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Measuring the Social and Emotional Skills of Hispanic American Students in an Afterschool Karate Program

Noel Adrian Castillo

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**School of Criminal Justice
Abraham S. Fischler College of Education
NOVA Southeastern University**


Measuring the Social and Emotional Skills of Hispanic American Students in an
Afterschool Karate Program

by
Noel A. Castillo
An Applied Dissertation Submitted to the School of Criminal Justice
in the Abraham S. Fischler College of Education
of Nova Southeastern University
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Approval Page

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Abstract

Social and Emotional Skills of Hispanic Americans Students in an Afterschool Karate Program. Noel A. Castillo, 2020: Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education, School of Criminal Justice. Descriptors: Hispanic-Americans, Miami-Dade County, Kenpo Karate, Traditional Martial Arts, Social and Emotional Learning Skills, Aggressiveness, Afterschool Program.

The social and emotional learning skills of children play an important role in their development. These skills include persistence, self-control, and social competence. The lack of these skills can often be a predictor of future criminality and antisocial behavior. Aggressiveness in youth plays a key role in violence among juveniles. Violent crime committed by juvenile offenders has been a longstanding issue facing the United States criminal justice system. It lacks an effective prevention method, disproportionately affects minority youth, and is often cited as a future predictor of criminality.

The purpose of this quasi-experimental, one-group, pretest–posttest design study, was twofold. First, it examined the effects of traditional martial arts training on the social and emotional learning skills of persistence, self-control and social competence of students within a structured afterschool setting. Secondly, it investigated the effects of traditional martial arts training on the ability to resolve problems with peers without becoming aggressive in these same students. The research subjects consist of 57 predominantly Hispanic students (ages 5-11) enrolled in an afterschool program at Tiger and Dragon Youth Center (T&D), throughout the 2018-19 academic school year. This program teaches the traditional martial art of Kenpo Karate.

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Chapter 1: Introduction

Nature of the Research Problem

The social and emotional learning (SEL) skills of children play a key role in their healthy development (Child Trends, 2014). These SEL skills include persistence, self-control, and social competence. Studies have shown that deficiencies in these skills can often be a predictor of future criminality and antisocial behavior (Beelman & Losel, 2006). Without intervention, the recidivism rate for juvenile offenders can be from 60-80% (Mathys & Born, 2009). Further compounding this issue is the juvenile delinquent population's general resistance to change (Mathys & Born, 2009), resistance that can be a negative expression of persistence.

A deficiency in the area of social competency, can be exhibited in the form of aggressiveness. Aggressiveness in juveniles plays a key role in youth violence. Tremblay, Pihl, Vitaro, and Dobkin (1994) noted that the strongest predictor of youth violence tends to be physical aggression, as reported by parent/teacher/peer observation and/or self-reporting. Of concern is aggressive behavior exhibited in early childhood that ultimately increases the risk of violent crime (Brame, Nagin & Tremblay, 2001; Moffitt, 1993; Moffitt & Caspi, 2001; Tremblay et al., 1994; Church, Springer, & Roberts, 2014). This is significant since studies show that several factors, including victimization, correlate with higher rates of delinquency and aggression for juveniles (Church et al., 2014). Duncan and Magnuson (2011) maintained that longitudinal studies (e.g., Leschied, Chiodo, Nowicki & Rodger, 2008) have found that adult criminal offenders were much more likely to have been aggressive as young children than their non-offending adult counterparts.

Aggressiveness in juveniles and violent crime often go hand and hand with each other. One of the major challenges to the current juvenile justice system involves violent crimes committed by juvenile offenders (Church et al., 2014). It has been an issue for quite some time, devoid of an effective prevention method and disproportionately involving minority youth (Durant, Cadenhead, Pendergrast, Slavens, and Under, 1994). What is known today is that violent crimes committed by juveniles are not as prevalent as other offenses they commit, such as status offenses and non-property crimes (Church et al., 2014). In fact, juvenile crime is on the decline. Church et al. (2014) asserted that recent trends in juvenile delinquency indicated a consistent drop in the number of juvenile arrests (with a lone slight spike upwards in 2006).

Despite an overall reduction of juvenile crime (to include violent crime), this issue is worthy of research due to its effects on minorities and as a predictor of future criminality. Minorities are still disproportionately affected by juvenile violent crime (Durant et al, 1994; Church et al., 2014, Akers, Sellers, & Jennings, 2017). Different forms of violence that are unreported (to include fighting, group fighting, and attacks with the intent to harm) also disproportionately affect minorities (Salas-Wright, Nelson, Vaughn, Reingle-Gonzalez & Córdova, 2017). Despite the lower violent crime rates, adolescents still have the highest age-adjusted rates of violent victimization (Farrington, 1989; Thornberry & Krohn, 2000; MacDonald, Stokes, Grunwald, & Blumenthal, 2013). Committing serious delinquent or criminal acts at an early age is one of the strongest predictors of a future chronic violent offender (Piquero Hawkins, & Kazemian, 2012). Li, Nussbaum, and Richards (2007) found that exposure to violence among African American youth was a prominent and predictive risk factor of delinquent behavior. These

reasons were enough to warrant a closer examination of the problem and the offering of a possible solution.

Background and Significance

There have been several approaches related to SEL skills training and reducing aggressiveness in children. These include counseling, psychotherapy, behavioral, cognitive, and cognitive-behavioral treatments (Beelman & Losel, 2006). Mathys and Born (2009) noted that the treatment of juvenile delinquents was generally performed in group settings. This dissertation focused on the test subject's SEL skills of persistence, self-control, and social competence within a group setting. It examined the history of these approaches and how they related to this current study.

Martial arts have also been used as an intervention. Vertonghen and Theeboom (2010) highlight trends in recent martial arts research that impact this study, to include themes, groups of participants and methodologies. Since the 1970's researchers have focused on the outcomes of martial arts practice (Vertonghen & Theeboom, 2010). Whereas most of the earlier studies primarily focused on the influence of martial arts practice on a variety of personality traits of practitioners, current studies focus on the relationship between martial artists and aggression. Since the 1990's, most martial arts related studies have focused on youth rather than adults (Vertonghen & Theeboom, 2010). Longitudinal studies have been replacing cross-sectional designs in martial arts related research (Vertonghen & Theeboom, 2010). This dissertation is reflective of the trends in martial arts research.

The research subjects in this study consisted of 57 predominantly Hispanic students (ages 5-11) enrolled in an afterschool program at Tiger and Dragon Youth

Center (T&D), throughout the 2018-19 academic school year. This program teaches the traditional martial art of Kenpo Karate. The students participated in the karate class five times a week (1-hour daily).

Isabelle Castillo is the CEO of T&D. The Children's Trust (TCT) helps fund T&D's afterschool program. Castillo (personal interview, July 14, 2018) was interviewed as part of the research for this paper. Miami-Dade County, TCT, and local providers like T&D recognized the need of their local communities regarding childcare services. Miami-Dade County provided funding and a strategic plan, but it was up to individual County departments and local providers to implement the plan. The issues related to childcare facing the local community included poverty and lack of capacity childcare slots. The literature reviewed (Church et al.2014; Akers et al., 2017) clearly points at poverty and lack of social services as a critical risk factor in predicting juvenile violence and delinquency.

According to Castillo (personal interview, July 14, 2018), "In 2009 we documented that the 33193-area code (where T&D is located) had the highest percentage of children living in poverty in West Kendall (17.2%). TCT (2018) indicate this number has risen to 21.2%. It is important to note that the national average is about 15%. Our current student body exceeds this number since approximately half of them live below or close to the poverty line." Castillo (personal interview, July 14, 2018) also commented on the lack of capacity childcare slots, "In 2009 we documented that our area had an estimated childhood population of 50,096 children. According to TCT (2018), statistics shows that this number has increased to 52,661 children. Alarmingly enough these statistics also show that there are only 4,482 capacity childcare slots in the

area!” Towards the end of the interview Castillo (personal interview, July 14, 2018) also commented on the diversity of her staff. The staff includes personnel from the Hispanic, African American, Haitian, and LGBT community. Castillo (personal interview, July 14, 2018) feels this is important because the staff is reflective of the community it serves.

Barriers and Issues

Several barriers and issues were identified, and this researcher took measures to mitigate the effects these barriers/issues may have had on the study. These challenges included ensuring IRB protections when dealing with children/juveniles, screening for students who entered the program with aggressiveness issues, controlling for researcher bias during the data collection and identifying inherent flaws of this quasi experimental research design.

As part of the contractual agreement (grant funding) between TCT and T&D, T&D is required to administer a host of testing, to include SEL skills testing. The instrument used is a Child Trends (2014) Socio-Emotional Teacher’s Survey. Data from the SEL test does not contain any personal identifiers and/or children’s personal information. Parents enrolling their children in T&D’s afterschool program have already given consent to this testing, thus ensuring a key requirement needed for IRB approval.

TCT also requires T&D to screen students who may have special needs and/or have any preexisting conditions/issues that may be of concern. Parents are required to fill out a questionnaire and provide an Individual Education Program (IEP) if the student has the aforementioned issues. This researcher had access to T&D’s data and a review of the student’s files helped to identify these students. In the case of this study, this screening helped to identify students who may have entered the program with aggressiveness and/or

other SEL issues already. This is important since these students may have exhibited abnormally high levels of aggressiveness at the onset of the program and may have been statistical outliers in this assessment.

Several mechanisms were put in place to control for researcher bias during this study. The SEL test was not administered by T&D employees or this researcher. Instead, it was administered by a certified teacher (Luc Joseph) who owns a contracted company (Luc I'm Reading LLC.) that specializes in academic programs for children and curriculum development. Mr. Joseph is contracted by T&D to provide tutoring, literacy classes, and homework help activities at T&D's afterschool program. Other than the martial arts instructors, Mr. Joseph spends the most time with the students in the program. This is important since Child Trends (2014) recommends that, "...the person who interacts most with the student on a daily basis should complete the survey" (p.10). In order to assure quality control, TCT monitors the results of the tests, conducts inspections, and provides training related to these tests. All the aforementioned factors helped to control researcher bias.

The one-group, pretest–posttest design chosen best fits this study, but it contains inherent flaws. The one group pretest-posttest design has no control group and no random assignment, which are threats to validity. No control group could be assigned since the students participating in the youth center's program were expected to participate in the martial arts. Random assignment could not be conducted since the sample size was small to begin with.

Purpose Statement

The purpose of this quasi-experimental, one-group, pretest–posttest design study, was twofold. First, it examined the effects of traditional martial arts training on the SEL skills of persistence, self-control and social competence of students within a structured afterschool setting. Secondly, it investigated the effects of traditional martial arts training on the ability to resolve problems with peers without becoming aggressive in these same students.

Definitions

The following terms and accompanying definitions are essential to understand this study:

- Traditional Martial Arts (TMA): Martial arts that emphasize the elements of philosophy, restraint, self-defense, uniforms, belt systems, control, and especially the use of katas (Nosanchuk & Catherine-MacNeil, 1989).
- Kata: Nosanchuk and Catherine-MacNeil (1989) defines kata as, “...an opponentless (usually) form of combat training involving a dance-like sequence of attacks and blocks” (p. 154).
- Kumite: A type of sparring (Nosanchuk & Catherine-MacNeil, 1989).
- Modern Martial Arts/Mixed Martial Arts (MMA): Martial arts that emphasize technical instruction, drill, and *kumite*; rather than katas, philosophy, meditation, measures of respect, control, and restraint (Nosanchuk & Catherine-MacNeil, 1989).

- Combat Sports (CS): Sports such as mixed martial arts, boxing, and wrestling (Jenkins & Ellis, 2011; Kuśnierz, Cynarski, & Litwiniuk, 2014; Vertonghen & Theeboom, 2014).

Chapter 2: Literature Review

Thematic Sections

The literature review provided a host of information regarding SEL skills, aggressiveness, afterschool programs, martial arts training and their collective role in crime prevention. Sources have been divided into the following thematic groups: traditional approaches to juvenile crime prevention, SEL skill development and crime prevention, aggressiveness and crime prevention, afterschool programs and crime prevention, martial arts training and SEL skill development, martial arts training and aggressiveness and the unique nature of this dissertation (i.e. setting, training frequency, and participant demographics).

Traditional Approaches to Juvenile Crime Prevention

To understand the traditional approaches to juvenile crime prevention one must first understand the theories associated with the cause of juvenile crime and the corresponding prevention methods. According to Church et al. (2014) the theories that explain delinquency include the deterrence, control, strain, conflict, learning, and biosocial theory. Both deterrence and control theories share a common core element; namely, that delinquency reflects mankind's natural and universal pursuit of pleasure. Deterrence theorists would claim that this inherent pursuit of pleasure can be controlled by swift and effective punishment. Control theorists would counter that this behavior could be checked by appropriate socialization during childhood and informal deterrence mechanisms.

Just like the name implies, strain theory focuses on the pressures some people experience in dealing with negative emotions that are manifested in delinquent acts. Church et al. (2014) found these pressures stemmed from societies paying an inordinate

amount of attention to economic versus non-economic institutions. This theory also forms the foundation for some Marxist theology.

Conflict theory proposes that all facets of the criminal justice system (law enforcement, violators of the law, and lawmakers) are part of the bigger conflict between different social, economic, and political groups (Akers et al., 2017). At times one group will violate the laws enacted by another group. The strain theory focuses on the conflict between different economic groups. In relation to youth violence Akers et al. (2017) noted "...minority groups may adhere to a set of behavioral and cultural standards that conflict with those of dominant conventional society; and behavior meant to express and uphold those standards may produce violence..." (p. 225).

Learning theorists surmise that people are influenced by their environment, peers, and role models. As a result, they learn how to commit delinquent acts in an environment that is conducive to such behavior. This process serves as an informal encouragement of delinquent acts, rather than an informal deterrence.

Psychological explanations for violent juvenile crime are varied. They include biosocial, psychoanalytic, and personality theories. Biosocial theorists contend that a combination of biological and psychological factors combine with other social forces to promote the increase of delinquency. Akers et al. (2017) mentioned how biological explanations for criminal behavior have evolved over the years, with the help of technical advances in the field of genetics, neurology, and biochemistry. According to Akers et al. (2017) this logical progression leads modern theorists to surmise that criminal behavior results from the interaction of a person's biological makeup with their surrounding physical and social environment.

Akers et al. (2017) noted that the psychoanalytic and personality theories recognized the effects of childhood experiences and environmental factors. In the case of psychoanalytic theory, childhood experiences play out in stages of development. Church et al. (2017) found that delinquent girls often had backgrounds of victimization that include child abuse. Akers et al. (2017) stressed that there are many individual and group therapies/studies related to juveniles.

According to Akers et al. (2017) the validity of psychoanalytic explanations of crime is hard to assess. Akers et al. (2017) noted that some of these difficulties included small sample sizes (either individual cases or small samples of serious offenders), few comparisons with samples of the general population, and deeply hidden motivations that are interpreted by a therapist. According to Akers et al. (2017), personality traits theory tends to be more empirically valid and testable. These theories use tests like the MMPI in their research.

Looming over the psychological explanations is one very prominent explanation that goes to the core of psychology; namely the brain itself (normal and abnormal brain in juveniles). For years the concept of risk taking by juveniles has been studied in most of the social sciences. Due in part to advances in neuroscience, some have proposed that there are scientifically verifiable links between a juvenile's brain development, risk taking, and abilities to control their emotions (Church et al., 2014; Giedd, 2008; Steinberg, 2012). One should proceed with caution with this approach since the science is relatively new. Steinberg heeds a cautionary argument, "brain science should inform the nation's policy discussions when it is relevant, but society should not make policy decisions on the basis of brain science alone" (as cited in Church et al., 2014, p. 453).

Research has shown that the deterrent effects stemming from informal deterrence tend to be more effective than other deterrence models such as certainty of arrest or severity of penalties (Green, 1989; Grasmick & Bursik, 1990). Akers et al. (2017) defines informal deterrence and its effectiveness as:

...the actual or anticipated social sanctions and other consequences of crime and deviance that prevent their occurrence or recurrence. This research has found that the perceptions of informal sanctions, such as the disapproval of family and friends or one's own conscience and moral commitments, do have deterrent effects. (p. 22)

Community enhancement efforts by organizations such as TCT and T&D relate to the Social Structure and Social Learning (SSSL) model of crime. By preventing neighborhoods from disintegrating into socially disorganized realms of chaos, communities can reinforce the positive aspects of SSSL. The SSSL model neatly incorporates elements of the deterrence, control, and learning theories. According to Akers et al. (2017):

The theoretical expectation from SSSL is that the higher rates of violence, crime, and delinquency often found in socially disorganized neighborhoods, with low informal social control, poverty, and few social resources, occur primarily because adolescents residing in such neighborhoods are more apt to be in association with delinquent peers, to be exposed to behavioral models of delinquent and criminal behavior, and to have their delinquent behavior differentially reinforced. (p. 104)

According to the SSSL model, the delinquent peers in socially disorganized neighborhoods may serve as an informal reinforcement of delinquent behavior (Akers et al., 2017). Juveniles learn to commit these acts in an environment that helps teach and later reinforce the delinquent behavior (Akers et al., 2017). Church et al. (2014) found that a key predictor for juvenile delinquency in adolescents ages 12 to 14, was the presence of antisocial peers. MacDonald et al. (2013) echoes these sentiments,

reinforcing the notion that parental social control and neighborhood collective efficacy (ability of community members to control the behavior of others in the community) have strong correlations with youth violence. The neighborhoods that possessed strong collective efficacy and parental social control had fewer violent incidents. Social class, gender, race, and religion may provide the learning contexts of positive socialization; yet, Akers et al. (2017) stresses the immediate effect that family, peer, school, and church have on promoting or discouraging criminal behavior.

The juvenile court's goal in the modern era has been to offer rehabilitation and treatment for juveniles, as opposed to punishment. Mathys and Born (2009) found that programs that took place in the juvenile's community were far more beneficial than intervention measures that involved placement in detention facilities. Juvenile detention rates have consistently declined over the years; however, the quality of the care, custody, control, and rehabilitation programs associated with detention leave much to be desired. Issues include the inherently negative psychological effects (especially on the developing mind of a juvenile) of incarceration and limited effectiveness of individually centered approaches (Church et al., 2014). They also lack effective post incarceration measures to reinforce the informal deterrence of positive support groups and counteract the negative influences of gangs, delinquent peers, and socially disorganized neighborhoods (Church et al., 2014).

The literature has stressed that the most effective prevention intervention took place in the school setting (Church et al., 2014; Greenwood, 2008). Developmental approaches and theory help to establish the foundation for the most effective school-based prevention programs (Church et al., 2014; Catalano & Hawkins, 1996; Tremblay &

Craig, 1995; Welsh & Farrington, 2009). Church et al. (2014) noted that the strongest literature related to the prevention of delinquency was associated with school-based interventions that can alter risk and protective factors. Church et al., (2014) found that the most significant risk factors included a family history of criminality, risk-taking behavior, poor grades in school, poverty, and poor parenting. These risk factors can also be subcategorized into developmental periods in a child's life, for example, early chronic disruptive behavior has been found to be a significant risk factor. Looking inward into one's self; individual protective factors can include an intolerant attitude toward deviance, high IQ, sociability, and religiosity (Church et al., 2014). Looking outward towards relationships with others protective factors can be found in positive relationships with family, peers, school, and the community (Church et al., 2014).

Since research has shown that the deterrent effects stemming from informal deterrence tend to be more effective than other deterrence models, it should come as no surprise that family-based interventions for juvenile offenders can be very effective in preventing recidivism (Church et al., 2014). The family often serves as the first, foremost, and most effective form of informal deterrence. Church et al. (2014) noted that interventions which addressed the family system have demonstrated long term declines in recidivism. The three family-based interventions with the most empirical support are the Multisystemic Therapy, Functional Family Therapy, and Multidimensional Treatment Foster Care (Church et al., 2014).

The student's family plays a central role in T&D's program. Castillo (personal interview, July 14, 2018) states that parent participation is encouraged at T&D, to include their participation in martial arts training with their children, coaching at karate

tournaments and engaging in community outreach through T&D (e.g. toy drive, collecting hurricane relief supplies and hosting holiday parties). Castillo (personal interview, July 14, 2018) reported that several siblings and cousins trained together at T&D, further strengthening the family bond. It can be argued that informal deterrence in crime prevention relies heavily on positive family involvement in a child's life.

Some studies have looked at whether martial arts practice among youth could affect juvenile crime rates (Basaran, 2016; Jenkins & Ellis, 2011) or aid in violence prevention (Woodward, 2009; Zivin, Hassan, DePaula, Monti, Harlan, Hossain, & Patterson, 2001). Castillo (personal interview, July 14, 2018) declared that the staff and martial arts instructors at T&D served as an informal deterrence to the students examined in this dissertation.

Two critical elements of effective juvenile justice programs include program capacity and program content. Church et al. (2014) describes program capacity as its ability to consistently deliver an effective product. The successful delivery of these programs hinges on strong leadership, qualified staff, and a mechanism in place to ensure quality control/assurance (Church et al., 2014). Mathys and Born (2009) echo these sentiments. Mathys and Born (2009) stated that the presence of an adult in these programs helped to mitigate the deviant peer influence that can occur in some of these programs. This deviant peer influence occurs when juvenile offenders are grouped together for rehabilitation or detention (Mathys & Born, 2009). Other moderating factors to deviant peer influence in these programs is the use of positive family relations and contact with non-deviant peers (Mathys & Born, 2009).

Social Emotional Learning Skill Development and Crime Prevention

Beelman and Losel (2006) cited the growing popularity of social skills training for children as a means for developmental crime prevention. This study analyzed the effects of traditional martial arts training on the SEL skills of persistence, self-control and social competence of participants within a structured afterschool setting.

Peterson and Seligman (2004) defined persistence in children as the “voluntary continuation of a goal-directed action in spite of obstacles, difficulties, or discouragement” (p. 229). Child Trends (2014) defined persistence in a similar way, focusing on a student’s attitude and determination to continue striving for a goal despite the challenges and shortcomings that may present themselves. The Child Trends (2014) definitions are of interest in this dissertation because this study used their survey instrument as part of this analysis.

The aforementioned definitions viewed persistence in a positive light. Duncan and Magnuson (2011) viewed persistence in a different light, arguing that persistent antisocial behavior problems in an early education setting was quite predictive of later crime. Persistence can also be expressed as the act of resistance, as in the juvenile delinquent population’s general resistance to change (Mathys & Born, 2009). It can be argued that the SEL skill of persistence can play a positive or negative role in a child’s healthy development, given the context of their behavior.

Child Trends (2014) defines self-control as the student’s ability to: “a) control emotions and behavior, b) inhibit negative behavior, c) sustain attention or concentrate on a given task, and d) wait for his or her turn or for what he or she wants” (p. 29). Self-control is strongly associated with social competence in children (Child Trends, 2014). In

a longitudinal study, Henry, Caspi, Moffitt and Silva (1996) examined the relations between family characteristics, childhood temperament, and convictions for violent and nonviolent offenses at age 18 in a representative birth cohort of males. Their study concluded that family factors were associated with both types of conviction outcomes, whereas childhood temperament was associated primarily with convictions for violent offenses (Henry et al., 1996). Furthermore, Henry et al. (1996) discussed the seemingly distinct roles of social- and self-regulation in the development of antisocial behavior.

Child Trends (2014) maintained that social competence is one of the skills that help children succeed in a scholastic setting over time. In the context of this dissertation and accompanying survey instrument, social competence includes a wide array of skills that are essential in harmonious and constructive interactions in a group setting. These skills include considering other's viewpoints, working well with others in task related endeavors, resolving problems in a positive manner and behaving in accordance with situational and social norms (Child Trends, 2014).

The crux of this study focused on the effects of traditional martial arts training on the SEL skills of persistence, self-control and social competence of the students and whether this effect carries over into reduced observed aggressiveness. Child Trends (2014) noted that in the past two decades a host of studies have documented and quantified the importance of SEL skills in the creation of positive outcomes for children. There is a host of traditional approaches that have been used to promote SEL skills in children that do not involve the martial arts.

Traditional approaches related to child social skills training in developmental crime prevention have included behavioral, cognitive, and cognitive-behavioral

treatments (Beelman & Losel, 2006). Additional treatments have included counseling and psychotherapy (Beelman & Losel, 2006). Most of the programs consisted of short interventions of limited intensity, with 40% of them not exceeding 10 sessions and almost half lasting no longer than two months (Beelman & Losel, 2006). This is in sharp contrast to this study where the students participate in their karate class five times a week (1-hour daily) for the academic school year (Aug. – May). Beelman and Losel (2006) found that, “high-intensity treatments always have the highest effect sizes and are the only ones to reveal a significant long-term impact on antisocial behavior” (p. 608).

Beelman and Losel (2006) noted that group training was the primary typical training format and almost half of the programs were conducted by teachers or psychosocial professionals. Furthermore, these programs focused on pre-school/elementary school aged students. Interesting enough, Beelman and Losel (2006) found that successful programs had a more impactful preventative role in high-risk groups that already exhibited behavioral problems as opposed to their low risk counterparts.

Aggressiveness and Crime Prevention

In the Child Trends (2014) survey instrument used in this study, aggressiveness is measured in the area of social competence. This researcher investigated the effects of traditional martial arts training on the ability to resolve problems with peers without becoming aggressive in the participants of this study. A host of longitudinal studies have found that adult repeat criminal offenders, were significantly more likely to have been aggressive as young children as opposed to their non-offending adult counterparts (Leschied et al., 2008). Duncan and Magnuson (2011) noted that early antisocial

behaviors like aggressiveness, were often predictive of early-adult crime. Traditional approaches related to reducing aggressiveness in children have included cognitive-behavioral group treatment, parent management training, and cognitive bibliotherapy. These approaches vary in terms of treatments, participants and documented effectiveness. These approaches often overlap with other existing crime preventative theories. Despite the variances in these approaches, many of their attributes can be found woven in the fabric of T&D's approach to their program.

Glancy and Saini (2005) found that cognitive behavioral therapy demonstrated general utility in the clinical management of anger. Glancy and Saini (2005) further explained that the cognitive-behavioral group's use of a multicomponent treatment strategy could be effective for improving the relationships between aggressive parents and their children. Sukhodolsky and Martin (2006) examined the use of parent management training (PMT). It is often touted as one of the best-studied psychosocial interventions for child disruptive behavior (Sukhodolsky & Martin, 2006). Shechtman (1999) proposed the use of cognitive bibliotherapy. In this approach literature is provided to the client and the client will extract the information they see fit, with minimal or no therapist contact. Shechtman (1999) noted that the client's relationship to their parents played a major role in their behavior.

These three studies (Glancy & Saini, 2005; Sukhodolsky & Martin, 2006; Shechtman, 1999) all share a very important element; namely, the importance of the parent involvement/interaction in these approaches. The importance of parents, family, and other forms of informal deterrence can be found throughout the literature associated with crime prevention. Family based interventions for juvenile offenders have proven to

be very effective in preventing recidivism (Church et al. 2014; Elrod & Ryder, 2014). Church et al. (2014) cites three effective family-based interventions (with the most empirical support) as the Multisystemic Therapy, Functional Family Therapy, and Multidimensional Treatment Foster Care. The foundation of the Social Structure and Social Learning (SSSL) model (Akers et al., 2017) is the informal deterrence to crime, provided in part by the family.

Child Trends (2014) noted that there is a high demand from schools and youth-oriented institutions to integrate SEL into their curriculums. Unfortunately, this type of learning often lacks consistent and measurable tools to monitor and assess these skills in the field (Child Trends, 2014). Regarding PMT, Sukhodolsky and Martin (2006) admitted that a chasm existed between the academic research and the availability of PMT in actual clinical training and practice. Durant et al. (1994) insisted that juvenile violent crime was an issue that lacked an effective prevention method. Despite the inroads the listed research and treatments have made in the area of child social skills training in developmental crime prevention and the reduction of aggression in children, there is still much work to be done. Castillo (personal interview, July 14, 2018) believes that T&D's program may help to fill that void.

Apart from the duration time of training/intervention, the karate training in this study/dissertation follows many of the evidenced based principles associated with more traditional approaches to child social skills training. Karate training in this program is conducted in a group training format and is conducted by martial art professionals. Like Beelman and Losel (2006), this study focuses on elementary school aged children. Efforts

were made in this study to screen for students with behavioral issues that could be considered high risk.

Afterschool Programs and Crime Prevention

In the last thirty years the United States has experienced a growth of afterschool programs as a result of several societal concerns (Lauer, Akiba, Wilkerson, Apthorp, Snow & Martin-Glenn, 2006). These concerns include lack of parental supervision in the home after school, the position that poor children can improve their learning by being provided more time and opportunities, and the high rate of teen crime that occurs after school (Lauer et al., 2006). Several studies point to a prime time for juvenile crime that occurs approximately between 2pm and 6 pm (Newman, Fox, Flynn & Christeson, 2000; Gottfredson, Gerstenblith, Soulé, Womer and Lu, 2004). Violent juvenile crime on schooldays also pervades during this time, as violent victimization of children more than triples (Newman et al., 2000).

Afterschool programs also attempt to address the issue of economically disadvantaged families. Poorer families are often less likely to be able to access these services (Newman et al., 2000). Poverty and unemployment often contribute to the social disorganization of such neighborhoods (Hanlon, Simon, O'Grady, Carswell, & Callaman, 2009). Often these economically disadvantaged neighborhoods tend to have the highest crime and are less safe than their middle- and upper-class counterparts (Newman et al., 2000; Lauer et al., 2006).

Several studies have analyzed the effects of afterschool programs with mixed results. Evans, Schultz, DeMars and Davis (2011) noted improvement in adolescents participating in an afterschool psychosocial treatment program designed to address

ADHD. Hanlon et al. (2009) focused on a predominantly African American afterschool program that used a group mentoring approach to promote school bonding, social skills development, and greater academic achievement. The study indicated significant effects for academic achievement and behavior (Hanlon et al., 2009). Reisner, White, Russell and Birmingham (2004) noted improvements on academic performance and school attendance in their study's participants. On the other hand, Ross, Saavedra, Shur, Winters and Felner (1992) reported that the curriculum they studied had no measurable positive effects on personality traits or in classroom behavior of its participants.

The use of physical activity and sports within an afterschool program was also analyzed by several studies (Gesell, Sommer, Lambert, Vides de Andrade, Whitaker, Davis, Beech, Mitchell, Arinze, Neloms, Ryan & Barkin, 2013; Hartmann & Depro, 2006). These studies were important to note since this study focuses on martial arts, which is a physical activity. Hartmann and Depro (2006) claimed that despite the popularity of sport-based interventions, there is little evidence that such initiatives are effective in reducing risk and preventing crime.

The duration time and frequency of these programs played a prominent role in their analyses. Evans et al. (2011) recommended a year-round program as opposed to a semester's worth of intervention. Gottfredson et al. (2004) spanned an entire school year. Reisner et al.'s (2004) analysis spanned two years.

The literature reviewed so far concerning crime prevention efforts (i.e. social skill development and afterschool programs) arguably had a hand in the implementation of programs such as T&D's (site of this study). On September 21, 2004, Miami-Dade County launched a comprehensive strategic plan (Bryson, 2011). The six strategic themes

that formed the plan included economic development, health and human services, neighborhood and unincorporated area municipal services, public safety, recreation and culture, and transportation (Bryson, 2011). One major component of the health and human services theme was childcare. On November 19, 2004, T&D was created in Dade County. Its continued operation is partly attributed to programs, grants, and opportunities afforded by Miami-Dade County's first strategic plan, particularly in the area of childcare.

T&D is a for-profit corporation. It offers a variety of programs to include afterschool programs, summer camps, and martial arts. One of T&D's primary sources of funding comes from The Children's Trust of Miami-Dade (TCT). TCT emphasizes collaboration and partnership in order to provide the programs and services needed by children and families, and to effect community-wide change (TCT, 2018). Hartmann and Depro (2006) noted that most sports-based intervention programs consist of a similar private/public partnership.

Martial Arts Training and SEL Skill Development

There is a host of literature regarding the positive aspects of martial arts training in both adults and children, to include SEL skill development. Previous studies have shown a relationship between the martial arts and health related quality of life (Draxler, Ostermann, & Honekamp, 2010; Woodward, 2009). The martial arts have been credited with contributing positively to the general well-being of youth (Tadese, 2015; Tadese, 2016; Tadese, 2017; Woodward, 2009). Diamond and Lee (2011) found that martial arts-based interventions aided in the executive function development of children 4–12 years old. Martial arts practices have also been credited with improved muscle function and

restorative properties (Doria, Veicsteinas, Limonta, Maggioni, Aschieri, Eusebi, Fano, & Pietrangelo, 2009; Kindzer, Saienko, & Diachenko, 2018). Recent studies have even examined the use of martial arts by children with Autism and ADHD (Bahrami, Movahedi, Mohammad-Marandi, & Sorensen, 2015; Healy, Nacario, Braithwaite, & Hopper, 2018; Movahedi, Bahrami, Marandi, & Abedi, 2013; Marquez-Castillo, 2013).

Martial arts practices have often been credited with reinforcing positive values such as self-respect, respect to others, and self-discipline (Kusnierz, 2011; Tadese, 2015; Tadese, 2017). Basaran (2016) noted the positive effect of martial arts practice on the self-esteem and hope of the children who have tendency towards criminal involvement. Along those lines, Jenkins and Ellis (2011) evaluated the use of martial arts as a moderator of antisocial behavior. Lakes and Hoyt (2004) looked at the effects of Tae Kwon Do training on the self-regulatory abilities of elementary school aged children. They noted significant improvement for the experimental group (those that participated in the training) in the areas of cognitive self-regulation, affective self-regulation, prosocial behavior and classroom conduct (Lakes & Hoyt, 2004).

Parents often seek out martial arts training for their children to address disruptive behavior, prevention of violence, and anger management issues (Castillo, 2018). General exercise has been found to have a positive temporal effect on disruptive behavior exhibited by youth (Folino, Ducharme, & Greenwald, 2014). Zivin et al. (2001) found that martial arts served as an effective approach to violence prevention. Along those lines Lotfian, Ziaee, Amini, and Mansournian (2011) and Ziaee, Lotfian, Amini, Mansournian, and Memari (2012) focused on the relationship between martial arts and anger management. Strayhorn and Strayhorn (2009) contended that martial arts studios

promoted their services by claiming that they could provide positive SEL outcomes such as self-esteem, self-confidence, concentration, and self-discipline.

Despite the literature reviewed regarding these positive outcomes, some argue that martial arts training may have little or no effect at all on SEL outcomes (Strayhorn & Strayhorn, 2009). Strayhorn and Strayhorn (2009) critique research on the effects of martial arts for its use of involved convenience samples, a singular martial arts intervention specifically tailored for the study, and small sample sizes. Their study included a large sample size and a cohort that had been followed over several years. (Strayhorn & Strayhorn, 2009). The data from their study failed to support enrolling children in martial arts to improve the mental health outcomes of self-esteem, self-confidence, concentration, and self-discipline (Strayhorn & Strayhorn, 2009).

Martial Arts Training and Aggressiveness

One of the main areas of this study deals with traditional martial arts training and the corresponding levels of aggressiveness in children. Several studies have shown how martial arts training helped to reduce aggressiveness, which many maintained is a key component of violence (Diamond & Lee, 2011; Nosanchuk & MacNeil, 1989; Reynes & Lorant, 2004; Steyn & Roux, 2009; Twemlow, Twemlow, Biggs, Nelson, Vernberg, & Fonagy, 2008; Vertonghen & Theeboom, 2014; Woodward, 2009). Several studies focused on aggressiveness and made a clear distinction between TMA and CS (Diamond & Lee, 2011; Kusnierz, 2011; Reynes & Lorant, 2004; Steyn & Roux, 2009; Twemlow et al., 2008). The distinction between TMA (i.e. karate, tae kwon do) and CS (i.e. mixed martial arts, boxing, wrestling) focused on TMA's use of katas (forms), meditative techniques, and teaching styles (Doria et al. 2009; Dodd & Brown, 2016; Kindzer et al.,

2018; Movahedi et al., 2013; Reynes & Lorant, 2004; Vertonghen, Theeboom, & Cloes, 2012; Vertonghen & Theeboom, 2014). Doria et al. (2009) defines kata as, "...a predetermined series of movements that are performed with explosive swiftness against imaginary opponents" (p. 2). Dodd and Brown (2016) elaborate further about kata as follows:

Japanese arts have been preserved and transmitted through kata, literally "form" or "mold", through which students learn structures of art, patterns of artistic and social behaviours, and moral and ethical values, all in accordance with a prescribed formulae. Kata is a set of bodily movements that have been developed and preserved by precedent artists. The most efficient and authentic way to master the artistry, it is believed, is to follow the model defined as kata. (p. 33)

The seminal work of Reynes and Lorant (2004) and Twemlow et al. (2008) figures prominently in this dissertation. Reynes and Lorant (2004), like many of their fellow researchers (Doria et al. 2009; Dodd & Brown, 2016; Kindzer et al., 2018; Movahedi et al., 2013), highlight the positive aspects of kata as an integral component of TMA. Movahedi et al. (2013) found that kata techniques training significantly improved social dysfunction in students with Autism Spectrum Disorders.

The martial art examined in this dissertation is Kenpo Karate, a TMA. The participant's ages (8-10 years old) in Reynes and Lorant (2004) are also like the ones in this dissertation. Of all the studies reviewed, Twemlow et al. (2008) most resembles this proposed dissertation. Twemlow et al. (2008) focuses on aggressiveness, examined a TMA, is often cited by other researchers, and its methodology, participants, and overall structure closely resembles this proposed dissertation.

The distinction between TMA and CS does not end with a discussion about the use of katas (forms), meditative techniques, and teaching styles found in TMA, but absent

in CS. The debate continues into the topic of its respective effectiveness in reducing aggressiveness in youth. The literature varies in its response.

Vlachos (2015) insisted that, “Traditional martial arts pick up where combat sports are lacking by offering a complete philosophical/technical system that is deeply pacifistic in nature” (p. 39). The seminal work of Steyn and Roux (2009) noted that the verbal aggression and hostility scores of the taekwondo students were significantly lower than the hockey participants and non-sport group. Though hockey is not a combat, it still involves a considerable amount of physicality and contact. Hishinuma, Umemoto, Nguyen, Chang, and Bautista (2012) focused on mixed martial arts (which would fall under the classification of CS) and reported that the mixed martial arts items were not associated with unique variances of youth violence perpetration and victimization.

Vertonghen and Theeboom (2013) concluded that differences exist in the characteristics and social background of participants depending on the type of martial art and CS being practiced. They recommended that since the differences in these mediating factors can be identified future research into these and other possible mediating factors should be considered when trying to determine social-psychological outcomes of martial arts and CS (Vertonghen & Theeboom, 2013). Kuśnierz, Wojciech and Litwiniuk (2014) argued that CS and martial arts training provided an outlet for participants to diffuse emotions and relieve tension, thus resulting in decreased level of aggression. Kuśnierz et al. (2014) also found a link between aggressiveness levels being affected by the specificity of the training and instructor qualifications. Vertonghen and Theeboom (2013, 2010), Vertonghen et al. (2012) and Kuśnierz et al. (2014) highlight the importance of considering the type of martial that is being examined.

Like Hishinuma et al.'s (2012) study, Jenkins and Ellis (2011) also focused on combat sports such as boxing and TMA (in the form of tae kwon do). The purpose of this United Kingdom-based study was to evaluate whether combat sports and martial arts in general, has an impact on the participant's criminality, and if so, whether the sports should then be used in offender treatment programs and strategies aimed at crime reduction.

Jenkins and Ellis's (2011) findings noted that participation in CS can distance individuals from nonstructural risk factors in behavioral, community/ social and economic spheres. Jenkins and Ellis's (2011) argued that detachment from risks in the aforementioned areas, "... makes combat sport potentially appropriate for use within interventions aimed at: violent offenders; those who offend in groups; emotionally impulsive offenders; and as a moderator of antisocial behavior" (p. 117). Research has shown that the deterrent effects stemming from informal deterrence (actual or anticipated social sanctions such as disapproval of friends and families) tend to be more effective than other deterrence models such as certainty of arrest or severity of penalties (Akers et al., 2017). Again, Castillo (personal interview, July 14, 2018) proposes that the staff and martial arts instructors at T&D serve as an informal deterrence to the participants in this study.

Unique Nature of This Study

None of the martial arts studies researched to date took place within a structured afterschool program. Basaran (2016) took place within a university. Doria et al. (2009) and Kindzer et al. (2018) conducted observations at a karate tournament. Ziaee et al. (2012) and Lotfian et al. (2011) chose a youth sport club to conduct their research, while

Jenkins and Ellis (2011) conducted theirs in a combat sport gym. Most of the studies took place in a martial arts school/club (Vertonghen & Theeboom, 2014; Vertonghen et al., 2012; Theeboom et al. 2009; Tadese, 2015; Tadese 2016; Tadese, 2017; Steyn & Roux, 2009; Reynes & Lorant, 2004; Kusnierz 2011; Draxler et al. 2010). Some studies took place in public schools (Hishinuma et al., 2012; Twemlow et al., 2008; and Zivin et al., 2001; Lakes & Hoyt, 2004).

More than half of the martial arts related studies referenced in this dissertation were conducted outside of the United States (US), further indicating the need for more of these studies in the US. Of the studies conducted in the US, only a handful of them included a substantial number of minorities (Hishinuma et al., 2012; Twemlow et al., 2008). The children in this study are predominantly minority children (Hispanic) who live in an area designated by TCT (2018) as an area of need, due in part to poverty level and lack of child services in the area. The literature reviewed (Church et al.2014; Akers et al., 2017) clearly points at poverty and lack of social services as a critical risk factor in predicting juvenile violence.

The study that most resembles this dissertation is Twemlow et al. (2008). Twemlow et al. (2008) included minority participants and more than half of the children lived in low-income households. Twemlow et al.'s (2008) study took place in a large city while this study takes place in a large metropolitan area (West Miami-Dade County). The study by Twemlow et al. (2008) took place inside of the elementary schools under the auspices of The Gentle Warrior Program. This proposed dissertation takes place in a martial arts school whose participants are enrolled in a daily afterschool program. The Gentle Warrior Program's curriculum has some similarities to the afterschool program in

this study, apart from frequency. The Gentle Warrior Program consisted of nine sessions over three years. This dissertation examined a martial arts themed afterschool program that operates five times a week for an entire school year, thus constituting another unique component of the study not examined in previous literature; namely, the frequency of sessions.

Basaran (2016) cited the following risk factors that made the youth more susceptible to committing crime, "...domestic violence, leaving home, drug abuse, having individuals in the family that committed crimes, family structure, circle of friends, the way he spends his leisure time, socio-cultural position and education level" (p.2). The children in this study are predominantly minority children who live in an area designated by TCT (2018) as an area of need, due in part to poverty level and lack of child services in the area. The activities in Basaran's (2016) study included judo and taekwondo. These two traditional martial arts are like the martial art found in this study (Kenpo Karate).

Research Questions

The independent variable is Kenpo Karate training. The duration of time would be the ten-month period. The dependent variable is the SEL testing scores for the areas of persistence, self-control, social competence and ability to resolve problems with peers without becoming aggressive.

The purpose of this quasi-experimental, one-group, pretest–posttest design study, was twofold. First, it examined the effects of traditional martial arts training on the social and emotional learning skills of persistence, self-control and social competence of students within a structured afterschool setting. Secondly, it investigated the effects of

traditional martial arts training on the ability to resolve problems with peers without becoming aggressive in these same students.

RQ #1: Does traditional Kenpo Karate training have a significant effect on the SEL skills of persistence, self-control and social competence in elementary school-aged participants, over a ten-month period (Aug.-May)?

HR #1: Traditional Kenpo Karate training has a significant effect on the SEL skills of persistence, self-control and social competence in elementary school-aged participants, over a ten-month period (Aug.-May).

HO #1: Traditional Kenpo Karate training has no significant effect on the SEL skills of persistence, self-control and social competence in elementary school-aged participants, over a ten-month period (Aug.-May).

RQ #2: Does traditional Kenpo Karate training have a significant effect on the ability to resolve problems with peers without becoming aggressive in elementary school-aged participants, over a ten-month period (Aug.-May)?

HR #2: Traditional Kenpo Karate training has a significant effect on the ability to resolve problems with peers without becoming aggressive in elementary school-aged participants, over a ten-month period (Aug.-May).

HO #2: Traditional Kenpo Karate training has no significant effect on the ability to resolve problems with peers without becoming aggressive in elementary school-aged participants, over a ten-month period (Aug.-May).

Chapter 3: Methodology

Participants

The research subjects consisted of 57 predominantly Hispanic students (ages 5-11) enrolled in an afterschool program (T&D) throughout the 2018-19 academic school year. This study used single-stage sampling (This researcher had access to the people in the population and they were sampled directly), since T&D had already given consent to share this data (without sharing the children's personal identifiers).

The nonprobability sampling technique used in the evaluation was purposive sampling, since the students met the needs of this evaluation's objective, design, and target population. Shneerson and Gale (2015) noted that in purposive sampling the issue of relevancy was more important than randomization. The sampling technique could be further specified as criterion sampling, since the participants met a specific criterion (students enrolled in an afterschool program that offers traditional martial arts).

Instrument

The instrument used was a Child Trends (2014) Socio-Emotional Teacher's Survey. It was created from a partnership between the Tauck Family Foundation and Child Trends, a national leader in measuring children's development and well-being (Child Trends, 2014). The survey was created using a plethora of evidenced based source material (Bierman, Coie, Dodge, Foster, Greenberg, Lochman, & Pinderhughes, 2004; Butler-Barnes, 2013; Chamberlain, 1980; CPPRG, 1995; Dahlberg, 2005; Greenberg, McMahon, & Mason, 1994; Hoover-Dempsey & Sandler, 2005; Kendall & Wilcox, 1979; McConnell, 1984; Midgely, 1998; Nicholls, 1989; TABC, 1998; Rorhbeck, Azar, & Wagner, 1991).

The survey is used to measure and quantify self-control, responsibility, attentiveness, prosocial behavior, and mastery orientation in children (Child Trends, 2014). It categorically breaks down the SEL skills into the areas of persistence, self-control, and social competence. According to Child Trends (2014), there are two versions of this survey; namely, a student survey and a teacher's survey. This study used the teacher's survey. The Child Trends (2014) teacher's survey contains several questions related to social competence to include, worked well with peers, resolved problems with peers without becoming aggressive, was thoughtful of the feelings of his/her peers, cooperated with peers without prompting, understood the feelings of his/her own peers and resolved problems with peers on his/her own:

Table 1: Teacher Survey Questions, by Skill

Skill	#	Question	Response Options
Persistence	1	Worked on tasks until they were finished.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the time
Persistence	2	Kept working on an activity that was difficult.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Self-Control	3	Waited in line patiently.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Self-Control	4	Sat still when s/he was supposed to.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Self-Control	5	Waited for what s/he wanted.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Persistence	6	Focused on tasks until they were finished.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	7	Worked well with peers.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	8	Resolved problems with peers without becoming aggressive.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	9	Was thoughtful of the feelings of her/his peers.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	10	Cooperated with peers without prompting.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	11	Understood the feelings of her/his peers.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	12	Resolved problems with peers on her/his own.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time

For RQ #1 this researcher used the Child Trends (2014) instrument (teacher survey) to focus on the SEL skills categories of persistence, self-control, and social competence. For RQ #2 this researcher focused on the teacher's response (based on student observation) to the following question, "Resolved problems with peers without becoming aggressive" (Child Trends, 2014) and their accompanying scores. This SEL testing is conducted at T&D as a pre, mid, and post-test; at the beginning, midway point, and end of the school year (Aug. 2018-May 2019). For the purposes of this study the data from the first test (pre-test) and the last test (post-test), encompassing a ten-month measure, was used.

Huck (2012) advised that whenever an instrument is altered a pilot study should be conducted. Regarding RQ #2, this researcher adhered to this recommendation and conducted a pilot study. Five participant's scores were selected at random and the statistical tests were conducted. Further information regarding the Child Trends (2014) survey can be found in Appendix A.

Proposed Research Design and Methodology

The purpose of this quasi-experimental, one-group, pretest–posttest design study, was twofold. First, it examined the effects of traditional martial arts training on the social and emotional learning skills of persistence, self-control and social competence of students within a structured afterschool setting. Secondly, it investigated the effects of traditional martial arts training on the ability to resolve problems with peers without becoming aggressive in these same students. The research participants were enrolled in T&D's afterschool program throughout the 2018-19 academic school year. During that

time the participants practiced the TMA of Kenpo Karate for five times a week (1-hour daily).

Due to contractual requirements with TCT, T&D is required to administer SEL skills testing. Data from the SEL test does not contain any personal identifiers and/or children's personal information. Parents enrolling their children in T&D's afterschool program have already given consent to this testing. This researcher collected data from tests that were already administered throughout the 2018-2019 school year.

Hishinuma et al. (2012) contended that there is a paucity of research in the area of martial arts and youth violence. This researcher echoes these sentiments and adds additional elements to the discussion. There is a paucity of research regarding martial arts and youth violence related to Hispanic youth. Most of the participants in this study are Hispanic. This is important because violent crime among juveniles disproportionately involves minority youth (Durant et al, 1994; Church et al., 2014, Akers et al., 2017). There is also a lack of research related to non-traditional approaches to social skills training in children, of which martial arts is a part of.

Tremblay et al. (1994) noted that the strongest predictor of youth violence tends to be physical aggression, as reported by parent/teacher/peer observation and/or self-reporting. This study examined the youth center teacher's response (based on student observation) to the following question, "Resolved problems with peers without becoming aggressive" (Child Trends, 2014).

Data Analysis

1. Did test scores improve, worsen, or stay the same for students from pre-test to post-test? This was addressed by conducting a dependent t-test for the SEL

categories of persistence, self-control and social competence. A second dependent t-test was conducted focusing on the ability to resolve problems with peers without becoming aggressive scores.

The dependent t-test is the most appropriate parametric statistical test to use for this comparative analysis because it is used to compare the means between two related groups on the same continuous, dependent variable. The dependent variable in this study is the SEL testing scores for the areas of persistence, self-control, social competence and ability to resolve problems with peers without becoming aggressive. The independent variable is Kenpo Karate training. The software used for this analysis is the IBM SPSS GradPak. In IBM SPSS the dependent t-test is referred to as a paired-samples t-test.

This study compared the mean responses from pre-test to post-test. Descriptive statistics were reported. Then the magnitude of the difference in means between the scores (e.g., small, medium, large) were assessed. If statistical significance was found, an effect size calculation was conducted to test for practical significance.

Chapter 4: Results

Introduction

The purpose of this quasi-experimental, one-group, pretest–posttest design study, was twofold. First, it examined the effects of traditional martial arts training on the social and emotional learning skills of persistence, self-control and social competence of students within a structured afterschool setting. Secondly, it investigated the effects of traditional martial arts training on the ability to resolve problems with peers without becoming aggressive in these same students. The research subjects consist of 57 predominantly Hispanic students (ages 5-11) enrolled in an afterschool program at Tiger and Dragon Youth Center (T&D), throughout the 2018-19 academic school year.

Demographic Characteristics

All but one of the fifty-seven research subjects were Hispanic (one White Non-Hispanic student). Forty of the students lived in poverty, per federal guidelines (USDOH, 2020). Four students were female, and the rest were males. They were enrolled in T&D's afterschool program throughout the 2018-19 academic school year. They were enrolled in grades kindergarten – fifth grade at their local schools.

Table 2. Distribution of students by grade level.

GRADE LEVEL	# OF STUDENTS
Kindergarten	10
First Grade	8
Second Grade	14
Third Grade	11
Fourth Grade	8
Fifth Grade	6

A review of the student's files did not reveal any students who had documented aggressiveness issues prior to the start of the study. A review of the student's IEP's revealed eleven students with pre-existing SEL skill issues/disabilities.

Table 3. Students with pre-existing SEL skill issues/disabilities.

SEL Skill Issue/Disability	# OF STUDENTS
ADHD	5
Anxiety/Depression	1
Autism	1
Intellectual Disability	1
Learning Disability	3

All the students completed the SEL skills pre-test and post-test. Most of the students completed the entire ten-month program. Others either started the program after

August and/or withdrew from the program before May.

Table 4. Distribution of students by completed program time.

Completed Program Time (months)	# OF STUDENTS
10 Months	35
8 Months	1
7 Months	1
6 Months	6
5 Months	2
4 Months	2
3 Months	9
2 Months	1

Data Analysis

This researcher wanted to see if test scores improved, worsened, or stayed the same for students from pre-test to post-test. This was facilitated by conducting a dependent t-test for the SEL categories of persistence, self-control and social competence. A second dependent t-test was conducted focusing on the ability to resolve problems with peers without becoming aggressive scores. The dependent variable in this study was the SEL testing scores for the areas of persistence, self-control, social competence and ability to resolve problems with peers without becoming aggressive. The independent variable was the Kenpo Karate training.

Research Question 1

Does traditional Kenpo Karate training have a significant effect on the SEL skills of persistence, self-control and social competence in elementary school-aged participants, over a ten-month period (Aug.-May)? This was our first research question. Due to the means of the two tests (pre and post-test) and the direction of the t -value, we can conclude that there was a statistically significant improvement in all three testing categories (i.e. persistence, self-control and social competence) following the Kenpo Karate training.

In the area of persistence, the results were as follows: $t(56) = -8.267, p < 0.0001$. Due to the means of the two tests and the direction of the t -value, we can conclude that there was a statistically significant improvement in test scores following the Kenpo Karate training from 2.6895 to 3.3607 ($p < 0.0001$); an improvement of 0.67. The Cohen's $d = -1.09502757$. It is a large effect size, more than 0.8 (large effect).

In the area of self-control, the results were as follows: $t(56) = -11.915, p < 0.0001$. Due to the means of the two tests and the direction of the t -value, we can conclude that there was a statistically significant improvement in test scores following the Kenpo Karate training from 2.7647 to 3.5533 ($p < 0.0001$); an improvement of 0.78. The Cohen's $d = -1.57821005$. It is a large effect size, more than 0.8 (large effect).

In the area of social competence, the results were as follows: $t(56) = -22.8353, p < 0.0001$. Due to the means of the two tests and the direction of the t -value, we can conclude that there was a statistically significant improvement in test scores following the Kenpo Karate training from 2.9114 to 3.9174 ($p < 0.0001$); an improvement of 1.00. The Cohen's $d = -3.02453397$. It is a large effect size, more than 0.8 (large effect).

Table 5. Paired samples test. Paired differences.

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	99% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Persistence Pretest – Persistence Post Test	-.67123	.61298	.08119	-.88772	-.45473	-8.267	56	.000
Pair 2	Self-Control Pretest – Self Control Post Test	-.78860	.49968	.06618	-.96508	-.61211	-11.915	56	.000
Pair 3	Social Competence Pretest – Social Competence Post Test	-1.00596	.33260	.04405	-1.12344	-.88849	-22.835	56	.000

Table 6. Paired samples statistics.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Persistence Pretest	2.6895	57	.56736	.07515
	Persistence Post Test	3.3607	57	.56178	.07441
Pair 2	Self-Control Pretest	2.7647	57	.49278	.06527
	Self-Control Post Test	3.5533	57	.44756	.05928
Pair 3	Social Competence Pretest	2.9114	57	.41160	.05452
	Social Competence Post Test	3.9174	57	.20494	.02715

Table 7. Descriptive Statistics.

Descriptive Statistics						
	N Statistic	Minimum Statistic	Maximum Statistic	Mean		Std. Deviation Statistic
				Statistic	Std. Error	
Persistence Pretest	57	1.00	4.00	2.6895	.07515	.56736
Persistence Post Test	57	2.33	4.00	3.3607	.07441	.56178
Self-Control Pretest	57	1.00	4.00	2.7647	.06527	.49278
Self-Control Post Test	57	2.33	4.00	3.5533	.05928	.44756
Social Competence Pretest	57	1.66	4.00	2.9114	.05452	.41160
Social Competence Post Test	57	3.00	4.00	3.9174	.02715	.20494
Valid N (listwise)	57					

Research Question 2

Does traditional Kenpo Karate training have a significant effect on the ability to resolve problems with peers without becoming aggressive in elementary school-aged participants, over a ten-month period (Aug.-May)? This was our second research question. The results were as follows: $t(56) = -15.783, p < 0.0001$. Due to the means of the two tests and the direction of the t -value, we can conclude that there was a statistically significant improvement in the resolved problems with peers without becoming aggressive test scores, following the Kenpo Karate training from 2.8772 to 3.8421 ($p < 0.0001$); an improvement of 0.96. It is a large effect size, more than 0.8 (large effect). The Cohen's $d = -2.09058607$.

Table 8. Paired samples test. Paired differences.

	Paired Samples Test							
	Mean	Paired Differences		95% Confidence Interval		t	df	Sig. (2-tailed)
		Std. Deviation	Std. Error Mean	Lower	Upper			
Resolved Problems with Peers Without Becoming Aggressive PreTest - Resolved Problems with Peers Without Becoming Aggressive PostTest	-.96491	.46155	.06113	-1.08738	-.84245	-15.783	56	.000

Table 9. Paired samples statistics.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Resolved Problems with Peers Without Becoming Aggressive PreTest	2.8772	57	.46561	.06167
	Resolved Problems with Peers Without Becoming Aggressive PostTest	3.8421	57	.36788	.04873

Table 10. Descriptive statistics.

	Descriptive Statistics					
	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Resolved Problems with Peers Without Becoming Aggressive PreTest	57	1.00	4.00	2.8772	.06167	.46561
Resolved Problems with Peers Without Becoming Aggressive PostTest	57	3.00	4.00	3.8421	.04873	.36788
Valid N (listwise)	57					

Chapter 5: Discussion

Introduction

SEL skills such as persistence, self-control, and social competence play a vital role in the healthy development of children (Child Trends, 2014). Beelman and Losel (2006) noted that deficiencies in these skills can often be a predictor of future criminality and antisocial behavior. A deficit in the SEL skill of social competency, can be seen in the form of aggressiveness. Aggressiveness in juveniles and youth violence are often bedfellows. The literature has shown that the strongest predictor of youth violence tends to be physical aggression, as reported by parent/teacher/peer observation and/or self-reporting (Tremblay, Pihl, Vitaro, & Dobkin, 1994). Despite an overall reduction of juvenile crime, minorities are still disproportionately affected by juvenile violent crime (Durant et al, 1994; Church et al., 2014, Akers et al., 2017).

Beelman and Losel (2006) noted that there have been several approaches related to SEL skills training and reducing aggressiveness in children, to include counseling, psychotherapy, behavioral, cognitive, and cognitive-behavioral treatments. Interestingly enough, martial arts have also been used as a form of intervention. For the last fifty years researchers studying the martial arts have shifted their focus from the influence of martial arts practice on the personality traits of practitioners to the relationship between martial artists and aggression (Vertonghen & Theeboom, 2010). For the last thirty years, most martial arts related studies have focused on youth rather than adults (Vertonghen & Theeboom, 2010). This study reflects the trends in current martial arts research.

The research subjects in this study consisted of 57 predominantly Hispanic students enrolled in an afterschool program at T&D, throughout the 2018-19 academic

school year. This program teaches the traditional martial art of Kenpo Karate. The students participated in the karate class five times a week (1-hour daily). This study examined the effects of traditional martial arts training on the social and emotional learning skills of persistence, self-control and social competence of students within a structured afterschool setting. It also investigated the effects of traditional martial arts training on the ability to resolve problems with peers without becoming aggressive, in these same students.

Summary of Findings

All the SEL skills that were measured (i.e. persistence, self-control and social competence) and the solved problems with peers without becoming aggressive scores, showed marked improvement from pre to post-test. The social competence scores showed the most improvement, while persistence the least. All the Cohen's d results showed a large effect size for every category. Together this suggests that traditional Kenpo Karate training has a significant effect on the SEL skills of persistence, self-control, social competence and the resolution of problems with peers without becoming aggressive, in elementary school-aged participants, over a ten-month period (Aug.-May). The data supports HR #1 and HR#2 and rejects HO #1 and HO#2.

Table 11. Measured improvement and Cohen's d.

SEL Category	Measure of Improvement	Cohen's d
Persistence	.67	-1.09502757.
Self-control	.78	-1.57821005
Social Competence	1.00	-3.02453397
Resolved Problems with Peers Without Becoming Aggressive	.96	-2.09058607

Interpretation of Findings

The findings of this study suggest that traditional Kenpo Karate training had a significant effect on the SEL skills of persistence, self-control, social competence and the ability to resolve problems with peers without becoming aggressive, of the research participants. One expected these results given the wide array of literature highlighting the benefits of traditional martial arts training. Both categories of social competence and ability to resolve problems with peers without becoming aggressive had the highest measures of improvement, 1.00 and .96 respectively. This was also expected, given that the ability to resolve problems with peers without becoming aggressive question was extracted from the social competence category.

What was unexpected centers on the student's participation time in the program. Only 35 of the students completed the entire ten-month program. The remaining 22 students only completed a portion of the program and still showed improvement. This phenomenon is interesting on to itself.

Table 12.

Program Time of Students	# OF
Who Did Not Complete the	STUDENTS
Full 10 months	
3 Months	9
6 Months	6
5 Months	2
4 Months	2
8 Months	1
7 Months	1
2 Months	1

One could theorize that the student's overall participation time in the program (2-10 months) may have mattered less than the frequency of Kenpo Karate classes per week (five times a week). Despite the varying months in the program, while the students were there, they participated in class five times a week. Several studies that have examined afterschool programs have stressed the importance of duration time and frequency (Evans et al., 2011; Gottfredson et al., 2004; Reisner et al., 2004). Evans et al. (2011) recommended a year-round program as opposed to a semester's worth of intervention.

The karate training in this study followed many of the evidenced based principles associated with more traditional approaches to child social skills training, apart from the frequency of training. Karate training in this program was conducted in a group training format and was conducted by martial art professionals. This study possibly hints at the importance of frequency of classes over the duration time in the program.

Context of Findings

This study analyzed the test subject's SEL skills of persistence, self-control, and social competence within a group setting. Child Trends (2014) defined persistence as focusing on a student's attitude and determination to continue striving for a goal despite the challenges and shortcomings that may present themselves. Despite a statistically significant improvement in the persistence test scores (improvement of 0.67), the persistence test score improvement was the lowest of the SEL skill scores. This may have reflected the lack of research associated with persistence and its role in the martial arts. Furthermore, it may hint to the complexity of analyzing persistence.

Child Trends (2014) defined self-control as the student's ability to: "a) control emotions and behavior, b) inhibit negative behavior, c) sustain attention or concentrate on a given task, and d) wait for his or her turn or for what he or she wants" (p. 29). There was a statistically significant improvement in the self-control test scores following the Kenpo Karate training from 2.7647 to 3.5533 ($p < 0.0001$); an improvement of 0.78. These findings are in line with other research. Kusnierz (2011) and Tadese, (2015, 2017) noted that martial arts practices have often been credited with reinforcing positive values such as self-respect, respect to others, and most notably, self-discipline. Lakes and Hoyt (2004) noted significant improvement in the areas of cognitive self-regulation, affective self-regulation, prosocial behavior and classroom conduct for the Tae Kwon Do students they studied.

There is a strong association between self-control and social competence in children (Child Trends, 2014). Child Trends (2014) noted that social competence includes a host of skills like considering other's viewpoints, working well with others in

task related endeavors, resolving problems in a positive manner and behaving in accordance with situational and social norms. There was a statistically significant improvement of 0.95 in the social competence test scores following the Kenpo Karate training.

The findings related to social competence are in line with other research as well. Folino et al. (2014) reported that general exercise had been found to have a positive temporal effect on disruptive behavior exhibited by youth. Zivin et al. (2001) claimed that martial arts served as an effective approach to violence prevention. Others focused on the relationship between martial arts and anger management (Lotfian et al.,2011; Ziaee et al.,2012). Though not a martial arts study, Hanlon et al. (2009) indicated significant effects for academic achievement and behavior for the afterschool program students they studied.

This study also examined the ability to resolve problems with peers without becoming aggressive test scores for the same 57 participants. The second highest measure of improvement (0.96) was found in these scores. In retrospect, it should come as no surprise that the highest measure of improvement correlated with the most published research. Current studies have focused on the relationship between martial artists and aggression (Vertonghen & Theeboom, 2010). A host of studies have shown how martial arts training helped to reduce aggressiveness (Diamond & Lee, 2011; Nosanchuk & MacNeil, 1989; Reynes & Lorant, 2004; Steyn & Roux, 2009; Twemlow, Twemlow, Biggs, Nelson, Vernberg, & Fonagy, 2008; Vertonghen & Theeboom, 2014; Woodward, 2009).

Implications of Findings

Several studies argued that most juvenile crime occurred approximately between 2pm and 6 pm (Newman, Fox, Flynn & Christeson, 2000; Gottfredson, Gerstenblith, Soulé, Womer and Lu, 2004). The students in this study were able to attend T&D's ten-month program that operated five times a week. By attending this program, they were in supervised/organized activities during the critical 2pm – 6 pm time period. Even if the SEL skill scores had not improved, one could still see the value of this program. The value being that the students were not unsupervised and/or out in the streets during the time period where most juvenile crime is committed. Lauer et al. (2006) highlighted the lack of parental supervision and the high rate of teen crime that occurs after school as some of the societal concerns that have led to the growth of afterschool programs in the United States.

Castillo (personal interview, July 14, 2018) adamantly believed that her T&D staff served as an informal deterrence to the students examined in this study. This study's results may help to reinforce her belief. The measured SEL skills of self-control and social competence do reflect manifestations of informal deterrence; namely, controlling emotions and behavior, inhibiting negative behavior, considering other's viewpoints, and behaving in accordance with situational and social norms. Regarding informal deterrence, Akers et al. (2017) noted that perceptions of informal sanctions (i.e. disapproval of friends, one's own conscience and moral commitments) do have deterrent effects. Studies have shown that the deterrent effects stemming from informal deterrence tend to be more effective than other deterrence models such as certainty of arrest or severity of penalties (Green, 1989; Grasmick & Bursik, 1990).

It appears that the SEL skill of persistence can play a positive or negative role in a child's healthy development, contingent upon the context of their behavior. Duncan and Magnuson (2011) argued that persistent antisocial behavior problems in an early education setting was quite predictive of later crime. On the other hand, Peterson and Seligman (2004) defined persistence in children as the "voluntary continuation of a goal-directed action in spite of obstacles, difficulties, or discouragement" (p. 229). Regarding the martial arts, Vertonghen and Theeboom (2013) argued that differences existed in the characteristics and social background of martial artists depending on the type of martial art being practiced. Highlighting the complexity of this research, they cautioned future research into these and other possible mediating factors should be considered when trying to determine social-psychological outcomes of martial arts (Vertonghen & Theeboom, 2013). This study certainly showed the complexity of this research and why further research is necessary.

Limitations of the Study

The Child Trends (2014) survey is currently used locally (Miami-Dade County) at 394 TCT afterschool sites, though none of them is a predominantly martial arts themed afterschool program. None of the martial arts studies researched to date have used this particular survey; however, they have used a host of other surveys (Basaran, 2016; Diamond & Lee, 2011; Dodd & Brown, 2016; Draxler, Ostermann, & Honekamp, 2010; Hishinuma, Umemoto, Nguyen, Chang, & Bautista, 2012; Jenkins & Ellis, 2011; Kusnierz, 2011; Lotfian, Ziaee, Amini, Mansournian, 2011; Reynes & Lorant, 2004; Steyn & Roux, 2009; Tadese, 2016; Theeboom, Knop, & Vertonghen, 2009; Twemlow, Twemlow, Biggs, Nelson, Vernberg, & Fonagy, 2008; Vertonghen & Theeboom, 2010;

Vertonghen, Theeboom, & Cloes, 2012; Vertonghen & Theeboom, 2013; Vertonghen & Theeboom, 2014; Woodward, 2009; Ziaee, Lotfian, Amini, Mansournian, & Memari, 2012).

Edmonds and Kennedy (2016) noted that often, threats to internal validity include history, maturation and selection bias. All three of these were present in this dissertation and seem to plague other martial arts studies as well. Strayhorn and Strayhorn (2009) have critiqued research on the effects of martial arts for its use of involved convenience samples, a singular martial arts intervention specifically tailored for the study, and small sample sizes.

The internal validity threat of history can occur when events outside of the study, effect the study participants. During the examined time period (the 2018-19 academic school year), both Tropical Storm Gordon and Hurricane Michael came close to South Florida, in early September and October 2018 respectively (National Hurricane center, 2020). The stress associated with these storms (i.e. watches, warnings, school closures) may have affected the initial SEL skill scores, particularly for those who took the test after August.

Maturation occurs as a result of a passage of time. SEL skills in this study's participants, may have improved simply because they were maturing in the proposed time period. This may be the case for the 35 students who completed the entire ten-month program.

Regarding selection bias, the one group pretest-posttest design used for this study had no control group and no random assignment. No control group could be assigned since the students participating in the youth center's program were expected to participate

in the martial arts. Random assignment could not be conducted since the sample size was small to begin with.

Threats to external validity and replicability include the interaction of setting and treatment. The setting was very specific. It is a structured afterschool program. None of the martial arts studies researched to date (related to children/youth) took place in such a setting (Bahrami, Movahedi, Mohammad-Marandi, & Sorensen, 2015; Basaran, 2016; Diamond & Lee, 2011; Dodd & Brown, 2016; Doria, Veicsteinas, Limonta, Maggioni, Aschieri, Eusebi, Fano, & Pietrangelo, 2009; Draxler et al., 2010; Hishinuma et al., 2012; Jenkins & Ellis, 2011; Kindzer, Saienko, & Diachenko, 2018; Kusnierz, 2011; Lakes & Hoyt, 2004; Lotfian et al., 2011; Marquez-Castillo, 2013; Movahedi, Bahrami, Marandi, & Abedi, 2013; Reynes & Lorant, 2004; Steyn & Roux, 2009; Strayhorn & Strayhorn, 2009; Tadese, 2015, 2016, 2017; Theeboom et al., 2009; Twemlow et al., 2008; Vertonghen & Theeboom, 2010; Vertonghen et al., 2012; Vertonghen & Theeboom, 2013; Vertonghen & Theeboom, 2014; Woodward, 2009; Ziaee et al., 2012).

The generalizability of these findings could come into question, given that most martial arts instruction does not take place within a structured afterschool testing. Furthermore, of the current 394 TCT sites, not one of them is a predominantly martial arts themed afterschool program. Within this threat to the external validity, one also finds this study's greatest strengths; namely, precedence and innovation. The unique aspect of the setting (within a structured afterschool program) highlights this study's innovative look at martial arts training and its effects within a structured afterschool program.

Another point to consider is that T&D functions as a structured afterschool program. Students average approximately three hours a day in the afterschool program.

Besides the martial arts instruction (one hour per day), students also participate in other daily activities to include homework help, literacy, free play and science classes. These activities make up the remaining two hours. The structured afterschool program (as a whole) may have accounted for the positive results of this study.

Future Research Directions

Only 35 of the 57 students completed the entire ten-month program. The remaining 22 students only completed a portion of the program and still showed improvement. A future qualitative study could take a closer look at these 22 students and analyze why they showed improvement despite not completing the entire program. Since the sample size is small, this prospective qualitative study could use in-depth interviews of the participants.

Several studies have analyzed the effects of afterschool programs with mixed results (Evans et al., 2011; Hanlon et al., 2009; Reisner et al., 2004; Ross et al., 1992). Due in part to the findings of this study, subsequent studies could be conducted at other martial arts schools that have a structured afterschool program and larger enrollment size. This may increase the sample size and allow for different selection methods. One could also look for afterschool programs that offer martial arts as an optional activity. The students that participate in the martial arts classes can be the experimental group, while the students that do not can be the control group.

Of the current 394 TCT sites, not one of them is a predominantly martial arts themed afterschool program. TCT providers are familiar with the Child Trends (2014) survey. A future researcher could take the findings of this study and compare them with other TCT programs in the same local area. Within a three-block radius there are at least

two other TCT afterschool providers that do not involve the martial arts, but have similar student demographics, conduct SEL skills testing and were in operation during the time period examined in this study. This proposed study is probably the strongest of the three studies proposed in this section.

The participants of this study were predominantly minority children (Hispanic) who live in an area of higher poverty levels and lack of child services. The literature reviewed (Church et al.2014; Akers et al., 2017) clearly identified poverty and lack of social services as critical risk factors in predicting juvenile violence. This researcher noted there is a paucity of research regarding martial arts and youth violence related to Hispanic youth. Several studies have noted that a key component of martial arts films and practices, is its proven appeal to minorities; particularly African Americans (Bowman 2013, 2010; Brown 1997; Hunt 2003; Marchetti 2001). Future researchers could broaden our knowledge and help those most in need by continuing to research the martial arts and its potentially positive effects on our youth.

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Appendix

Child Trends (2014) Survey Information

Child Trends (2014) Survey



Table 1: Teacher Survey Questions, by Skill

Skill	#	Question	Response Options
Persistence	1	Worked on tasks until they were finished.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the time
Persistence	2	Kept working on an activity that was difficult.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Self-Control	3	Waited in line patiently.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Self-Control	4	Sat still when s/he was supposed to.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Self-Control	5	Waited for what s/he wanted.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Persistence	6	Focused on tasks until they were finished.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	7	Worked well with peers.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	8	Resolved problems with peers without becoming aggressive.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	9	Was thoughtful of the feelings of her/his peers.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	10	Cooperated with peers without prompting.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	11	Understood the feelings of her/his peers.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	12	Resolved problems with peers on her/his own.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time

Table 2: Student Survey Questions, by Skill

Skill	#	Question	Response Options
Self-Control	1	I can wait in line patiently.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Self-Control	2	I sit still when I'm supposed to.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Self-Control	3	I can wait for my turn to talk in class.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Self-Control	4	I can easily calm down when excited.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Self-Control	5	I calm down quickly when I get upset.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Academic Self-Efficacy	6	I can do even the hardest homework if I try.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Academic Self-Efficacy	7	I can learn the things taught in school.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Academic Self-Efficacy	8	I can figure out difficult homework.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Persistence	9	If I solve a problem wrong the first time, I just keep trying until I get it right.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Persistence	10	When I do badly on a test, I work harder the next time.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Persistence	11	I always work hard to complete my school work.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Mastery Orientation	12	I do my school work because I like to learn new things.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Mastery Orientation	13	I do my school work because I'm interested in it.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me
Mastery Orientation	14	I do my school work because I enjoy it.	1 = Not at all like me; 2 = A little like me 3 = Somewhat like me; 4 = A lot like me

Once the responses are entered according to the numerical values, an average teacher- or student- reported score can be calculated for a student in a particular skill area. **Table 3** (on the following page) provides an example of a teacher's answers to questions about persistence for a fictional student (Student A) the first time the teacher completed the survey for that student (i.e., at baseline). As table 3 indicates, the persistence score based on teacher reports for Student A is 2.33 (out of a maximum of 4.00 and minimum of 1.00).

Table 3: Baseline Teacher-Generated Persistence Score for Student A

Teacher Question for Persistence	Teacher Response at Baseline
Worked on tasks until they were finished.	2
Kept working on an activity that was difficult.	3
Focused on tasks until they were finished.	2
Sum of Teacher Ratings	7
Teacher-Generated Persistence Score³	2.33

Interpreting Students' Scores

Teacher- and student-reported scores for all skills will range from 1.00 to 4.00. The higher the score, the better the student is showing the skill. **Table 4** (below) provides a benchmark guide for interpreting students' scores.

Table 4: Scoring Benchmarks

Scores	Skill Level
1.0-1.99	Low
2.0-2.99	Moderate
3.0-4.0	High

Student A in the above example received a persistence score based on teacher reports of 2.33, which indicates a moderate level of persistence

We recommend that schools/programs calculate scores based on teacher reports for **all students** for skills measured through the teacher survey (self-control, persistence, and social competence). For all **3rd-5th graders**, schools/programs should use this approach to calculate scores based on student reports for skills measured through the student survey (self-control, persistence, mastery orientation, and academic self-efficacy). Scores can be averaged across groups or classrooms within programs (e.g., within classrooms) or at the investee level to get a snapshot of each investee's outcomes for each life skill.

Third-5th grade students will have two sets of scores for self-control and persistence, since these skills are measured on both the teacher and students surveys. Ideally, the teacher and student-reported scores will corroborate each other. However, because self-perceptions of one's behavior can differ from others' perception of one's behavior, it is expected that the teacher and student reports of self-control and persistence may vary. As long as the ratings do not vary a great deal (no more than one whole point), and both teacher and student scores are changing in the same direction (or remaining static), discrepant scores could be used. If the teacher and students scores for a student vary by more than one whole point, we recommend that the teacher score be used since teachers are likely a *more* reliable reporter on these skills.

³ To calculate the average of numerical values for questions 1, 2, & 6, divide the total numerical values for questions 1, 2, & 6 by the number of questions. In this case: $7 \div 3 = 2.33$.

Tables

Table 1: Teacher Survey Questions, by Skill

Skill	#	Question	Response Options
Persistence	1	Worked on tasks until they were finished.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the time
Persistence	2	Kept working on an activity that was difficult.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Self-Control	3	Waited in line patiently.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Self-Control	4	Sat still when s/he was supposed to.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Self-Control	5	Waited for what s/he wanted.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Persistence	6	Focused on tasks until they were finished.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	7	Worked well with peers.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	8	Resolved problems with peers without becoming aggressive.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	9	Was thoughtful of the feelings of her/his peers.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	10	Cooperated with peers without prompting.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	11	Understood the feelings of her/his peers.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time
Social Competence	12	Resolved problems with peers on her/his own.	1= None of the time; 2= A little of the time 3= Most of the time; 4= All of the Time

Table 2. Distribution of students by grade level.

GRADE LEVEL	# OF STUDENTS
Kindergarten	10
First Grade	8
Second Grade	14
Third Grade	11
Fourth Grade	8
Fifth Grade	6

Table 3. Students with pre-existing SEL skill issues/disabilities.

SEL Skill Issue/Disability	# OF STUDENTS
ADHD	5
Anxiety/Depression	1
Autism	1
Intellectual Disability	1
Learning Disability	3

Table 4. Distribution of students by completed program time.

Completed Program Time (months)	# OF STUDENTS
10 Months	35
8 Months	1
7 Months	1
6 Months	6
5 Months	2
4 Months	2
3 Months	9
2 Months	1

Table 5. Paired samples test. Paired differences.

		Paired Samples Test							
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	99% Confidence Interval of the Difference				
Lower	Upper								
Pair 1	Persistence Pretest – Persistence Post Test	-.67123	.61298	.08119	-.88772	-.45473	-8.267	56	.000
Pair 2	Self-Control Pretest – Self Control Post Test	-.78860	.49968	.06618	-.96508	-.61211	-11.915	56	.000
Pair 3	Social Competence Pretest – Social Competence Post Test	-1.00596	.33260	.04405	-1.12344	-.88849	-22.835	56	.000

Table 6. Paired samples statistics.

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Persistence Pretest	2.6895	57	.56736	.07515
	Persistence Post Test	3.3607	57	.56178	.07441
Pair 2	Self-Control Pretest	2.7647	57	.49278	.06527
	Self-Control Post Test	3.5533	57	.44756	.05928
Pair 3	Social Competence Pretest	2.9114	57	.41160	.05452
	Social Competence Post Test	3.9174	57	.20494	.02715

Table 7. Descriptive Statistics.

Descriptive Statistics						
	N	Minimum	Maximum	Mean		Std.
	Statistic	Statistic	Statistic	Statistic	Std. Error	Deviation
						Statistic
Persistence Pretest	57	1.00	4.00	2.6895	.07515	.56736
Persistence Post Test	57	2.33	4.00	3.3607	.07441	.56178
Self-Control Pretest	57	1.00	4.00	2.7647	.06527	.49278
Self-Control Post Test	57	2.33	4.00	3.5533	.05928	.44756
Social Competence Pretest	57	1.66	4.00	2.9114	.05452	.41160
Social Competence Post Test	57	3.00	4.00	3.9174	.02715	.20494
Valid N (listwise)	57					

Table 8. Paired samples test. Paired differences.

	Paired Samples Test							
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper				
Resolved Problems with Peers Without Becoming Aggressive PreTest - Resolved Problems with Peers Without Becoming Aggressive PostTest	-.96491	.46155	.06113	-1.08738	-.84245	-15.783	56	.000

Table 9. Paired samples statistics.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Resolved Problems with Peers Without Becoming Aggressive PreTest	2.8772	57	.46561	.06167
	Resolved Problems with Peers Without Becoming Aggressive PostTest	3.8421	57	.36788	.04873

Table 10. Descriptive statistics.

	Descriptive Statistics					
	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Resolved Problems with Peers Without Becoming Aggressive PreTest	57	1.00	4.00	2.8772	.06167	.46561
Resolved Problems with Peers Without Becoming Aggressive PostTest	57	3.00	4.00	3.8421	.04873	.36788
Valid N (listwise)	57					

Table 11. Measured improvement and Cohen's d.

SEL Category	Measure of Improvement	Cohen's d
Persistence	.67	-1.09502757.
Self-control	.78	-1.57821005
Social Competence	1.00	-3.02453397
Resolved problems with peers without becoming aggressive	.96	-2.09058607

Table 12.

Program Time of Students	# OF
Who Did Not Complete the	STUDENTS
Full 10 months	
3 Months	9
6 Months	6
5 Months	2
4 Months	2
8 Months	1
7 Months	1
2 Months	1