically significant interaction effect occurred, post hoc decomposition analysis were conducted to determine at which time point(s) the statistically significant effect occurred. Because the sample size was small, post hoc decomposition analysis were also reported for interaction effects approached statistical significance (p value of less than .15). Researchers have asserted that it is reasonable to set the alpha level at .15 when

interpreting pilot level data from small samples (Stevens, 2009). Eta squared effect sizes were also calculated to reflect the strength of the reported effects. Effect sizes were interpreted based on Cohen's (1988) classification, with 0.01 indicating a small effect size, 0.06 indicating medium, and 0.14 or above was considered a large difference.

Correlation analysis was conducted to determine the extent to which increases in career development between time 1 and time 3 was correlated with increases in school engagement scores between time 1 and time 3. Difference score variables were created for both career development and school engagement differences between time one and time three. Assumptions of linearity and normality were satisfied prior to analyzing the relationship between these continuous variables. An independent samples t-test analysis was also conducted to examine the relationship between career development scores and groups (treatment and control). In addition, multiple linear regression with an interaction term was conducted to determine the extent to which the differences in the groups' career development scores between time one and time three moderated the relationship between career development and school engagement. Group was recoded such that those in the treatment group received a value of 1 and those in the control group received a value of 0. The interaction term was created by multiplying the new group variable and the career difference score.

Results

Outcome Results

Self-Control

Regarding self-control, the interaction effect was not statistically significant. However, the time, $F(2, 53) = 2.40, p = 0.10$, and group, $F(1, 53) = 3.09, p = 0.09$, effects

approached significance (see Table 6.5 & Figure 6.2). Differences over time revealed a small to medium effect ($\eta^2 = .04$), the differences between groups offered a medium effect ($\eta^2 = .06$). Post hoc decomposition analysis revealed that there was a significant increase in the overall mean scores between time 1 and time 2 ($p = .02$). Further analysis reveals that it was the increase in the XY-Zone score that primarily contributed to this effect, as the increase between time 1 and time 2 for XY-Zone participants was significant ($p = .005$) and the difference for the control was not ($p = .47$). In addition, the overall group mean for the self-control score among the XY-Zone participants was higher ($M = 34.92, SD = .95$) than scores among the control group participants ($M = 32.22, SD = 1.21$). Further analysis revealed that the XY-Zone participants reported a significantly higher level of self-control at time 3 ($p = .036$) than students in the control group, and also reported a near statistically significant difference at time 2 ($p = .066$).

Figure 6.2

Self-Control

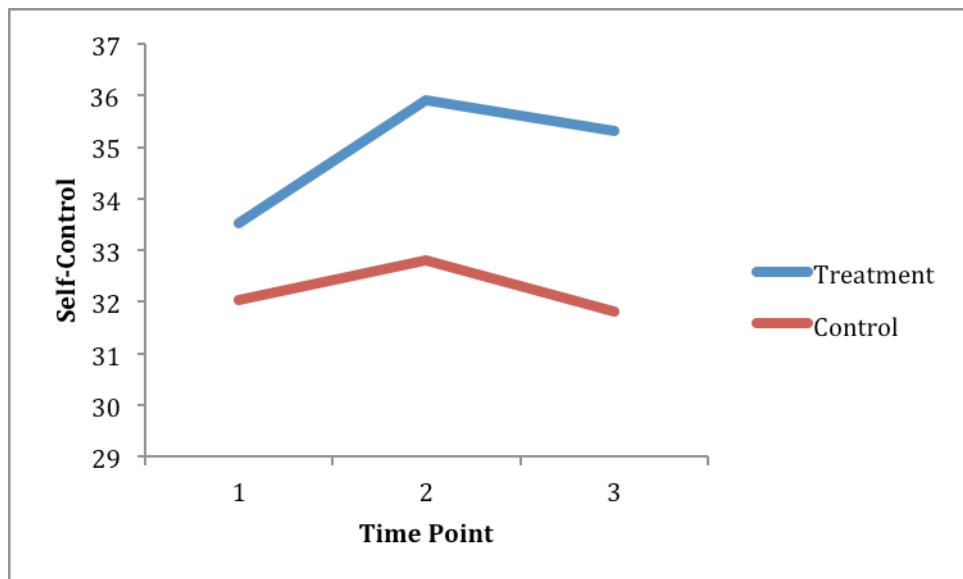


Table 6.5***Outcome Descriptives***

<i>Outcome</i>	Time 1 <i>Mean (SE)</i>	Time 2 <i>Mean (SE)</i>	Time 3 <i>Mean (SE)</i>
<i>Self-Efficacy</i>			
Treatment	27.47 (0.82)	27.56 (0.78)	27.94 (0.84)
Control	27.44 (0.97)	27.13 (0.93)	25.96 (0.99)
<i>Self-Control</i>			
Treatment	33.52 (1.19)	35.91 (1.02)	35.32 (1.01)
Control	32.05 (1.52)	32.81 (1.30)	31.81 (1.29)
<i>Family Involvement</i>			
Treatment	21.76 (0.87)	22.09 (0.88)	22.52 (0.90)
Control	21.24 (1.00)	21.16 (1.01)	19.80 (1.04)
<i>School Engagement</i>			
Treatment	18.92 (0.78)	19.36 (0.70)	18.18 (0.79)
Control	17.91 (0.93)	18.30 (0.84)	17.30 (0.95)
<i>Career Development</i>			
Treatment	12.60 (0.46)	12.60 (0.42)	13.35 (0.41)
Control	12.60 (0.53)	12.44 (0.49)	12.00 (0.48)
<i>XY-Zone Scale</i>			
Treatment	68.22 (1.64)	71.44 (1.44)	73.44 (1.59)
Control	70.86 (1.98)	73.09 (1.73)	72.05 (1.92)

Table 6.6***Two Way Repeated Measures Results***

Outcomes	SS	df	F	p	η^2
<i>Self-Efficacy</i>					
Time	7.59	1.87	.615	.542	.011
Group	26.71	1	.519	.474	.010
Interaction ^b	28.32	1.88	2.30	.110	.042
<i>Self-Control</i>					
Time ^b	64.77	2	2.40	.096	.043
Group	282.75	1	3.08	.085	.055
Interaction	30.43	2	1.13	.328	.021
<i>Family Involvement</i>					
Time	6.66	1.89	0.49	.603	.009
Group	82.20	1	1.29	.261	.023
Interaction ^b	38.80	1.89	2.86	.064	.049
<i>School Engagement</i>					
Time ^b	32.95	2	2.61	.078	.046
Group	39.67	1	0.90	.348	.016
Interaction	0.25	2	0.02	.980	.000
<i>Career Development</i>					
Time	0.91	2	0.19	.825	.003
Group	9.83	1	0.70	.408	.012
Interaction ^a	16.77	2	3.56	.032	.059
<i>XY-Zone Scale</i>					
Time ^a	310.88	2	7.95	.001	.133
Group	36.71	1	.19	.666	.004
Interaction ^a	115.40	2	2.95	.057	.054

Note. a= effect is statistically significant ($p < .05$). b= effect is approaching statistical significance and p value is less than .15

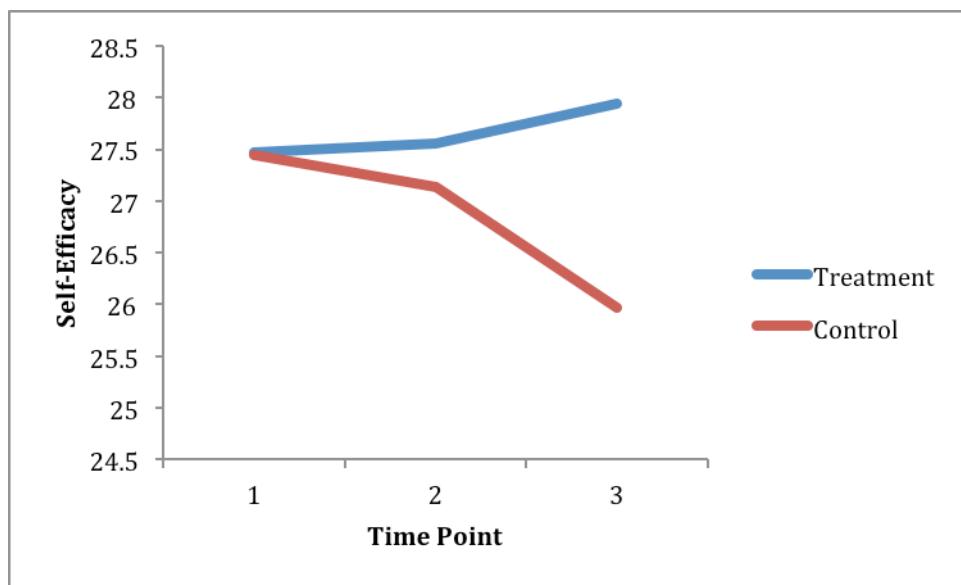
Self-Efficacy

As illustrated in Figure 6.3 and Table 6.5, XY-Zone participants reported an increase over time in self-efficacy (an adolescent's outlook on his competence and accomplishments), while the participants in the control group reported decreasing self-efficacy across all time points. Table 6.6 highlights that this interaction effect was nearing statistical significance, $F(1.88, 53) = 2.30$, $p = 0.11$, and had a small to nearing medium effect size ($\eta^2 = .042$). This means that it is possible that the 5 Rs step in the XY-

Zone increases self-efficacy among at-risk students. Post hoc decomposition analysis revealed the decrease in self-efficacy among the control group participants between time two and time three ($p = .09$), while showing no significant decrease in self-efficacy for the treatment group. Thus, the XY-Zone might protect against a reduction in self-efficacy strengths.

Figure 6.3

Self-Efficacy



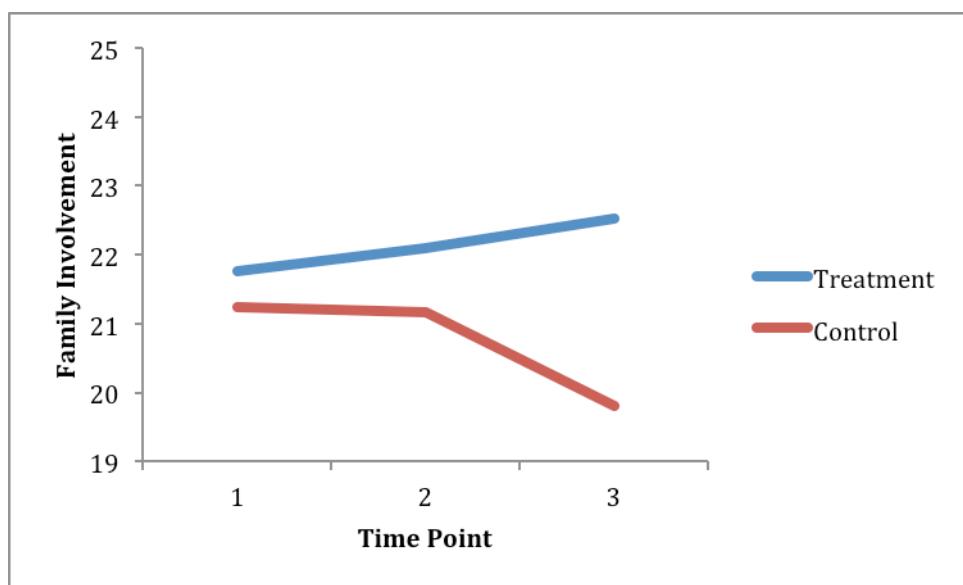
Family Involvement

Similar to the pattern that occurred for self-efficacy scores, participants in the XY-Zone reported increases in family involvement at each time point, whereas participants in the control group reported decreases in family involvement at each time point (see Tables 6.5 & 6.6). This interaction effect was near statistical significance, $F(1.892, 58) = 2.86, p = .06$, with a near medium effect size ($\eta^2 = .05$; see Figure 6.4). This means that it is possible that the reported increases in family involvement were associated with the XY-Zone intervention. Decomposition analysis revealed that

participants in the control group reported a significant decrease ($p = .034$) in family involvement between time 2 and time 3, while showing no significant decrease in family involvement for the treatment group. In addition a significant difference ($p = .053$) was found between the treatment and control groups at time three. So, it is likely that the XY-Zone both increased family involvement among the treatment participants, and may have prevented the young men from having additional family difficulties.

Figure 6.4

Family Involvement



School Engagement

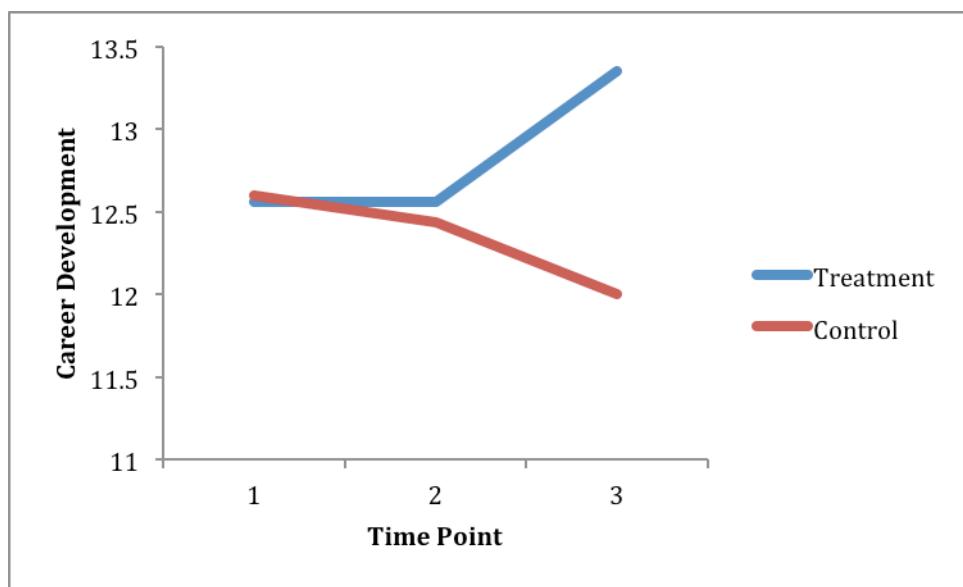
There were no significant interaction or group effects found regarding school engagement. There was, however, a near significant time effect, $F(2, 54) = 2.61, p = .08$, with a small to medium effect size ($\eta^2 = .04$). Across both groups, post hoc analysis revealed a significant ($p = .02$) difference between time two and time three. As can be seen in Table 6.5, the average mean score of school engagement were up for both groups between time one and time two, and then declined between time two and three.

Career Development

Results also indicated a statistically significant interaction effect, $F(2, 58) = 8.39$, $p = .03$, with a medium effect size ($\eta^2 = .06$) regarding career development (see Figure 6.5). The XY-Zone 5 Rs group intervention was found to increase career development over time compared to the control. While the control group decreased their career development scores across all time points, those in the XY-Zone retained the same score between time one and time two, and reported significant increases between time two and time three ($p = .03$). In addition, the career strengths difference between the control and treatment groups at time three was significant ($p = .036$). Therefore, the XY-Zone was found to increase career strengths among treatment participants.

Figure 6.5

Career Development



Career Development and School Engagement

Correlation analysis revealed a positive and statistically significant relationship between the career development difference score (the difference between time one and

time three) and the school engagement difference score, $r(58) = .49$, $p < .001$. Thus, increases in career development were related to increases in school engagement. In addition, the independent samples t-test revealed that the treatment group had a significantly higher career development difference score than those in the control group, $t(58) = 2.27$, $p = .03$. Therefore, the increase in career development between time one and time three was significantly higher among the XY-Zone participants than those in the control group. Lastly, the multiple linear regression analysis revealed that both group, $b = -.16$, $t(58) = -1.32$, $p = .19$, and interaction between group and the career difference score, $b = -.02$, $t(58) = -0.08$, $p = .94$, did not significantly account for the variance in the school engagement difference score. However, the overall increase in career development significantly predicted an increase in school engagement between time one and time two, $b = .54$, $t(58) = 2.82$, $p = .007$. Increases in career development also significantly accounted for 22% of the variance in school engagement increases, $R^2 = .22$, $F(3, 54) = 6.49$, $p = .001$. This relationship had a moderate to large effect.

XY-Zone Scale

Regarding the XY-Zone scale (which investigates concepts associated with the 5 Rs: respect, responsibility, relationships, role-modeling, and reaching out), a near statistically significant interaction effect, $F(2, 58) = 2.95$, $p = .057$, with a near medium effect size was found ($\eta^2 = .05$). Both treatment and control groups increased between time one and time two, however, the increases were only significant ($p = .007$) for those in the XY-Zone. In addition, those in the control group decreased their XY-Zone scale scores between time point two and three, while participants in the XY-Zone continued to

increase their scores. This change between time two and three among the XY-Zone participants was near statistical significance ($p = .058$).

Additional analyses revealed that several XY-Zone scale items contributed to the significant interaction effect. An interaction effect was found with several individual scale times. When compared to the control group, those in the XY-Zone were significantly more likely to report an increase in the following: a) seeing themselves as a positive leader, $F(2, 58) = 3.16, p = .05$, b) volunteering and community service $F(2, 58) = 5.06, p < .01$, c) thoughts about the future, $F(2, 58) = 3.01, p = .05$, and d) desiring to know people from different cultural groups $F(2, 58) = 3.82, p = .03$. In addition, although the XY-Zone participants did not statistically differ from the control group, a time effect was found regarding feelings of safety in the school. In other words, the XY-Zone participants were significantly more likely to feel safe at school after participating in the first year of the XY-Zone, $F(2, 58) = 5.76, p < .01$.

Discussion

The purpose of this study was to investigate the effectiveness of the XY-Zone, a gender-specific selective intervention, with male, primarily minority, high school students at-risk of delinquency. Specifically, this pilot level study primarily sought to examine the extent to which the XY-Zone impacted delinquency protective factors (self-control, self-efficacy, family involvement, and school engagement), as well as a factor (career development) that has been found to increase delinquency protective factors. The results of this study provide promising support for the hypotheses, as well as important implications associated with the current knowledge base and future research.

The results of this study provide preliminary support regarding the impact of the XY-Zone on delinquency protective factors. Due to the small sample size included in this pilot study, it is considered important to report effects that were approaching statistical significance ($\alpha < .15$; Stevens, 2009). Although no significant interaction effects (also known as treatment effects) were found with the four primary delinquency protective factors (self-control, self-efficacy, family involvement, and school engagement), analysis revealed several effects that approached significance. Specifically, self-control, self-efficacy, and family involvement outcomes all moved in the hypothesized directions. Reports for the average scores among students in the XY-Zone increased over time for all three of these outcomes, while students in the control group reported corresponding decreases. These results suggest that the XY-Zone might increase these key protective factors among students who are at-risk for delinquency. Additional research with larger samples is needed to confirm the impact of the XY-Zone on self-control, self-efficacy, and family involvement, but this preliminary pilot study provides initial positive results upon which future studies can be built.

This study did not provide support, however, for the hypothesis that the XY-Zone would increase school engagement, and no differences were found between groups over time. Participants from both groups exhibited a significant decrease in school engagement between time two and time three. Because this study used self-report from students to determine school engagement, this finding will need to be investigated further in subsequent studies that are able to better determine reasons for why youths did not report engaging more with their schools. There are many plausible explanations for why school engagement might decline from one time point to the next, and the difference in time

period and grade level may also be an associated factor. In addition, the National Research Council and the Institute of Medicine, for example, published a report that explained associated issues (2004), and they highlighted that urban students who lived in poverty conditions were more likely to have poor academic skills, a history of academic failure, and often felt alienated in the academic setting. Also, urban schools often have insufficient resources, the least qualified teachers, and the highest rates of teacher absences and turnover (National Research Council and Institute of Medicine, 2004). Because most of the students in the XY-Zone study were from lower socioeconomic status families, and over half had academic risks (62%), it is possible that the program was unable to impact these multiple risks that may have been associated with the decline in school engagement outcomes.

Researchers have also found the transition into high school very difficult for students. Neild, Stoner-Eby, & Furstenberg (2008) reported on the results of a study with 4,403 adolescents transitioning from eighth grade into high school. Supporting the theoretical assumption behind the social development model (Catalano & Hawkins, 1996), they found that despite controlling for demographic and familial characteristics, previous school performance, and pre-high school attitudes and ambitions, the transition into high school substantially decreased student engagement. Specifically describing problems for urban youth from lower socioeconomic neighborhoods, Neild and colleagues (2008) highlighted that most enter high school having had weak training in reading and math, but they are still expected to pass college preparatory classes, such as Algebra, by the tenth grade. Because most of the students in this study were 9th and 10th

graders, this difficult transition might serve as an explanation for the decrease in school engagement in the current study.

Although there were no significant interaction effects found regarding the aforementioned outcomes, participation in the XY-Zone was found to significantly increase career development when compared to the control group. To date, career development has not been considered to be a protective factor for delinquency. However, delinquency researchers reporting on longitudinal studies (e.g., Hall, Simon et al., 2012), as well as many of the school-based delinquency prevention studies (e.g., Lemstra et al., 2010; Wilson, Gottfredson, & Najaka, 2001; Wilson & Lipsey, 2007), do not include career development as an outcome of interest. Regarding intervention research, this is likely due to the fact that most school-based delinquency prevention interventions have been conducted with elementary or middle school students (e.g., Durlak, Weissberg, Dynmicki, Taylor, & Schellinger, 2011), a period during which career development is not often a relevant outcome of interest. The study of career development among at-risk minority adolescents is of particular importance, though, because increases in career development have been found to subsequently increase school engagement and academic achievement (Lapan, 2004). Specifically, male youth of color are most likely to drop out of school and also enter into the juvenile justice system (Kempf-Leonard, 2007); therefore, investment in increasing factors, such as career development, that are related to increases in relevant protective factors among this vulnerable population is important.

To that end, results from this study suggest a significantly strong and positive relationship between career development and school engagement for both the control and treatment groups. Because being in the XY-Zone was found to significantly increase

career development when compared to the control group, post hoc analyses were conducted to examine the extent to which that interaction moderated the relationship between increases in career development and increases in school engagement. Multiple linear regression revealed two important findings. First, the relationship between groups and career development (the interaction term) did not impact the change in school engagement. Second, it was only career development increases, regardless of group, that accounted for the significant variance in the school engagement increases (this effect was moderate to large). This finding confirms previous findings that have been published regarding the relationship between career development and school engagement (Castellano, Stringfield, & Strong, 2003; Lapan, 2004; Olson, 1997; Visher, Bhandari, & Medrich, 2004). Because of this strong relationship, it is important additional research is conducted to determine the extent to which career development may serve as a protective factor against delinquency.

The results of this study also provided promising support for the secondary hypothesis. A near significant interaction effect with a near medium effect size was found regarding the results of the XY-Zone scale. Students who participated in the XY-Zone reported an overall increase in the XY-Zone scale scores, and students in the control group reported an overall decrease. Further analysis revealed that several items contributed to this effect. Students in the treatment group reported significant increases in: seeing themselves as a positive leader, volunteering and community service, thoughts about the future, and desiring to know people from different cultural groups. Each of these items reflects important constructs that are taught in the 5 Rs step of the XY-Zone. For example, one of the 5 Rs is “role-modeling.” Students are taught that it is important

to be a positive role model for others at school, their siblings, others in the XY-Zone, as well as role model positive behavior in the community. Therefore, increases in seeing themselves as a positive leader likely reflects increases in the role-modeling R. Another R is “reaching out.” A key component of the XY-Zone is conducting service-learning projects in the community. A final example is the “respect” R. The idea of respect resonates with many adolescents (U.S. Department of Education, 2003), however, racial tensions still exist between various minority groups (Rosenbloom & Way, 2004). The XY-Zone teaches students that all opinions and people are of value and deserve respect despite cultural differences. The significant relationship between participation in the XY-Zone and increased scores in desiring to know people from different cultural groups confirms that constructs associated with the respect R are being increased by participation in the XY-Zone.

Implications for Future Research

The results of this pilot RCT offer important implications for future research. This study is one of the first to examine the impact of a male-only school-based selective intervention on protective factors among high school, primarily minority, urban youth from lower socioeconomic neighborhoods who are at-risk for delinquency. From a micro level, the XY-Zone meets several gaps in the literature (e.g., gender-specific; Kempf-Leonard, 2007; protective factor focused rather than simply deficit-based; Hall et al., 2012), and the promising results of this small pilot study necessitate future evaluation. Another investigation, with a larger sample size and a longer evaluation period, is needed to determine the extent to which the XY-Zone (and the impact of the other steps in the program) protects at-risk students from delinquency.

Another implication is with regard to the importance of practice-based evidence (PBE), or scaling up of interventions. Although many complications exist in conducting evaluations of programs that have been delivered in real world settings (Carroll et al., 2012), it may be important for researchers to collaborate with social work practitioners to determine the effectiveness of existing programs that have been designed to meet specific needs and gaps identified in the literature. After a decade of the “evidence-based treatment movement,” where mandates for the use of EBTs in the schools to prevent delinquency have not revealed particularly promising results, literature around the PBE approach has begun to increase (e.g., Duncan & Reese, 2012; Kratochwill et al., 2012). Although the operationalization of the PBE approach varies depending upon the literature source, the idea of increased collaboration between researchers and practitioners continues to grow across most social science fields (Duncan & Reese, 2012). The investigation of the XY-Zone provides one example of a way in which efficacious evidence can be built through a PBE approach.

A final implication of this study is the importance of identifying additional delinquency protective factors. Several others agree that much work is needed regarding the study on outcomes associated with delinquency protective factors (e.g., Hall et al., 2012), and several gaps have been identified. As aforementioned, the majority of what is known about delinquency prevention and protective factors comes from data with younger populations. Considering the data on the magnitude of the transition into high school (Neild, Stoner-Eby, & Furstenberg, 2008), exploring the extent to which additional factors, such as career development, protect against delinquency among high school youth may be meaningful.

Limitations

There are several limitations that are important to consider when interpreting the results of this study. First, the study was conducted with adolescents in the Austin, Texas area, so results are not generalizable to other populations. Secondly, there are additional variables that may have impacted results. Services were provided at nine different schools by nine different coordinators. Variation in school environment and how the XY-Zone Coordinators deliver the services could have impacted outcomes differently. Due to small sample size and lack of statistical power, it was not possible to control for or investigate these variables. Similarly, those in the treatment group were significantly older. Small sample size prevented this variable from being included as a covariate. It is possible that differences in outcomes could have been associated with age, rather than the treatment group. Thirdly, XY-Zone coordinators often deliver sessions at different times than other coordinators. So treatment dosage at time two varied among participants and may have impacted outcomes. This limitation may explain why larger changes were seen between time two and time three. Fourth, this pilot level study only collected data on the impact of the first step of the XY-Zone, and it is not known how the other two steps impact outcomes. A final limitation is that all measures were self-report. Future investigations should triangulate data and include teacher observation and report, parental report, and school records. Despite these limitations, this study is important, because it is a first step to investigate the effectiveness of the XY-Zone with a rigorous research design. In addition, the investigation of this intervention addresses several gaps in the literature associated with the importance of evaluating school-based delinquency programs that are gender-specific, conducted with urban, primarily minority, youth from

lower socioeconomic neighborhoods, and is being delivered in the natural practice setting.

Conclusions

Delinquency prevention researchers urge the field to recognize that the time is right for preventing youth from entering into a delinquent trajectory (Welsh & Farrington, 2010). Practitioners, researchers, and policy-makers agree that students should receive the most effective treatments that meet specific needs associated with the prevention of delinquency, and this topic has received more attention over the past decade than ever before. As the field continues to move forward, it is important that researchers build on what is known to investigate relevant interventions such as the XY-Zone, explore the opportunities associated with practice-based evidence, and investigate the impact of existing and potentially new protective factors on youth at-risk of delinquency.

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CHAPTER 7

CONCLUSION

The aim of this dissertation was to explore the impact of school-based delinquency prevention through both an evidence-based practice and practice-based evidence lens. Theoretically and empirically supported by the Social Development Model (Catalano & Hawkins, 1996), school-based interventions that sought to prevent delinquency through decreasing risk factors and increasing protective factors among youth at-risk for delinquency were examined. School-based delinquency prevention was examined through the three-article dissertation approach.

Drawing from the EBP approach, the first article mimicked a process that practitioners are encouraged to employ (Hennessy, & Green-Hennessy, 2011). Multiple EBT websites were searched looking for the most efficacious interventions to address a specified problem, intervening with particular variables, for an identified setting (delinquency prevention through impacting risk and protective factors in the school setting). Four interventions met inclusion criteria: the Good Behavior Game, LifeSkills Training, Positive Action, and Promoting Alternative THinking Strategies. Each of these interventions revealed strength in their empirical support and their impact with important delinquency risk factors: aggression, substance use, and antisocial behaviors. Some studies also reported on the impact of protective factors, but much less data was presented on these factors. Although these interventions revealed great strength, several limitations existed (gender specificity in treatment modality, primarily universal approaches with young participants, and, as aforementioned, limited content on

protective factors). In addition, despite several strengths, including high readiness for dissemination scores, each of these researcher-developed interventions have struggled to empirically reveal sustainability in practice settings. Out of these limitations, this dissertation investigated the extent to which a practice-based evidence approach may be an alternative option for youth most at-risk of a delinquency trajectory: male, urban, primarily minority youth from lower socioeconomic neighborhoods.

The second article offered social workers a practice-based evidence approach to preventing delinquency in the school setting. Specifically, the article reported on a practitioner and researcher collaborative study that evaluated the effectiveness of a gender-specific, community-developed, and selective intervention with urban, primarily minority youth from lower socioeconomic neighborhoods in a school setting, the XY-Zone. Developed by practitioners, the XY-Zone has been successfully implemented, continues to grow, and has sustained in the community for over 10 years. The article offered results of a pretest/posttest design that addressed limitations from previous evaluations and offered promising support for the impact of the XY-Zone on protective factors among youth at-risk for delinquency.

The final article offered results of a randomized controlled trial design that investigated the effectiveness of the first year of the XY-Zone. Several significant and approaching significant effects were found regarding the positive impact of the XY-Zone on increasing delinquency protective factors when compared to the control group. The second and third articles give way to important next steps in the practice-based evidence approach for the investigation of the XY-Zone. Additional research, with larger sample

sizes and longitudinal design, is needed to determine the effectiveness of the XY-Zone on preventing delinquency.

One might read the title of this dissertation and assume that its purpose is to present research on both approaches, polarizing the two, and describe why one approach is superior to the other as a conclusion. That, however, is not the conclusion to which this dissertation has lead. Rather, similar to other authors (e.g., Barkam & Mellor-Clark, 2000), this dissertation provides evidence that both approaches can inform the other. Lessons on sustainability, practitioner buy-in, and adaptation to specific populations may be gained from the PBE approach. And lessons on research design rigor and the use of validated and reliable instrumentation may be gained from the EBP approach. As globalization and advanced resources continue to springboard awareness of both the problems and solutions to delinquency prevention in schools, it is likely that advancements in the PBE and EBP approaches will give way to the ever-debated gap between research and practice grow much nearer than ever before.

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