

## **ABSTRACT**

LOHMANN, RAYCHELLE CASSADA. The Effects of a Customized School-based Anger Regulation and Aggression Reduction Intervention (Under the direction of Stanley B. Baker).

Adolescent anger and aggression are increasingly recognized as problems both inside and outside of the academic setting. Effective anger and aggression interventions, particularly customized plans addressing the problematic behavior, are lacking. As a result, many youth who exhibit disruptive anger and aggressive outbursts in school are often subjected to exclusionary discipline practices such as suspension and expulsion. Excluding youth from their education does not solve the problem; these students need to learn constructive and proactive ways to cope and deal with anger-provoking situations. The purpose of the present study was to evaluate the effectiveness of an Anger Regulation and Aggression Reduction (ARAR) intervention among male adolescents. The participants were four male African American public middle school students ages 13 to 14 who had been suspended during the current academic year and attended an afterschool program in a large southeastern school district. Although race and school disciplinary infractions were not part of the present study's inclusion criteria, it is not unusual to have four African American male students who have been suspended in the past year based on the literature pertaining to disciplinary disparity data in the school setting. The present study was designed to answer four research questions pertaining to (a) the intervention's effectiveness in increasing anger regulation, (b) the intervention's effectiveness in decreasing aggression, (c) the intervention's overall effectiveness as rated by each participant, and (d) the intervention's overall effectiveness as rated by the participants and a key staff member at the afterschool program who knew and worked with the participants on a regular basis. Research questions one and two were analyzed using an N=1/ A-B-A withdrawal single-case research design (SCRD). During the first two weeks baseline data were collected on anger and aggression via the Multidimensional

School Anger Inventory-12 (MSAI-12) and the Reactive Proactive Questionnaire (RPQ). Next, participants engaged in the treatment phase which included six individual sessions occurring over a course of four weeks that lasted approximately an hour each. During the treatment phase, participants continued to take MSAI-12 and RPQ. During the withdrawal phase, no treatment was present, but participants continued to take the assessments. Data were analyzed via an R software package, "SSDfor4". Using a multidimensional approach, data were examined visually and quantitatively. In the quantitative method, descriptive statistics and autocorrelations and regression analysis were used to look for trends, effect sizes were calculated, and parametric tests such as ANOVA and Tukey's HSD post-hoc were employed. Based on the results, the customized ARAR intervention was found most effective for decreasing aggression across three participants and moderately effective for increasing anger regulation. The last two research questions addressed social validity and provided validation to the visual and quantitative findings. The participant rating of treatment effectiveness revealed that there was positive treatment effect across all four participants, and the key staff member questionnaire also supported these findings. The overall effectiveness of the intervention was established by replicating the study four times further validating the ARAR intervention. The findings suggest that integrating a customized individual anger and aggression treatment program like the ARAR intervention into the school setting is a promising approach that warrants further investigation.

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The Effects of a Customized School-based Anger Regulation and Aggression Reduction  
Intervention

by  
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## DEDICATION

First and foremost, I would like to thank God for giving me the strength, courage, and endurance to take the road less traveled. Next, I dedicate this dissertation to my beloved husband, best friend and number one advocate, Lee Lohmann, with all my love and gratitude. I also would like to dedicate this piece of work to my two children, Cole and Ambria. Thank you for unselfishly allowing me to chase my dreams, and may you forever know that I will stand right beside you as you chase your own. I love you both dearly. To my family and closest friends, thank you for your encouragement, love, and unwavering support. You walked beside me and beckoned me forward when I was tired and weary. They say that no person is an island, and through this journey, I have learned the true meaning behind that saying. Last, to all my former students who allowed me to walk with them through parts of their own life journey, you taught me how to listen, care and help - *you taught me how to be a counselor*. Without God, family, friends, and my former students, I may not have taken the road less traveled. Therefore, it is with sincere gratitude that I dedicate this piece of work to each of you.

## BIOGRAPHY

Raychelle Cassada Lohmann is a board certified licensed professional counselor, who loves helping others. She earned her Bachelor of Arts in Psychology in 1991 and a Master of Science in Counselor Education in 1998 at North Carolina State University. With over 20 years in the counseling profession, she has devoted much of her time to working with children, adolescents, parents, and educators. Raychelle is passionate about what she does and strives to live out her personal mission statement of "*helping others transform their lives from the inside out.*"

In addition to her educational background, Raychelle is an internationally known author covering several of today's most popular topics. Her books are published in six languages such as Dutch, English, French, Korean, Turkish, and Vietnamese. She is the author of *The Anger Workbook for Teens*, *Staying Cool When You're Steaming Mad*, *The Bullying Workbook for Teens*, *Teen Anxiety* and *The Sexual Trauma Workbook for Teen Girls*.

Raychelle is a regular contributor to media outlets, including *Psychology Today*, *US News and World Report*, *Sharecare* and *Recovery.com*. Her work has been featured in numerous publications, both nationally and internationally including the Associated Press, *Chicago Tribune*, *Seventeen Magazine*, and *Scholastic*. Aside from writing, she is a professional speaker who presents on various topics pertaining to trending adolescent and parenting issues, as well as counseling and topics pertaining to education.

Raychelle believes in making evidence-based practices accessible, practical and relevant. Not only does she tie these elements together in her written works, but she also applies these principles in her counseling practice. In her work as a practitioner, Raychelle provides both brief and long-term therapy working with individuals and groups. Her approach to counseling utilizes

cognitive, behavioral and mindfulness-based therapies to address a variety of behaviors and issues including academic, anger, anxiety, bullying, career, depression, stress management, trauma, social/emotional, and interpersonal problems.

## ACKNOWLEDGMENTS

Throughout my life, there has been a poem by Robert Frost, “*The Road Not Taken*” that resonates deep within me. Perhaps this is because the poem captures many of my core life values. I do see my life as a journey, and throughout its course, I have been blessed to have people who mentored, befriended, and encouraged me along the way. I would like to acknowledge those who have given me countless hours, patience, guidance, support and friendship as I traveled my road.

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hairs. You taught me the value of family and hard work. And now, as a first-generation college student, I have taken those values and applied them to my life. As a result of what you instilled in me, I was able to pursue this coveted achievement. I love you both. And to my wonderful Bible Study group, your prayers, love and cheering from the sidelines encouraged me to reach the finish line. You are true friends in every sense of the word.

And back to Robert Frost, I shall be ending this with a sigh. God knew in advance what I needed to succeed on this path, and He was instrumental in putting together the perfect group of individuals to make sure that I succeeded. I am grateful that each of you made up that team. Taking the road less traveled has truly made all the difference in my life.

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## CHAPTER 1: INTRODUCTION

Anger, outbursts, and aggression are some of the most common reasons for youth mental health referrals in America (Kassinove & Tafrate, 2002; Scherer, Wranik, Sangsue, Tran, & Scherer, 2004; Sukhodolsky, Smith, McCauley, Ibrahim, & Piasecka, 2016). Anger problems first manifest during the middle school and high school years (Charlesworth, 2008). During this developmental period, youth often search for autonomy, identity, and independence (Collins & Steinberg, 2008). In their quest to grow up, some adolescents struggle with strong emotions like anger and resort to using maladaptive behaviors like aggression. The pivotal adolescent years coupled with anger and aggression can create a perfect storm in the context of dysregulated emotional development (Broderick & Jennings, 2012).

Angry youth often lack the healthy coping skills needed to navigate through difficult situations (Ghanizadeh & Haghghi, 2010). As a result, they may experience frequent periods of anger at high levels of intensity that last for long periods of time (Deffenbacher, 2011). Often, youth who exhibit problematic anger show more aggressive and destructive behaviors, resulting in harm to self and others (Deffenbacher, 2011). Therefore, these adolescents should be taught how to cope with life stressors and understand how their anger manifests and how their behavior affects their overall well-being. These skills can be taught by skilled professionals who specifically understand the developmental needs of adolescents.

Unfortunately, angry youth may not actively seek professional counseling services unless they are referred by parents, school personnel, or the court system (Stagman & Cooper, 2010). Though anger interventions, especially those grounded in Cognitive Behavior Therapy (CBT), have shown promising results (Deffenbacher, 2011; Down, Willner, Watts, & Griffiths, 2011; Fives, Kong, Fuller, & DiGiuseppe, 2011), access to these counseling services is lacking

(Stagman & Cooper, 2010). However, the public school system is one place that is equipped with skilled professionals who understand adolescent development and to which most American youth have access.

As youth spend most of their waking hours at school, it seems fitting that the educational system could provide a place for social-emotional learning, particularly in the domain of anger regulation. Not to mention, behavioral problems often manifest themselves within the school day and can be addressed at early onset before they escalate to the point of classroom disruption, or worse, suspension or expulsion (Ghanizadeh & Haghghi, 2010). It is estimated that students who have extreme and pervasive problems with anger and aggression typically make up about 3% to 5% of the school population (Larson, 2008). Though statistically, these adolescents represent a small percentage of the school population, the effects of their anger can be felt across an entire classroom, leading to a school-wide problem. In response to problematic behaviors, schools across the nation have the responsibility of preparing all youth to be responsible citizens, and one way of meeting that challenge is to equip them with the necessary tools to better regulate their emotions (U.S. Department of Education, 2014).

Despite the need for such services, research shows that anger and aggression in schools is a growing concern of parents, educators, and mental health providers (Feindler & Engel, 2011). Some of that anger and aggression may be the result of being treated unfairly in an authoritative oppressive environment (Burt, 2012). From a disciplinary stance, youth face oppressive environments stratified by race and gender, with African American and Latino male students receiving more disciplinary consequences for their disruptive behavior than their White counterparts (Losen & Martinez, 2013).

The disparity is also observed with African American females receiving harsher disciplinary consequences than White females. According to Morris and Perry (2017), African American females were three times as likely as White females to be sent to the office for disruptive behaviors, and African American males were twice as likely as White males to be referred to the office. This problem is not only a national problem, but it is also a local one. According to data obtained from the state of interest, during the years of 2014-2015 and 2015-2016, 70% of school-initiated law enforcement referrals involved African American students, despite the district being comprised of 25% African American students (State data, 2017).

Racial and gender disparity, along with the increase in disruptive behaviors in schools, has led to educational systems evaluating ways to better assist and meet the needs of these angry youth. Differences in gender have also emerged in the literature. Males reportedly show more physical aggression resulting in disciplinary infractions at school (Boman, 2003; Fite, Rubens, Premddy, Raine, & Pardini, 2014; Fives, et al., 2011). Helping school faculty and staff look beyond behavior and into cultural ramifications that may impede performance is an area worthy of more scholarly attention.

Fortunately, professional school counselors can help angry youth while considering cultural and systemic factors (ASCA, 2012a). School counselors are indispensable student advocates. They work hard to help student development in the academic, career and social/emotional domains. These professionals are instrumental in working with angry youth while helping them reach their optimum potential (Burt, Patel, Butler, & Gonzalez, 2013).

Professional school counselors are in a unique position with their cross-cultural training and skills to help these youth explore their racial identity in relation to anger from the context of the various systems (e.g., family, culture, and community) in which they interact (ASCA, 2012a;

Grothaus & Johnson, 2012). Additionally, in the counseling profession, there are models to help guide counselors' inclusive practices. One model is the Multicultural and Social Justice Counseling Competencies (MSJCC; Ratts, Singh, Nassar-McMillan, Butler, & McCullough, 2016), set forth by the American Counseling Association (ACA), which takes "a more contextual approach to working with clients and communities, recognizing that individuals are part of a larger ecosystem" (p. 29). Another model is the American School Counselor Association National Model (ASCA, 2012a) which guides counselors into the implementation of a comprehensive school counseling program. School counselors can draw on models like the MSJCC to help guide their practice and learn essential skills.

The need for anger management interventions is great because dysregulated anger can have detrimental effects that can last well into adulthood (Del Vecchio & O'Leary, 2004; Kassinove & Sukhodolsky, 1995). Adolescents who struggle with dysregulated anger and aggression are prone to more long-term academic, interpersonal, and emotional problems than their non-aggressive peers (Smith, Stephens, Repper, & Kistner, 2016). Dysregulated anger can lead to social, physical, legal, and occupational problems that can severely affect an individual's overall functioning (Del Vecchio & O'Leary, 2004; Kassinove & Sukhodolsky, 1995). Anger and aggression have been linked with more long-term mental health issues such as depression and anxiety (Erwin, Heimberg, Schneider, & Liebowitz, 2003; Swaffer & Hollin, 2001). The risk factors associated with problematic anger and aggression reveal that more needs to be done to help these individuals at an early age.

School counselors with their specialized training can help create empirically-based customizable programs and an inclusive school climate that fosters students' academic, career, and social/emotional development while promoting healthy behaviors (ASCA, 2012a, 2014a,

2014b). There is a great need for personalized anger intervention, but the scholarly literature supporting such approaches is lacking.

### **Statement of the Problem**

During their developmental years, youth spend a substantial amount of time at school, which is the primary context for their social and emotional development (Daunic et al., 2012). Within this setting, students are exposed to complex and sometimes stressful social interactions leading to interpersonal conflicts that might provoke dysregulated emotions like anger. Some youth lack the skills to cope with anger, and as a result, resort to using inappropriate coping strategies, like aggression (Calvete & Orue, 2012; Fives, et al., 2011). Adolescent dysregulated anger and aggression remain among the top concerns of parents, educators, and mental health providers (Feindler & Engel, 2011).

From an educator's perspective, it is important to recognize that anger is a normal human emotion, but when students experience it chronically and intensely, they are at an increased risk of academic difficulties (Furlong, et al., 2013). A more developed understanding of school-related anger could improve researchers' and counselors' awareness of the contributing factors that lead to the emotion, resulting in refined prevention and intervention efforts. These driven efforts could improve the overall quality of students' academic experience and emotional well-being (Furlong et al., 2013).

To support the need for such programs, the U.S. Department of Education (2014) called for academic institutions to “foster positive school climates [which] can help to engage all students in learning by preventing problem behaviors and intervening effectively to support struggling and at-risk students” (p. 2). Mandates for educational institutions to address problematic behavior have increased recognition by school officials to address students' social

and emotional development by implementing skills specific interventions like anger management (Grunbaum et al., 2004; Kuhn, Ebert, Gracey, Chapman, & Epstein, 2015). Along with decreasing anger, the purpose of such interventions was to help school personnel identify and provide interventions to students who struggle with aggression in the school setting (Kellner, Bry, & Salvador, 2008). As a result, schools have adopted varying levels of interventions, including primary, secondary, and tertiary, to address students' specific needs (Kuhn et al., 2015).

According to Kuhn, et al. (2015), primary-level interventions include preventative and proactive strategies that identify behaviors before they become problematic. These programs are often delivered at a school-wide level, so all students learn the skills. Secondary-level interventions focus on addressing targeted behaviors like anger before they become severe and are often delivered at the classroom or group level. Tertiary-level interventions are more individualized and aimed at youth who display more intense and frequent problematic behaviors (Kuhn et al., 2015). The present study uses a tertiary level approach. In this approach, students learn specific skills to address their individual needs. Though the literature specifies the need for tertiary interventions, due to time constraints and caseloads, they are not frequently employed in the school setting (Kuhn et al., 2015, Woods & Domina, 2014).

Additionally, in literature reviews of various child-, parent-, and family-level interventions, specific guidance about which interventions work for which adolescents is lacking (Kuhn et al., 2015). In general, the goals of anger interventions include modifying adolescents' social information processing problems, increasing skills related to assertive versus aggressive communication, and gaining a better understanding about thoughts, feelings and behaviors (Crick & Dodge, 1994; Down, et al., 2011; Fives, et al., 2011). Unfortunately, much of the



literature focuses on utilizing these programs in a clinical setting (Kuhn, et al., 2015), but the structure of the individual service components makes it possible to implement them in other settings with adolescents such as in school (Burt, Lewis, & Patel, 2010; Powell, et al., 2011; Woltering & Shi 2016).

In an effort to reduce anger and aggression, many schools have implemented remediation strategies, such as anger management programs, to deter aggressive behaviors, but many of these programs are offered in a school-wide (i.e., primary level) or group counseling format (i.e., secondary level) (Burt, et al., 2010; Grunbaum et al., 2004; McCarthy, Van Horne, Calfa, Lambert, & Guzman, 2010). To begin to help angry youth, it has been suggested that schools understand the interplay between anger and aggression, precipitating factors, and healthy ways to deter outbursts (Fives, et al., 2011). Since schools are faced with the challenging task of decreasing the frequency of disruptive behaviors, they are well-positioned resources to help a significant number of youth with social-emotional problems (Wilson & Lipsey, 2007).

Despite previous attempts to develop comprehensive anger management programs, helping angry and aggressive adolescents is no easy task, in part because most of the programs described in the literature address either school-wide programs or group interventions targeting several students at once (Barnes, Smith, & Miller, 2014; Burt, et al., 2010; Burt, et al., 2013; Kuhn, et al., 2015). Anger management, however, cannot be addressed as a one-size-fits-all emotion because not everyone fits the same mold. Some youth may harbor pent-up anger, and others may express it aggressively, and both need to be addressed differently. Also, subscribing to a specific curriculum may account for cultural differences. These are important factors because studies show that a disproportionate number of students who get referred for services are

male youth of color (Losen & Martinez, 2013). To help students with problematic anger, counselors need to take individual elements into account.

A comprehensive picture of treating anger begins with a multimethod assessment including pre- and post-self-report measures relevant to the anger management objectives, self-monitoring throughout the intervention, and ratings by personnel who know and interact with the youth in the systemic setting (Barnes, et al., 2014; Feindler & Engel, 2011). Studies have shown that when students learn effective anger management coping skills, their scholastic performance improves (Burt, Patel, & Lewis, 2012; Kuhn, et al., 2015). Therefore, it is important for schools to address social emotional development and implement interventions based on the individualized behavioral needs of students.

There are benefits to supporting behavioral programs in schools, but the literature examining such interventions is lacking. Although anger is a primary emotion, there has been far less research into its measurement compared to other emotions such as sadness and fear (DiGiuseppe & Tafrate, 2007). This lack of research is especially surprising considering the many negative correlates linked to anger, including strained interpersonal relationships, poor health, increased aggression, and low school achievement (Furlong & Smith, 1994). Additionally, aggression can occur in conjunction with anger leading to more problematic behaviors. Aggressive adolescents place an excessive strain on their families and schools and on correctional and mental health systems (Smith et al., 2016). Knowing this information helps support the need for individualized adolescent anger regulation and aggression reduction interventions.

To address the need for anger and aggression interventions, the present study employed a single-case research design to examine the effects of an anger intervention with adolescent males

enrolled in an afterschool program that promotes social and emotional development as part of the organizational core principles. It is hoped that professional counselors working with youth, can utilize the information gleaned from this study to create an individualized intervention that taps into various dimensions of anger (e.g., affective, behavioral and cognitive) and address the different types of aggression (e.g., proactive, reactive and total aggression scores).

### **Purpose of the Study**

According to Feindler and Engel (2011), adolescents who show frequent emotional dysregulation have poor problem-solving skills and may benefit from an anger management intervention. Research findings have shown that adolescent males are typically more prone to dysregulated anger and aggression (Boman, 2003; Fite, et al., 2014; Fives, et al., 2011). Therefore, the purpose of this study was to implement and evaluate the effectiveness of customized anger regulation and aggression reduction (ARAR) intervention for male adolescents. An ABA single-case research design (SCRD) was used to investigate the effects of the intervention (Kazdin, 2016). The SCRД is often employed to demonstrate experimental control within a single-case while rigorously evaluating an action-based intervention with one or a small number of cases (Kazdin, 2011). The SCRД “offers counseling practitioners and researchers a practical and viable method for evaluating the effectiveness of interventions that target behavior, emotions, personal characteristics, and other counseling-related constructs of interest” (Kazdin, 2011, p. 394).

The present study used an SCRД to evaluate the effectiveness of a 6-session Anger Regulation and Aggression Reduction (ARAR) intervention with male adolescents. Cognitive Behavioral Theories, like Relational Frame Theory (Hayes, Barnes-Holmes, & Roche, 2001) was incorporated into the program, with specific techniques taken from Acceptance and Commitment

Therapy (Hayes, 2005; Hayes, 2008). Additionally, theoretical tenets from the Social Information Processing model (Crick & Dodge, 1994) were used to develop the ARAR framework. The intervention framework was created, and the individualized interventions were implemented by the counselor/investigator.

It was hoped that the ARAR intervention would assist youth struggling with dysregulated anger and aggressive behaviors by specifically targeting affective, behavioral, and cognitive components of anger coupled with aggressive behaviors such as proactive, reactive, and total aggression. A secondary hope was that a similar time-limited intervention could be utilized in settings that promote the academic and social/emotional development of students. The present study's framework pulled from the American School Counselor Association National Model (ASCA, 2012a) and the MSJCC (Ratts, et al., 2016); both models complement the professional school counselor's role.

### **Rationale for the Study**

Burt et al. (2010) posited that effective anger management interventions serve two primary purposes. First, they reduce excessive anger. Second, they provide counselors with a means for identifying students whose anger hinders their functioning and develop ways to support their personal and social development (Burt, et al., 2010). Excessive anger disrupts social learning and is detrimental to classroom performance (Kellner et al., 2008).

Correspondingly, Burt et al. (2012) suggested anger has adverse academic effects that negatively impact the overall school environment. To respond to the need for more advanced anger interventions, the U.S. Department of Education (2014) recommended schools implement evidence-based strategies to promote safe schools, including the use of tiered supports for differentiating students' needs and interventions, but research examining the efficacy of

individualized interventions is lacking (Burt, et al., 2010; Kellner et al., 2008; Kuhn, et al., 2015).

According to Kellner et al. (2008), very few studies have explored the effect of accountability on anger-related aggressive behaviors. Furthermore, Kellner et al. (2008) stated that researchers need to look at how angry students can generalize positive behaviors learned in interventions to other settings. To address the need to help angry youth, this study focused on a tertiary intervention that was tailored to fit the unique needs of a sample of male students that were identified as presenting dysregulated anger and aggression. Little empirical research has explored the effects of tertiary interventions (Kuhn, et al., 2015).

With few single-case research designs on anger and aggression in the current literature, researchers are left with primary and secondary interventions that use experimental design methods. It is believed that an individualized program that incorporates cognitive behavioral, social cognitive and multicultural components may produce more fruitful results than programs that attempt to teach anger management via an everyone-fits-the-same-model approach. The present study provided an ARAR framework for counselors and researchers to replicate and contribute to the scarce amount of SCRD research.

### **Research Questions**

Overall school discipline infractions increase significantly between mid-childhood and late adolescence (Losen & Martinez, 2013), and this increase appears to be related to problems with self-regulation and behavioral management (Woltering, 2016). Thus, informed by cultural, social learning and cognitive behavioral framework, the present study addressed the following research questions:

1. What effect does the customized ARAR intervention have on adolescent anger across the treatment and withdrawal phases? Specific sub-questions to be addressed included:
  - 1a. Do participants' self-reports and self-monitoring indicate a change in cognitive components of anger?
  - 1b. Do participants' self-reports and self-monitoring indicate a change in behavioral components of anger?
  - 1c. Do participants' self-reports and self-monitoring indicate a change in affective components of anger?
2. What effect does the customized ARAR intervention have on the aggression of participants across the treatment and withdrawal phases? Specific sub-questions to be addressed include:
  - 2a. Do participants' self-reports and self-monitoring indicate a change in proactive aggression?
  - 2b. Do participants' self-reports and self-monitoring indicate a change in reactive aggression?
  - 2c. Do participants' self-reports and self-monitoring indicate a change in total aggression (both proactive and reactive combined)?
3. How did the participants rate the social validity of the interventions?
4. How did the key staff member rate the effectiveness of the interventions?

### **Definition of Terms**

The following terms apply to the present study.

1. **Anger** - is best understood as a complex multidimensional emotional process that can embody distressing cognitions and affect, as well as triggers, physiological reactions,

expressions, and consequences (Schieman, 2003). Novaco (2000) defined anger as “a negatively toned emotion, subjectively experienced as an aroused state of antagonism toward someone or something perceived to be a source of an aversive event” (p. 170).

- a. **Components of anger:** Anger has three primary components affective (anger), cognitive (hostility), and behavioral (aggression) (A-H-A; Spielberger, Reiser, & Sydeman, 1995). The affective component is the strength of emotional responses toward anger provoking situations. The behavioral component consists of coping mechanisms which are used for expressing anger. The cognitive component or hostility is made up of negative beliefs and the rumination on hostile thoughts which can lead to more intense anger episodes (Boman, 2003). For the purposes of this study, the core A-H-A (affective (anger), cognitive (hostility), and behavioral (aggression)) components were measured using the Multidimensional School Anger Inventory (MSAI; Smith, Furlong, Bates, & Laughlin, 1998). These components were identified on the MSAI as anger experience, hostility, and anger expression (destructive expression and positive coping) (Smith, et al., 1998).
- b. **Dysregulated anger:** Dysregulated anger is an emotional response that is poorly modulated, in this case, anger, which in turn can disrupt or interfere with the daily functioning and are characterized by anger reactions that are more frequent and intense than normal (Jaworska et al., 2013). Dysregulated anger, particularly when it results in proactive and reactive aggressive behaviors, impairs psychosocial and interpersonal functioning (Evans, McHugh, Hopwood, & Watt, 2003).

2. **Aggression** - has been defined in a myriad of ways, but one of the most widely accepted definitions is Bandura's (1978): "Aggression is generally defined as behavior that results in personal injury and physical destruction. Not all injurious and destructive acts are judged aggressive, however. Whether injurious behavior will be perceived as aggressive or not depends on subjective judgments of intentions and causality. The greater the attribution of personal responsibility and injurious intent to the harm-doer, the higher the likelihood that the behavior will be judged as aggressive" (p.12). Kenneth Dodge and colleagues (e.g., Crick & Dodge, 1994) expounded upon this definition and identified two types of adolescent aggression, proactive and reactive. Total aggression was obtained by summing both reactive and proactive scores together. Aggression was measured using the Reactive-Proactive Aggression Questionnaire (RPQ; Raine et al., 2006).
  - a. **Proactive aggression:** Participants who engage in proactive aggressive behaviors do so to obtain some desired outcome. It is the deliberate unprovoked, behavior intended influence or coerce a peer (Crick & Dodge, 1996; Dodge & Coie, 1987). Examples include harassing or hitting a peer to gain the respect of a peer group.
  - b. **Reactive aggression:** Students who engage in reactive aggression are responding to perceived threats. Reactive aggression is the defensive, revengeful response to a perceived prodding from a peer leading to retaliation. Youth with anger management problems who display reactive aggression appear to be short-tempered, are likely to misinterpret neutral situations as being hostile and tend to overreact to minor provocations (Crick & Dodge, 1996; Dodge & Coie, 1987).
3. **Anger-Management** - According to Thomas (2001), an anger-management intervention creates the potential for behavior change by increasing knowledge, providing new



perspectives, and teaching specific strategies that can be learned and practiced by participants to cope with and manage problematic anger.

4. **Self-monitoring** - involves the systematic observing and recording of target behaviors, such as a client's affective or emotional response to anger, cognition or thoughts associated with anger and behaviors or actions related to anger. Within a cognitive behavioral paradigm, students can use self-monitoring to help identify the link between their thoughts and emotions (Cohen, Edmunds, Brodman, Benjamin, & Kendall, 2013; Jarrett & Nelson, 1987). In this study, students were asked to track the occurrences of the behaviors as a part of a functional analysis. Self-monitoring was assigned as homework to aid in designing a collaborative intervention with the adolescent (Tee & Kazantzis, 2011), and through self-reported assessments.
5. **Customized Interventions** - Customized Anger Regulation and Aggression Reduction (ARAR) plans are personalized interventions tailored to adolescents who struggle with dysregulated anger. Each ARAR plan's framework addressed the cognitive, affective, and behavioral components of anger (Smith, et al., 1998; Spielberger, et al., 1995) as well as proactive and reactive aggression (Crick & Dodge, 1996; Dodge & Coie, 1987). Although the ARAR framework was similar for all participants, the individual goals and plans were specifically tailored to each participant based on the identified assessment areas of need.

## **CHAPTER 2: LITERATURE REVIEW**

This literature review covers factors associated with adolescent anger and aggression. More specifically, the literature review examines interventions deemed empirically effective in working with youth who exhibit problematic anger. Though there are few single-case research designs (SCRD) in the counseling literature (Lenz, 2015; Ray, 2015) exploring the effectiveness of anger and aggression interventions, there are many group treatment comparison interventions (Down, et al., 2011; Fives, et al., 2011; Luciano, et al., 2011). Drawing from empirically-based group designs can help establish more non-clinical tertiary treatment approaches. The goal of the present study was to examine the effects of customized anger regulation and aggression reduction individualized counseling intervention for adolescent males.

The literature review contains reflections on practitioner models, culture, systemic factors, anger and aggression theories, and implications for future research to improve the challenge counselors face to help youth develop social/emotional skills while supporting academic success. The literature review is presented in the following order: (a) perspectives on anger and aggression; (b) cultural factors affecting anger and aggression and the Multicultural Social Justice Counseling Competency Model; (c) systemic factors within the school setting and the American School Counselor Association National Model and Standards; (d) empirically-based anger and aggression interventions; (e) selected theoretical frameworks, (Cognitive Behavioral Theory, Relational Frame Theory utilizing Acceptance and Commitment Therapy; and Social Information Processing Theory; and (f) a recapitulation of the material.

### **Perspectives on Anger and Aggression**

To understand how anger, and aggression, interact with one another, it is imperative to examine the differences and similarities between both constructs. Conceptualizing the interplay

between anger and aggression is essential to understand the scope of problematic behaviors. Without a clear understanding of the variables, it is difficult to design an intervention that addresses both the emotion and the target behavior.

To begin to understand the scope of anger, it is important to look at the construct in a broader context. First, anger is one of the most frequent daily emotional experiences (Scherer, et al., 2004). Research spanning over 75 years suggests people become mildly to moderately angry several times a day to several times a week (Kassinove & Sukhodolsky, 1995). Given this information, it is no surprise that anger problems are a central focus of counseling interventions (Kassinove & Tafrate, 2002). The data are a continual reminder that counselors have a professional obligation to develop and implement programs to assist adolescents with anger as it can affect academic success and social/emotional functioning.

Unfortunately, it can be a daunting task to narrow down and pinpoint the scope of anger, in part because anger has been explained in a myriad of ways, both empirically and practically. Kassinove and Sukhodolsky (1995) defined anger as a negative, internal feeling state associated with specific cognitive and perceptual distortions and deficiencies, subjective labeling, physiological changes, and action tendencies. To expound upon this definition, Kerr and Schneider (2008) defined anger as a subjective emotional state that varies in frequency, intensity, duration, and can be directed inward (anger-in) or outward (anger-out) pending the individual's response style. Anger often involves a person's affect, cognitions about a frustrating or threatening event that results in a behavioral response (Kerr & Schneider, 2008). Anger has three primary components: (a) The affective component of anger, often referred to as the anger experience, addresses the power in the emotional responses toward some anger provoking situations (Boman, 2003); (b) The behavioral component refers to proactive or destructive

coping skills used to express anger. (c) The cognitive component reflects the types of irrational beliefs or hostility that people have about their environment and their negative perceptions of others (Boman, 2003).

Often it is the behavioral reaction of aggression that can lead to problematic behaviors (Berkowitz, 2012). Aggression to anger-provoking events can be thought of as a motor behavior with the intent to harm (Deffenbacher, Demm, & Brandon, 1986). There are many definitions of aggression in the literature, but most consistently agree that it is a set of behaviors that has an aversive and intrusive effect on others (Cavell, 2008). This definition aligns with Bandura's (1978) definition in which aggression is "defined as behavior that results in personal injury and physical destruction. Not all injurious and destructive acts are judged aggressive, however. Whether injurious behavior will be perceived as aggressive or not depends on subjective judgments of intentions and causality" (p.12). Due to the intent to harm, aggression research has been strongly correlated with delinquency and disruptive behaviors (Reef, Donker, Van Meurs, Verhulst, & Van Der Ende, 2011). Additionally, aggression has been linked to disorders, such as conduct disorder, attention deficit hyperactivity disorder, substance abuse, anxiety, depression and other mental health conditions (Connor, Steingard, Cunningham, Anderson, & Melloni, 2003; Birkley & Eckhardt, 2015).

In the literature, aggression frequently gets delineated into two distinct parts: verbal and physical (Furlong & Smith, 1994). In the Social Information Processing (SIP) model, Crick and Dodge (1996) differentiated between two types of aggression: proactive and reactive aggression. Proactive aggression draws from Bandura's social learning theory and is described as a deliberate behavior aimed at obtaining the desired goal (Crick & Dodge, 1996). Reactive aggression is described as an angry response to a perceived negative interaction (Crick & Dodge,

1996). "According to social information-processing models, children's social behavior is a function of sequential steps of processing, including encoding of social cues, clarification of goals, response access or construction, response decision, and behavior enactment" (Crick & Dodge, 1996, p. 993). Overall, individuals who behave aggressively often engage in the impulsive, automatic processing of overwhelming affective experience (Crick & Dodge, 1994; Feindler & Baker, 2004).

Although anger and aggression have been linked with one another, it is important to separate the two, as not all angry students behave aggressively and not all aggressive students are angry. To help further define aggression, Coie and Dodge (1998) reviewed theoretical and empirical literature on the construct and concluded:

an environmental variable will influence human aggressive behavior if it affects one or more of three mental processes: (a) the perception of threat and experience of irritation or fear; (b) the accessibility of aggressive responses in one's memorial repertoire; and (c) the evaluation that aggression will lead to desirable positive consequences. (p. 795)

In this respect, aggression draws from the cognitive and affective components of anger and can lead to a behavior disruption that can adversely interfere with the adolescent's well-being. Unfortunately, if anger and aggression are coupled together, the aggressive behavior often becomes the focus of attention, and the anger does not get adequately addressed. As a result, youth do not learn the necessary skills to cope with dysregulated anger and instead learn specific techniques to reduce aggression. Therefore, the most immediate need becomes the foci of attention, neglecting the anger that often precipitates the aggressive behavior.

Anger and aggression do not fit into a one size fits all category, as there are often systemic and cultural factors that contribute to the emotional and behavioral responses of

individuals. So, just as anger can be detrimental, it can also serve as a means of justice and inspiration. Not all anger is maladaptive, as many good social justice movements have come out of anger. If used constructively, anger can serve as a moving force of positive change. When used negatively, anger can tear apart and destroy relationships and lives.

When anger starts to adversely affect a student's social/emotional development and impede academic performance, it is considered dysregulated. Coping with anger and aggression does not mean restraining oneself from feeling or reacting. Instead, coping means exercising a deep understanding of how and why those feelings exist. The ability to regulate anger by applying various techniques may be associated with reduced aggression and may lead to emotional regulation (Mauss, Cook, Cheng & Gross, 2007). Therefore, the benefits of effective anger and aggression counseling could support healthy coping skills that are carried forth throughout the lifespan.

### **Cultural Factors Affecting Students**

Culture has been found to influence how anger is experienced and expressed (Boman, Mergler, Furlong, & Caltabiano, 2014; Greif-Green, Furlong, & Astor, 2008). Matsumoto, Yoo, and Chung (2010), for example, explained how different cultural rules impact how one should manage their anger. One study examining cross-cultural differences in anger indicated that individuals from the United Kingdom were more likely to report direct aggression in response to anger arousal; whereas, participants from Hong Kong were more likely to report displaced aggression (Redford, 1999). Another study that compared children from the United States and two Nepalese tribes showed that American and Brahman children were more likely to agree that anger was a feasible response to a frustrating event; whereas, Tamang children were more likely to say that shame should be associated with feeling frustrated (Cole, Tamang, & Shrestha, 2006).

These studies highlight the importance of how cultural influences can effect emotional development.

Culture is not the only influence on anger and aggression. According to the literature, gender is also affected by what are deemed acceptable behaviors for females and males. One of the most pronounced gender differences in child development literature is that boys display higher levels of aggressive behavior than females (Endendijk et al., 2017). According to Fives et al. (2011), males and females both displayed physical aggression, but males were more physical with their aggression compared to females. Previously, it was believed that males experienced anger differently from females, but research has failed to consistently confirm that notion (Archer, 2004). Rather than anger being experienced differently, Fives et al. (2011) found that stereotypes in how males and females respond to anger affect gender perceptions. Therefore, the expectations of how males and females should display aggression seem to be a socially constructed concept.

In the Fives et al. (2011) study, peers rated levels of aggression and perceived males as being more aggressive than females. The study also showed boys were more likely to resort to physical aggression when they were angry, and females resorted to more indirect forms of aggression. This finding supports past research that shows males display higher levels of direct aggression than females (Bongers, Koot, Van Der Ende, & Verhulst, 2004; Hyde 2005; Martino, Ellickson, Klein, McCaffrey, & Orlando Edelen, 2008). One noteworthy finding of the study was that across genders, as anger increased, so did aggression. Though there may be minimal difference in the anger experience, there does appear to be substantial differences in how males present more direct aggression than females.

Based on the literature, cultural perceptions of anger and aggression should be integral components of any individualized intervention. Multicultural experiences are believed to be beneficial to youth, both academically and interpersonally (Chang & Le, 2010) and are, therefore, essential in developing a program that meets the diverse needs of students. As schools become more diverse, personnel need to become more culturally competent to meet the ever-changing needs of the student body. According to data from the National Center for Education Statistics, by 2023 America's schools will likely be substantially more culturally diverse than they are currently, and they will serve more students who come from Hispanic, Asian or mixed-race backgrounds (Snyder, de Brey, & Dillow, 2016). By 2025, the U.S. Census Bureau projects America's population to be 58 % white, compared to 62 % white in 2015 and by 2060, the bureau projects the population will be 44 % white, indicating significant cultural changes in the nation (Colby & Ortman, 2015).

Though the public school population is becoming more diversified, the teaching occupation is not. During the 2011-2012 school year, according to the National Center for Education Statistics, over 80 % of classroom teachers identified as white, and it is projected that this is unlikely to change significantly by 2025 (Snyder, et al., 2016). Despite all the cultural changes within the student population, schools have not adapted to these changes as evidenced by the data on racial disciplinary disparity within the school system.

### **Disciplinary Disparity in Schools**

Racial disciplinary disparities have been found at the national, state, and local level. Data using a variety of measures at all school levels and typologies (e.g., elementary vs. secondary; rural and urban) and documented in both peer-reviewed journals (Bradshaw, Mitchell, O'Brennan, & Leaf, 2010; Eitle & Eitle, 2004; Skiba, et al., 2011) and advocacy reports (e.g.,



Advancement Project/Civil Rights Project, 2000; Fabelo et al., 2011) highlight disciplinary disparity in the U.S. public education system. Disproportionately, African American youth receive harsher disciplinary consequences than their white counterparts. Children of diversity have received substantially more disciplinary referrals (Bradshaw, et al., 2010; Skiba, et al., 2011), suspensions, expulsions (Eitle & Eitle, 2004; Gregory & Weinstein, 2008), school arrests, (Theriot, 2009) and served more severe disciplinary consequences for similar infractions as their white counterparts (Skiba, et al., 2011). Disparities also exist for other ethnic groups such as Native American and Latinos (Losen & Martinez, 2013).

Data suggest that punishing youth through suspension is not the remedy for problematic behavior, and it can have adverse effects on their academic performance. Muscott, Mann, and LeBrun (2008) reported that on average, disciplinary office referrals result in 15–45 minutes of lost instructional time for students, teachers, and school administrators. Thus, there is a national consensus that rather than students missing class time, there needs to be a more proactive and preventive approach to handling problematic behaviors. According to the Discipline Disparities Research-to-Practice Collaborative, a national consortium of researchers, educators, advocates and policy analysts, schools should design interventions based on cultural awareness and equity (Gregory, Bell, & Pollock, 2016), policy (Carter, Fine, & Russell, 2014), and research (Skiba, et al., 2011). Though large numbers of students from every racial group are suspended each year, the disparities between groups are profound (Losen & Martinez, 2013). Rather than schools resorting to suspending youth with behavioral problems, there should be specific interventions in place to help them learn tools to handle life stress. Professional school counselors can be proactive agents of change by delivering individualized interventions to help equip youth with coping tools to manage behavior.

## **Multicultural Competence of School Counselors**

A part of the school counselor's evolving and expanding role is to address educational and relational inequities within the student population (Burt, et al., 2010). According to the American School Counseling Association (2012a), professional school counselors help create a school climate that promotes cultural diversity and ensures that methods of instruction are inclusive within the school setting. School counselors must be culturally competent and implement services that address issues of power, privilege, and oppression and understand the intersectionality of each student (Ratts, et al., 2016). Fortunately, there is a model that counselors can draw upon to help them gauge and work through their personal cultural development and their student's development: the Multicultural Social Justice Counseling Competency (MSJCC; Ratts et al., 2016). The MSJCC can serve as a tool to help counselors develop individualized anger and aggression interventions like the one used in the present study.

### **MSJCC Framework**

The MSJCC challenges the school counseling profession to see students' issues from a cultural and contextual framework. There is a growing consensus among counseling scholars and practitioners that multicultural competence is a central concern in working with diverse student populations. School counselors need to be aware of their own worldviews and those of their clients. Cultural perspectives should be addressed in the counseling relationship and factored into designing an individualized intervention.

Overall, the MSJCC (Ratts, et al., 2016) is made up of four quadrants that highlight the intersection of counselor and client identities, the dynamics of power, privilege, and oppression that influence relationship between both client and counselor (Ratts, et al., 2016). The developmental domains that build up to multicultural and social justice competence include: (a)

counselor self-awareness, (b) client worldview, (c) counseling relationship, and (d) counseling and advocacy interventions. The first three areas of the framework include the competencies of attitudes and beliefs, knowledge, skills, and action (Ratts, et al., 2016). The MSJCC reflects how the counselor and client both bring eclectic worldviews, privileged and marginalized statuses, and cultural values, beliefs, and biases into the counseling relationship (Ratts, et al., 2016).

Being culturally competent is extremely important because as Sue, Rasheed and Rasheed (2015) noted “certain interventions may represent cultural oppression and may reflect primarily a Eurocentric worldview that may do great harm to culturally diverse clients and their communities” (p. XV). To be culturally competent, counselors must be aware of their personal and professional influences and biases and begin to develop intervention strategies that are inclusive of the client’s cultural needs (Sue et al., 2015). In addition to cultural considerations, counselors also need to account for systemic issues affecting their students.

### **Systemic Factors Affecting Students**

The adolescent developmental period coupled with anger can create a perfect storm in the context of dysregulated emotional development (Broderick & Jennings, 2012). Since adolescents spend most of their waking hours at school, it seems fitting that schools provide services to help youth with emotional regulation. Not only would such services benefit students, they would also benefit the school.

Research suggests angry youth significantly influence peers in schools (Burt, et al., 2012). According to Burt, et al. (2012), as the number of students with problematic anger increases, academic achievement and social-behavioral adjustment decreases, creating an inverse relationship. Anger-related school problems often result in disciplinary infractions that can lead to suspension or expulsion. Across the nation, educators agree that schools need to find effective

ways to address disruptive behavior that does not include out of school placement. Additional research suggests that there are a variety of measures other than suspension that can help these youth (Losen & Martinez, 2013).

In 2013, the American Pediatrics Association encouraged pediatricians nationally to discourage out-of-school suspensions and expulsions as they were more detrimental than beneficial to student success (Lamont, et al., 2013). Schools were asked to get more innovative in developing interventions to help students succeed. As a result, schools are adopting alternative ways to address students' emotional and behavioral needs (Powell, et al., 2011).

To promote student success, some researchers support integrating education and mental health. The goal is to tie mental health to effective schools and effective schools to healthy functioning students (Atkins, Hoagwood, Kutash, & Seidman, 2010). This reciprocal relationship could help ensure "student access to quality mental health care by developing innovative programs to link the local school system with the local mental health system" (U.S. Department of Education Office of Elementary and Secondary Education, 2002, p. 427). Utilizing empirical programs such as anger regulation and aggression reduction in schools would support the importance of emotional well-being and its relationship to academic success.

Historically, educators have proclaimed that youth have unmet psychosocial needs such as social and emotional learning skills, interpersonal conflict, and emotion management that require resources that schools lack (Espelage, Low, Polanin & Brown, 2013). As adolescent anger and aggression remain a serious concern (Feindler & Engel, 2011), more and more schools are looking for evidence-based models to help students learn emotional regulation while creating a positive school climate.

## **School Climate and Student Engagement**

When students perceive their school environment as unfair, they may disengage from their academic life (Ruglis & Vallée, 2016). Student engagement is an essential part of academic success. Student engagement refers “to the degree to which a student is involved in the process of schooling, for example, involvement in class activity, school attendance, and feelings of belonging” (Ruglis & Vallée, 2016; p. 186). Youth who are placed in what they perceive to be unfair and unjust situations may either withdraw and suppress their emotions or lash out in anger (Burt, 2012). In return, if they act out their frustration aggressively, they may have disciplinary consequences like suspensions. On the other hand, some students may respond to oppression by working harder to achieve academic success, an approach that can help provide them with more opportunities to overcome impeding oppressive obstacles.

Research has identified specific groups of students, such as Native American, Black, and Latino, who receive more disciplinary referrals and harsher consequences than other students for similar behavior (Bradshaw, et al., 2010; Losen & Martinez, 2013; Skiba, et al., 2011). Data indicate that suspensions are linked with an increase in future behavioral problems, truancy, high school dropout, substance use/abuse issues, and involvement with the juvenile/adult justice system (Office of the State Superintendent of Education; OSSE, 2013). To address disciplinary bias within schools, a letter was sent to each school district from the U.S. federal government. The letter informed districts that legal action would be taken if their disciplinary policies had a disparate impact on students of a particular race. To help schools address policies and procedures, the letter offered assistance to school districts to help ensure their practices were equitable. The letter stated, “racial discrimination in school discipline is a real problem,” (U.S. Department of Justice, Civil Rights Division and the U.S. Department of Education, 2014, p. 4)

and warned districts that the US Departments of Justice and Education would conduct full-scale investigations of disciplinary practices based on complaints of racial discrimination.

Aside from legal sanctions, inequality affects the school climate and has a larger impact on students functioning in that environment (Cohen, McCabe, Michelli & Pickeral, 2009). School climate “refers to spheres of school life (e.g. safety, relationships, teaching and learning, the environment) as well as to larger organizational patterns (e.g., from fragmented to cohesive or “shared” vision, healthy or unhealthy, conscious or unrecognized)” (Cohen et al., 2009; p.186). School climate creates a sense of unity and cohesion and fosters the academic success of the student population.

School personnel play a vital role in creating a healthy school climate. Students who report a safe and caring learning environment perform better. Additionally, schools that have a positive school climate report lower disciplinary problems and dropout rates (Cohen et al., 2009; Ruglis & Vallée, 2016). Conversely, when youth feel they are treated unfairly, they may adopt an “anti-establishment” code of conduct (Verdugo, 2002), which can also lead to disengagement. Conversely, some may perceive this as a means of self-preservation and a healthy response to a toxic and unhealthy environment, though it may still adversely affect their academic performance (Ruglis & Vallée, 2016). Schools with higher rates of school suspension have been found to pay significantly less attention to school climate and have lower ratings in academic quality (Skiba & Rausch, 2006).

School climate can be improved by not only focusing on academics, but also paying attention to the development of skills that place an emphasis on emotional management, self-esteem development, and emotional well-being (Zembylas, 2016). Specific to anger in oppressed environments, it is important to validate the student’s feelings of anger. In developing

interventions, attention should not be placed on changing feelings, especially those of unfairness and oppression, but on using appropriate tools to communicate and express those feelings appropriately, thus increasing student engagement (Ruglis & Vallée, 2016).

### **Role of School Counselors**

As school counselors are faced with the demanding task of decreasing the frequency of disorderly behaviors, they are well-positioned to help a substantial number of students with social emotional problems (Wilson, & Lipsey, 2007). Though school counselors are highly valuable professionals in the education system, their role is largely misunderstood (Bridgeland & Bruce, 2011). Often, they are taxed with other duties such as administrative responsibilities and disciplinary duties that affect their counseling role (Dahir & Stone, 2009).

Research indicates the counselor-to-student ratios affect the availability of counseling services to students (Woods & Domina, 2014). The counselor-to-student ratio as set forth by the American School Counseling Association (ASCA) is 1 to 250 (ASCA, 2012b). Schools with more counselors can offer a variety of counseling services to meet the needs of their students (Woods & Domina, 2014). To answer the national call for schools to better prepare students for post-secondary success, it is essential that counselors are more accessible to help students plan for life after high school (e.g., Bryan, Holcomb-McCoy, Moore-Thomas, & Day-Vines, 2009; Bryan, Moore-Thomas, Day-Vines, & Holcomb-McCoy, 2011). Due to the vast array of extra duties, counselors often struggle to develop programs to meet the emotional needs of students (Burt, et al., 2010).

To utilize the school counselor role, administrators should allow counselors to be more accessible to offer their expertise in the domains of anger and aggression (e.g., Bryan et al., 2011). Students who attend schools with comprehensive counseling programs are more likely to

view their school climate as positive and perform better in school (Stone & Dahir, 2015). These findings support the need for school counselors and the role they play in helping students. One of their responsibilities is the development and implementation of evidence-based interventions to help youth with problematic behavior.

When developing these interventions, Toporek, Lewis, and Crethar (2009) identified three specific competency domains that counselors need to address to assist students. These dimensions align with the American School Counselor Association's National Model (ASCA, 2005) and ethical standards (ASCA, 2010) and are as follows: (a) student level of intervention, (b) school/community level of intervention, and (c) the public arena. Each of these areas is of critical importance to help school counselors increase students' social and relational competencies (Toporek, et al., 2009).

In recent years, there has been an increase in documented aggression (Twemlow et al., 2008). In response to this documentation, many schools have implemented anger management interventions often in the form of group counseling (Kellner, et al., 2008). Though a number of these anger management groups exist, many are not based on empirical models and are not effectively decreasing anger (Shek & Wai, 2008). For instance, Shek and Wai (2008) stated many programs are not adequately dealing with the competencies of students and school/community addressed by Toporek et al. (2009). For anger management programs to be effective, Burt, et al. (2010) asserted that they must be relational in nature and must affect students, school counselors, administrators, and parents.

School counselors are in a prime position to proactively help youth with problem behaviors by creating interventions to resolve dysregulated behavior while placing an emphasis on academics and social/emotional development (Curtis, Van Horne, Robertson, & Karvonen,



2010). Thus, school counselors must keep current with the literature and design innovative empirical based interventions to address the needs of the student population (Clark & Breman, 2009). Counselors possess both the professional training and skills to develop schoolwide interventions supported by the American School Counseling Association (ASCA) (Sherrod, Getch, & Ziomek-Daigle, 2009).

### **ASCA National Model**

The ASCA National Model (ASCA, 2012a) is a foundational framework to help school counselors meet the ASCA Mindsets and Behaviors for Student Success (ASCA, 2014a) and design and implement an outcome-based comprehensive school counseling program to show accountability in deliverance and management of student services. The ASCA National Model consists of four components: (a) foundation, (b) delivery, (c) management, and (d) accountability. Each of the components is briefly described. The first component, foundation, outlines the guiding mission statements, goals, student standards, and professional competencies that align with the domains of academic, career, and personal-social development. The second component, delivery, reviews key areas of an effective school counseling program which includes: individual student planning, responsive services, school counseling curriculum, and system support. The third component, management, addresses the school counselor competency, school counseling program assessments, use-of-time assessment, annual agreements, advisory councils (stakeholders), use of data, action plans, and calendars. The fourth and final component, accountability, addresses the measurement of the effectiveness of the school counseling program and how the program has impacted student achievement and behavior. School counselors believe every student can learn and every student can succeed (ASCA, School Counselor Competencies, I-C-1, 2012b).

The ASCA National Model (2012a) addresses the need for school counselors to deliver direct services to students through a core curriculum that contains individual student planning and responsive services. In the core curriculum, the ASCA National Model can serve as a guiding framework for school counselors to meet the emotional needs of students who struggle with dysregulated anger and aggressive behaviors. This dissertation utilized the ASCA National Model and Standards (2012a) alongside the ASCA School Counselor Competencies (2012b) to design an intervention based on empirically supported theoretical models that have shown to be effective in working with angry and aggressive youth.

### **ASCA Mindsets and Behaviors for Student Success**

In addition to the ASCA National Model (2012a), ASCA (2005) published the ASCA Mindsets and Behaviors for Student Success (ASCA, 2014a), which are the core components of the model. The standards clearly define a school counselor's role and assist with the development and delivery of a comprehensive school-wide counseling program. Three following core standards are addressed within the model: academic, career, and social/emotional development. The model and standards serve as a guiding framework for school counselors to design their anger and aggression interventions.

The domain of social/emotional development is made up of two core standards mindset and beliefs. Both standards focus on students' acquisition of knowledge, attitudes, and skills that will help that enrich the learning experience through the application of self-management behaviors and application of interpersonal skills (ASCA, 2014a). The mindset standard encourages counselors to help students find balance in their mental, social/emotional, and physical well-being and help them develop self-efficacy so they can develop a positive attitude and achieve their highest level of potential. The beliefs standard is centered on three core themes:

(a) learning strategies, (b) self-management skills, and (c) social skills (ASCA, 2014a). These themes stress the importance of strong cognitive thinking and organizational skills, how to manage one's emotions and behaviors, and how to effectively communicate and express oneself. The mindset and behavior standards within the social/emotional development domain suggest that school counselors can effectively contribute to the emotional well-being of all students. ASCA considers the primary goal of school counseling programs as the enhancement of student achievement and accomplishment (ASCA, 2015), and part of that success falls within the arena of intervention development.

### **Anger and Aggression Interventions**

Paul (1967) proposed three basic outcome research questions investigators should ask before conducting psychotherapy research: (a) what types of interventions (for anger) works best for which types of problems; (b) with which types of treatments; (c) by which types of therapies? To expound upon these questions, there has been an increase in outcome research conducted in clinical settings with adults (DiGiuseppe & Tafrate, 2003), but the literature pertaining to individualized interventions with adolescents is lacking. To date, the vast amount of research on anger and aggression interventions in academic settings is based on school-wide and group-based programs. Few studies have explored anger and aggression using a single-case research design.

The intervention strategies utilized in the literature typically fall under the heading of anger management programs with a focus on experimental and control conditions. According to Thomas (2001), an anger-management intervention creates the potential for behavior change by increasing knowledge, providing new perspectives, and teaching specific strategies that can be learned and practiced by participants to cope with and manage anger. Many of these programs

are grounded in cognitive behavioral theory. The following is a synopsis of select anger and aggression interventions.

### **Study One**

Through a meta-analysis Lee and DiGiuseppe (2018) examined the effectiveness of anger management programs. Results indicated that cognitive behavioral treatments were used most often to treat both anger and aggression. Also, anger interventions consistently showed a moderate effect among both non-clinical and psychiatric populations; whereas, aggression interventions were less consistent. Regarding children and adolescents, cognitive-behavioral interventions that targeted behavioral changes were more successful than those addressing internal (i.e., cognitive and emotional) processes (Lee & DiGiuseppe, 2018). Lee and DiGiuseppe (2018) concluded that interventions with youth appeared to be more effective if behavioral domains were addressed rather than focusing solely on cognitive processes (i.e., thoughts associated with anger). The findings of this study support the need for behavioral skills to be woven into the intervention.

### **Study Two**

Fives, et al. (2011) conducted a study with 135 adolescents enrolled in a mandatory social studies class in high school. Using cognitive behavioral therapy and Rational Emotive Behavior Therapy (REBT; Ellis, 1958), researchers examined whether combinations of anger, hostility, and irrational beliefs predicted aggression. Researchers examined whether irrational beliefs (such as intolerance of rules) would predict aggressive behaviors as defined by physical, verbal, and indirect aggression while moderating for gender. It was speculated that anger, irrational beliefs, and hostility in any combination would better predict aggression (indirect, physical or verbal).

The results indicated that gender, anger, and irrational belief of intolerance of rules frustration did predict physical aggression, and anger and irrational beliefs of intolerance of rules frustration predicted indirect aggression. As for gender, in comparison to females, males were more likely to report higher rates of physical aggression and were voted to be more aggressive by both males and females. Findings supported REBT (Ellis, 1958) in that irrational beliefs and emotion (anger) predict aggression. Though this study did not assess the effectiveness of an intervention, it did show that cognitions play a large role in behavioral responses. The findings of this study support the need for irrational beliefs to be incorporated into an anger and aggression intervention.

### **Study Three**

Down et al. (2011) conducted a mixed-methods research design in a clinical setting. Using the Social Information Processing model (Crick & Dodge, 1994), researchers compared the efficacy and treatment preferences of adolescents assigned to two different anger management treatment groups. Eighteen youth were randomly assigned to either a Cognitive Behavioral Therapy (CBT) or Personal Development (PD) group. Seven additional adolescents formed a control group. The goal of the CBT group was to help youth develop skills needed to manage reactive aggression. The stated goal of the PD group was to help adolescents “develop less aggressive identities with the use of less proactive aggression” (Down, et al., 2011, p. 33). Unfortunately, there was overlap between the PD and CBT skills, making it difficult to clearly differentiate between the two interventions.

Participants completed pre- and post-intervention questionnaires to assess anger expression and control, whether they used the taught coping skills, and their perception of their self-image. Participants also took part in a pre- and post-intervention interview that was

transcribed and analyzed qualitatively using interpretive phenomenological analysis. Both treatment groups demonstrated significant improvements in anger coping and self-esteem in comparison to the control group. Of interest, participants' age was significantly correlated with self-image and anger control outcomes in the CBT group with older students showing more improvement. Qualitative analysis identified factors correlated with improved outcomes, including participants' age, motivation, readiness to change, engagement in the therapeutic process, group dynamics, and emotional expressiveness. According to the findings, older adolescents fair better with cognitive behavioral approaches than younger youth.

#### **Study Four**

Drawing from Relational Frame Theory (RFT; Hayes, 2004; Hayes, et al., 2001), Luciano et al. (2011) employed a quasi-experimental design aimed at exploring the interactions of Acceptance and Commitment Therapy's (ACT) defusion techniques. Researchers compared within and between treatment conditions for two defusion protocols with 15 secondary students ages 12-15 years in a school setting. The study was reportedly the first of its kind to perform RFT experimental analysis of Acceptance and Commitment Therapy methods. The researchers tied ACT's concept of defusion, (i.e., changing the way we interact with thoughts by creating contexts or situations in which unhelpful thoughts are diminished) (Hayes, 2004), into the framing model. Participants completed a battery of three pre-post psychometric instruments.

The study was broken into two distinct treatment protocols. The first protocol Defusion I, focused on deictic framing (I-HERE-NOW versus I-THERE-THEN) and the Defusion II protocol focused on hierarchal framing, a more advanced skill that ties into psychological flexibility. Participants who took part in the more advanced treatment intervention protocol (Defusion II) showed more improvement than the control group or Defusion I group. One of the

study's strong points was the group design. Researchers clearly outlined and operationally defined a well-organized treatment plan that could easily be replicated in a school setting. The findings of this study support the need for youth to be able to fully engage in defusion techniques incorporating concepts of psychological flexibility to reap the full benefits of ACT.

### **Study Five**

Harrell, Mercer, and DeRosier (2009) used a cognitive behavioral approach to evaluate the effectiveness of a social skills training intervention (Social Skills Group Intervention-Adolescent (S.S.GRIN-A)) designed to improve adolescents' social, emotional and behavioral adjustment. Seventy-four adolescents (ages 13–16 years) along with their parents were randomly assigned to either the treatment group or a wait-list control group. Participants in the treatment group and the control group took pre- and post-measures on the constructs of global self-concept, social self-efficacy, internalizing behaviors (i.e., depression and anxiety), and externalizing behaviors (i.e., delinquency and anti-social behaviors). Youth in the treatment group showed statistically significant improvements in global self-concept, social self-efficacy, and a decrease in internalizing problems. The only area that no statistically significant difference was noted was with externalizing behaviors. The study supported the use of interventions to improve social and emotional skills and the effect they have on internalizing behaviors in early-to-middle adolescents.

### **Study Six**

Dodge, Godwin, and The Conduct Problems Prevention Research Group (2013) reviewed the long-term positive impact of the Fast Track preventive intervention on decreasing antisocial behavior in adolescence. The Fast Track program is the largest and longest federally funded preventive intervention trial for children showing aggressive behavior at an early age.

Participants included 891 high-risk kindergarten children who were randomly assigned to an intervention or a control group by school cluster. The Fast Track program is a preventive multiyear intervention that addresses social-cognitive social skills training that are taught through alternative thinking strategies, parent groups, peer coaching, and academic tutoring. Results indicated that children who participated in the long-term intervention showed a statistically significant decrease in antisocial-behavior scores after Grade 9 by 0.16 standardized units ( $p < .01$ ) in comparison to the control group.

Using structural equation modeling, Dodge et al. (2013) showed that 27% of the intervention's influence on antisocial behavior was mediated by its effect on three social-cognitive processes: reducing hostile-attribution biases, increasing competent response generation to social problems, and devaluing aggression. The findings of the study supported a social-cognitive behavioral model to address problematic behaviors. According to Dodge, et al. (2013) "social-cognitive processes are a major psychological mechanism through which life experiences are stored and represented internally to guide later behavior. The study shows that the theories and methods of social-psychological experiments are relevant to the real-world behavior of aggressive children" (p. 462).

### **Summary of Studies**

The cognitive-behavioral approach to therapy has been deemed beneficial in helping adolescents with problematic behaviors (Deffenbacher, Thwaites, Wallace, & Oetting., 1994; Down, et al., 2011; Fives, et al., 2011; Luciano et al., 2011). This approach emphasizes the affective, cognitive, and behavioral processes involved in anger-provoking events. Cognitive theory has also been influential in teaching adolescents' healthy social skills. Social skills training is centered on the development of positive peer to peer communication skills and



interpersonal strategies for minimizing intra and interpersonal conflict and anger. Though each reviewed study provided support for cognitive behavioral models, none of them utilized a single-case research design. This raises the question of whether individualized interventions utilizing a behavioral framework exploring affective, cognitive and behavioral components of anger and proactive and reactive aggression would show similar results. To expound upon creating a framework to support single-case research designs, two theories were used in the present study: Relational Frame Theory (Hayes, et al., 2001) and Social Information Processing Theory (Crick & Dodge, 1994).

### **Theoretical Framework**

Though there is a wealth of information pertaining to the negative effects of anger and aggression, we know little about the factors that cause them (Fives, et al., 2011). To address this gap, cognitive behavioral theories (CBT) are often used to understand constructs such as anger and aggression. For the present study, two theories were chosen as the crux of anger regulation and aggression reduction (ARAR) framework: Relational Frame Theory (Hayes, et al., 2001) and Social Information Processing Theory (Crick & Dodge, 1994). Both theories provide rich contextual information for understanding the constructs of anger and aggression.

#### **Cognitive and Behavioral Theory (CBT)**

The most effective and frequently used modalities for treating anger have been derived from cognitive therapy (based on cognitive theories) and behavioral therapy (based on learning theory). CBT operates on the premise that thoughts cause feelings and behaviors, and these thoughts and behaviors can lead to positive or negative consequences. CBT has shown to be an efficacious means for helping people change the way they think about and respond to emotions (Herbert, Gaudiano, & Forman, 2013). Both narrative and meta-analytic studies indicate that

anger techniques and strategies grounded in CBT yield positive changes on a variety of outcome variables (Wright, Days, & Howell., 2009). One of the core beliefs behind CBT is that altering and interacting with maladaptive thoughts can lead to changes in interpretations and feelings, which may in turn lead to changes in behavior.

A direct and structured, problem-focused, and goal-oriented approach to addressing anger and aggression is used in CBT. Sessions begin with collaborative agenda setting and homework review and conclude with review and consolidation of new skills and the assignment of homework. CBT interventions enable counselors to place emphasis on helping clients identify faulty, distorted, or irrational cognitions that precede anger (Charlesworth, 2008). The ability to recognize when one is engaging in thoughts, experiencing a change in emotion, or experiencing a change in physiology are all cornerstones of CBT. Regarding anger, the assumption is that by increasing awareness, an individual will be able to identify triggers, behavioral response patterns, and thoughts that contribute to emotional experience (Herbert & Forman, 2011). Because CBT is a theoretically broad umbrella that encompasses a range of distinct therapy models (Herbert & Forman, 2011) the present study will use both a behavioral language acquisitions theory (RFT) and a social learning theory (SIP) in the development of the customized intervention.

### **Relational Frame Theory (RFT)**

RFT is an extensive post-Skinnerian contemporary behavioral explanation of language and cognition (Hayes, 2004; Hayes, et al., 2001). It was developed in the mid-1980s in a presentation to the Association for Behavior Analysis (Hayes & Brownstein, 1985). The leading developer, psychologist Steven Hayes, used the theory to later establish Acceptance and Commitment Therapy (ACT, pronounced as the word, not the acronym) (Hayes, Strosahl, &

Wilson, 1999). RFT adopts the view that humans can form relationships between various stimuli in an infinite number of ways.

**Theoretical framework and key constructs.** RFT theory draws from several well-established behavioral assumptions to explain aspects of human language and cognition (Hayes, 2004; Hayes, et al., 2001). Many authors have used RFT and ACT to explain a variety of complex psychological phenomena such as anxiety (Hayes, 2004), depression (Barnes Holmes, Barnes Holmes, McHugh, & Hayes, 2004), prejudice (Hayes, et al., 2004), and self-awareness (Harris, 2009). Little, however, is known about using RFT to understand adolescent anger (Luciano, et al., 2011).

RFT can be a valuable theory to advance our understanding of anger because it examines the meaning people assign to private and psychological events and how those interpretations can explain the drive for achievement or how they can inflict suffering (Hayes, 2004). By definition, a psychological event is any action that we engage in, such as thinking or behaving, that results in an effect in the context or situation (Hayes, et al., 2001). A private event is subjective inner perceptual experience (Biglan & Hayes, 1996). Practitioners using RFT are interested in how to predict and influence these events to help problematic behavior and increase psychological flexibility.

According to Relational Frame Theory (RFT), humans are the only species that can learn and apply complex relations to private and psychological events (Hayes, et al., 2001). Our unique ability to form relational networks (generating an understanding of relations using words, phrases, and meaningful events) helps us identify emotions and explain feelings. We derive these relations through visual, verbal, and physical cues. Through communication, we assign meaning to our thoughts, feelings, and behaviors. For example, certain sounds may trigger feelings,

thoughts, and behaviors based on how we relate these sounds to past experiences (Gross & Fox, 2009).

In RFT, language is more than linguistics; it is also interpretation. How we understand, attach meaning to, and interact with the world around us can lead to healthy coping or psychological suffering (Hayes, 2004). If we have unpleasant experiences, then we produce counterproductive thoughts that may result in problematic emotions such as fear, anxiety, and anger. As a result, we may try to avoid distressing thoughts by suppressing them, or we may act on them through problematic behaviors, which may further intensify the troublesome thoughts (Hayes, 2004). Understanding how to attach meaning to events requires exploring the concepts associated with RFT.

RFT draws from traditional behavioral theory derived vocabulary and adds new concepts to existing terminology, which can add to the theory's complexity. The depth of the theory, however, contributes to the richness in understanding human behavior. For example, one of the key concepts behind RFT is the idea of derived stimulus relations. Derived stimulus relations are associations between two or more stimuli that are not directly trained or taught and are not based only on the physical properties of the stimuli (Torneke, 2010). Physical properties mean we can see, hear, smell, feel, or taste the stimulus (Blackledge, 2003). RFT argues that derived relations can be conveyed under antecedent and consequential control; therefore, relational responding may be thought of as operant (Torneke, 2010). Operant conditioning is a type of learning in which behavior is controlled by consequences through positive reinforcement, negative reinforcement, positive punishment, and negative punishment (Torneke, 2010).

A simplistic example of this would be if individuals learn that  $A=B$  and  $A=C$  through

experience, then they will be able to infer that  $B=A$ ,  $C=A$ ,  $B=C$ , and  $C=B$  without anyone teaching these relations. Our understanding that  $B=A$  after learning  $A=B$  is referred to as mutual entailment. Understanding that  $B=C$  after learning  $A=B$  and  $A=C$  is referred to as combinatorial entailment (Torneke, 2010) These sets of relationships help explain derived stimulus relations.

Hayes, et al. (2001) suggested that equivalence relations are only one way that we relate stimuli to one another. As children, equivalencing is the first rule-governed behavior we learn (Torneke, 2010). As we grow older, we learn more sophisticated rules. These rules of relations are known as relational frames (Torneke, 2010). Our ability to connect experiences with one another is known as bi-directional relationships, and they are categorized as one of the most important features of language and cognition (Hayes, et al., 2001; Torneke, 2010).

Bi-directional relationships occur when we relate one event or stimulus with another without the presence of a stimulus being present (Torneke, 2010). For example, if we were asked to describe one of our fears, we would begin to focus on a stimulus that produces fear. Even in the absence of the stimulus, we can visualize, name, and begin to form a reaction to the fear-invoking stimulus. Our response is all due to the past relations (e.g., experiences or psychological events) we have had with the fear-inducing stimulus. RFT helps us understand how we apply contextual meaning to an event, even hurtful events. The meanings we assign to events and situations enable us to experience and re-experience painful events even if we are far removed from the setting in which the event took place (Ciarrochi, Robb, & Godsell, 2005). Additionally, RFT is the theoretical underpinning of the ever-popular behavioral theory Acceptance Commitment Therapy.

**Acceptance Commitment Therapy (ACT).** ACT focuses on acceptance and commitment (Harris 2009; Hayes 2005). ACT can best be understood by the concepts of: (a) accepting thoughts, (b) choosing life directions, and (c) taking action. Unlike traditional cognitive behavioral therapies, ACT does not seek to change cognitions to alleviate problematic anger. Instead, ACT aims to have clients accept and understand feelings and emotional experiences that are attributed to anger. The goal is to be aware and accepting of anger-provoking cognitions rather than changing maladaptive or irrational thoughts. The idea is to let go of the struggle to control troublesome thoughts and feelings by distancing oneself from unwanted thoughts.

ACT places an emphasis on emotional acceptance, psychological flexibility, and mindfulness rather than on adapting and changing thoughts (Harris, 2009; Hayes 2005). In ACT, anger is a natural consequence that can lead to *psychological inflexibility*, which is defined as “the inability to modulate behavior in response to how useful it is—changing behavior when change is needed and persisting when persistence is needed—so as to accomplish value-guided ends” (Hayes & Strosahl, 2004, p. 25). Living a life in accordance with our values helps us become more psychologically flexible.

**Application to adolescent anger and aggression.** Relational Frame Theory (RFT) provides a new way of conceptualizing how we work with adolescent anger and aggression. Whereas traditional behavioral theories would focus on changing thoughts, RFT through Acceptance Commitment Therapy (ACT) teaches clients to engage in self-distancing to become an observer of thoughts, feelings, and actions (Hayes, 2004). In working with anger, barriers can occur when something that is desired gets in the way of what is deemed important (e.g., values) (Harris, 2009). The more things that stand in the way, the higher the likelihood of an anger

episode. Unlike traditional cognitive-behavioral approaches, RFT does not delve into the content of thoughts, nor is it assumed that a thought is dysfunctional or irrational. Instead, the focus is on the function the thought serves in a specific setting or context (Hayes, 2004).

Another major difference with more traditional cognitive behavioral therapies is the focus on metaphors and experiential exercises. Traditional behavioral methods focus on Socratic questioning, identifying distortions, cognitive restructuring, and changing thoughts (Herbert et al., 2013). In RFT, adolescents are taught to increase awareness of present moment by confronting hurtful private events. Language is used to help clients describe and label emotions, thoughts, and the self as context, and to track these psychological events in the present moment. (Fletcher & Hayes, 2005).

Using RFT theory along with ACT places attention on feeling and experiencing emotions and feelings rather than fighting them. ACT emphasizes emotional acceptance, psychological flexibility, and mindfulness rather than changing maladaptive thoughts (Harris, 2009; Hayes, 2005). Clients are taught to accept the thoughts and to defuse their emotional pain by becoming more psychologically flexible. Overall, RFT is a comprehensive analytically-abstract theory that provides a different lens to understand human behavior (Hayes, et al., 2001).

**Contributory perspective.** RFT offers a new and modern approach to understanding language and cognition (Sanchez & Rodriguez, 2014). Support for RFT is continuing to grow in research and practice (Hayes, 2016). Some of the contributions this theory has made both inside and outside of the field are (a) the principles of RFT are observable and empirically based, (b) the theory is applicable, functional, and practical in clinical contexts, and (c) the theory helps understand language and cognition's role in understanding human suffering (Harris, 2009; Hayes, 2016; Hayes, et al., 2001; Luciano et al., 2011).

First, the theory is grounded in philosophical principles and is observable in experimental conditions (Gross & Fox, 2009; Hayes, et al., 2001). RFT is based on empirical research that is centered on the core claim that relational framing is operant and can be learned. Over the past twenty years, RFT has illustrated support for the theoretical model by showing relationships between relational responding and language and cognitive skills (e.g., Gore, Barnes-Holmes & Murphy, 2010; O'Hora, Paláez & Barnes-Holmes, 2005). Additionally, research has shown that relational framing comparisons can develop in children as young as 4 to 6 years (e.g., Berens & Hayes, 2007). Relational framing has even addressed issues like perspective taking skills in children (e.g., Weil, Hayes & Capurro, 2011) and in the regulation of problematic behaviors (Luciano et al., 2011). As a result of promising research, more practitioners are beginning to utilize this innovative behavioral approach in their intervention development.

**Theoretical issues.** The resurrection of behaviorism has not been fully embraced but met with heated criticism both within the field and outside of it (Gross & Fox, 2009). Much of the controversy stems from three sources: (a) the complexity of the theory (b) an extensive non-colloquial vocabulary that deviates from that of the field's founding father B.F. Skinner (1957), and (c) the scientific implications RFT would have on current behavioral research. (Gross & Fox, 2009)

First and foremost, RFT is not an easy theory to learn or apply. The terminology is extensive, and the theory is laden with complex models and examples. RFT is an arduous and cumbersome theory that may turn off many practitioners. Theorists argue that the use of the complex language is to allow a scientific treatment of cognition (Blackledge, 2003). However, to a novice, the theory could be incomprehensible and inundated with jargon. Last, there is a dearth of data regarding using RFT and ACT with anger and aggression (Luciano, et al., 2011).



**RFT summary.** Overall, RFT is a comprehensive behavioral theory that can be applied to research and practice. It is inclusive in that it operates from a client's frame of reference without superimposition of the practitioner's values. Additionally, cognitive distortions are not given credence, and specific attention is given to how each client assigns meaning to events and how that meaning is derived. It is not the practitioner's job to judge whether a thought, feeling, or behavior is irrational or dysfunctional.

The RFT model has several drawbacks. First, the theory's complexity and extensive vocabulary make it difficult to apply to practice. In addition, the model challenges the design of previous behavioral research and requires a different approach to experimental studies. RFT helps to explore and understand what is believed to be true, what messages are conveyed, and how the messages are related to the past.

RFT also encourages us to look at the development of social cognition and interpersonal communication skills. If framing is tied to adverse experiences, then it is feasible that problematic behavior like anger can result in poor social functioning. If our derived relations develop out of social cognition, then perhaps we should also look at a theoretical model like the Social Information Processing model (Crick & Dodge, 1994) that explores social learning in relation to anger and aggression.

### **Social Information Processing (SIP)**

Many interventions for youth who exhibit high levels of anger are built on social cognitive theory (SCT) (Sukhodolsky, Kassinove, & Gorman, 2004). Bandura (1973) is the most well-known theorist in this area; he bridged together both the cognitive and behavioral domains in his Social Learning Theory (SLT). Social Learning Theory posits that we learn from one another through observing, imitating, and modeling. Bandura's theory has been instrumental in

helping us understand childhood and adolescent behaviors.

Since Bandura's time, several theories have contributed to the field of social cognitive science. One of the most widely accepted and researched social-cognitive models to explain aggression in children is social information processing developed primarily by Kenneth Dodge (e.g., Arsenio & Lemerise, 2004; Crick & Dodge, 1994; Dodge & Coie, 1987). According to the model, children who behave aggressively do so because they process information about the social world in a biased, inaccurate, and distorted manner (Crick & Dodge, 1994).

**Historical context and philosophical assumptions.** The first SIP model originated in the mid-1980s (Dodge, 1986). Dodge (1986) theorized that children encode and interpret social cues when they are engaged in the problem-solving process. About a decade later, the SIP model was reconstructed, highlighting six steps to better account for the role of affective processes, latent mental structures, and reciprocal effects (Crick & Dodge, 1994). The reformulated model describes how children process problems and decide how to behave in social situations by drawing upon a database of past experiences, memories, and formed schemas (Crick & Dodge, 1994).

Since the model's initial introduction, social cognitive research has made advancements to impact social cognition in relation to behavioral responses among aggressive youth (e.g., Crick & Dodge, 1994; Fontaine & Dodge, 2006). In developmental research, the SIP has become an important social-cognitive theoretical model to understand the cognitive processes that precede aggressive behavior in childhood (Arsenio & Lemerise, 2004; Li., Fraser, & Wike, 2013). The model explores underlying social information processing problems so practitioners can develop effective interventions for aggressive youth (Oostermeijer, Nieuwenhuijzen, Van de Ven, Popma, & Jansen, 2016).

**Theoretical framework and key constructs.** SIP is a developmental approach used to explore children's individual differences in social interpretations and processing (Crick & Dodge, 1994). The model contends that when people have presented socially challenging situations, they respond quickly with a sequence of mental processes (Dodge et al., 2013). According to Crick and Dodge (1994), children behave aggressively because they interpret others' behavior and evaluate aggressive acts, inaccurately.

SIP places emphasis on two forms of aggression, reactive and proactive. Reactive aggression is the defensive, vengeful response to a perceived prodding from a peer leading to an angry reaction; whereas, proactive aggression is the deliberate, unprovoked behavior intended to influence or coerce a peer (Crick & Dodge, 1996). It is assumed that children enter social scenarios with a database of memories of prior experiences and social schemas to draw upon (Crick & Dodge, 1994). These events occur on-line (i.e., real-time) through the processing of cues and decision-making (i.e., response selection) that occurs within the context of different types of social interactions in specific circumstances (Crick & Dodge, 1994).

The SIP infrastructure is comprised of six steps: (a) encoding; (b) interpretation; (c) goal clarification; (d) response search; (e) response decision; and (f) enactment (Crick & Dodge, 1994). Each step is sequential and draws from a pool of experiences, knowledge, and schemas. According to Crick and Dodge (1996), skillful processing at each step of the model will lead to competent performance; whereas, biased or deficient processing will lead to socially deviant behaviors (e.g., aggression).

Each step of the model is briefly summarized. Step one, encoding, refers to the individual's processing of external (environmental) and internal (emotional) cues and physical response cues (e.g., accelerated heart rate). Step two, interpretation, is when children form

impressions about the contextual cues. Knowledge from past experiences (in the form of schemas) is recalled from memory and used to help interpret the event (Crick & Dodge, 1996). According to Crick and Dodge (1996) interpretations involve making inferences about the cause of the event in the case of peer conflict and the behavioral motive of the peer. Step three, goal clarification, is an arousal-regulating process in which children form judgments on their desired outcome. In response search, step four, children's responses consist of their ideas about how they could behave in each situation. Children will draw responses from their database, or they may come up with new ways of behaving. In step five, response decision, children evaluate the responses and decide about how to handle the situation. In step six, behavior enactment, the child puts their plan into motion and behaves based on their decision (Crick & Dodge, 1994).

At the heart of the SIP model is the database. The database consists of previous schemas and memories the child uses to draw upon in the decision-making process; it is in constant use during each step in the model (Crick & Dodge, 1996). Also, in the model, latent mental structures and affective processes interact with a series of SIP steps to affect behavior (Crick & Dodge, 1994). Latent mental structures are comprised of emotional and behavioral scripts (i.e., automatic emotional and behavioral responses), schemas (i.e., mental patterns that organize and simplify complex experiences), heuristics (i.e., rules that people use to make decisions, and solve problems), and moral concepts such as values and beliefs (Crick & Dodge, 1994).

The theory posits that children move through each step, and peer evaluation and response can provide feedback that may increase future processing speeds (Crick & Dodge, 1994). According to SIP, children use a stored database of memories, formed representations, and past experiences that influence the six steps when deciding how to behave in social situations (Crick & Dodge, 1994). In other words, children learn through experience and use what they learn and

apply in similar contexts. Because they have been through a similar problem-solving process before, they will rely on that experience to work through new situations more efficiently. Skillful processing at each step of the model is hypothesized to lead to proficient performance within a situation; whereas, deficient processing is believed to lead to deviant social behavior like aggression (Crick & Dodge, 1994).

**Application to adolescent anger and aggression.** The SIP model has focused primarily on understanding and clarifying childhood aggressive behaviors. Research suggests that aggressive and nonaggressive children differ from one another in how they process information at each step of the model (Camodeca & Goossens, 2005). Differences in emotional responses also exist across cultures. Dodge et al. (2015) found that children's mean levels of hostile attribution biases varied across ethnic groups and that levels of hostile attribution biases mediated the relation between cultural group and aggressive behavior. The differences in rates of chronic aggressive behavior problems from groups of children from around the world were defined by their ecological and cultural context (Dodge, et al., 2015). Di Giunta et al. (2017) discovered that across six cultures, the construct of anger differed on characteristics such as social norms that affect the way children perceive, interpret, manage, and react to social exchanges. These findings suggest that from a global perspective, anger and self-regulation may not be interpreted the same way.

Although the model does not specifically focus on anger, it does discuss emotion regulation, which could lend itself to an anger intervention. There is empirical evidence that failure to emotionally regulate anger is related to externalizing symptoms, which in turn can lead to mood dysregulation (Okado & Bierman, 2015) and internalizing symptoms, which can result in depression and anxiety (Birkley & Eckhardt, 2015). Children who behave aggressively

commonly hold attitudes and beliefs that favor or validate the use of aggression (Tapper & Boulton, 2004). To help these children gain social competence, early intervention is key to teaching a sequential problem-solving approach geared toward decreasing aggression.

**Contributory perspective.** The SIP model has been widely accepted for providing a comprehensive understanding of the social adjustment of children (Arsenio, 2010; Li, Fraser, & Wike, 2013). Crick and Dodge's reformulation (1994) of the social information processing (SIP) model has been cited more than 1,000 times in the psychological literature (Arsenio, 2010). The ease of use of the model allows practitioners to design activities to promote positive peer experiences and reinforce prosocial behavior. Additionally, the SIP model provides new methodological tools to advance social-cognitive research (Arsenio, 2010). The sequential steps can be investigated on either an individual or programmatic level (e.g., school-based models).

SIP helps explain aggressogenic thoughts, which are defined as a pattern of social cognitions related to aggressive behavior and intent (Roos, Hodges, Peets, & Salmivalli, 2016). Children who are aggressive commonly hold attitudes and beliefs that favor or validate the use of aggression (Tapper & Boulton, 2004). Additionally, the model provides guidance in designing problem-solving interventions. The emphasis on both emotional and cognitive processes working together simultaneously make the model unique for understanding the processing of both reactive and proactive aggressive behavior (Arsenio, 2010).

**Theoretical issues.** SIP is a cognitive-social model that primarily focuses on aggressive behavior. By doing so, the construct of anger is not explored. Most of the model's examples include social situations in which children respond aggressively. It appears the model addresses surface issues but does not extend to the deep root of the issue nor does it tap into the emotional disposition and the frequency of its occurrence. SIP assumes aggressive behavior is defective and

there is homogeneity in terms of social skills deficits (Sutton, Smith, & Swettenham, 1999). This model favors a multi-stage theoretical model. Multi-stage theories assume (a) people will behave differently at different stages, and (b) interventions and information needed to progress toward an action or adopt a new behavior varies from stage to stage (Armitage & Conner, 2000). Making generalized assumptions about children following a sequential mode of the social cognitive process does not consider cultural factors, gender, nor individual differences. Furthermore, it opens the door to theoretical skepticism.

**SIP summary.** Crick and Dodge's SIP theory (1994) has been accepted as a major theoretical framework for understanding how cognition can lead to aggression in specific situations. Social competence in childhood is related to a variety of developmental and adult outcomes (Li et al., 2013). Failure to adjust and develop positive social skills is associated with negative outcomes such as peer rejection, aggressive behavior (e.g., Trentacosta & Izard, 2007), and negative long-term socioeconomic outcomes (e.g., Heckman, 2008). Therefore, it is important to teach children appropriate problem-solving skills, and SIP provides a good model for doing so.

## **Summary of Chapter Two**

In this literature review, systemic and cultural factors were examined in relation to developing an evidence-based anger and aggression intervention for adolescents. Research findings indicated there is a dearth of information pertaining to single-case study designs in the domain of anger and aggression. Therefore, there is a need for evidence-based SCRD within this domain with this particular population.

Two school-related frameworks were utilized to support the development of an inclusive intervention in the academic setting: The American School Counselor Association (ASCA, 2005,

2012a) National Model and the ASCA Mindsets and Behaviors for Student Success (2005, 2014a). These models outline the essential components of a comprehensive school counseling program that supports the delivery of anger and aggression interventions. Both models provide a structure for delivering direct services to *all* students through a school counseling core curriculum, individual student planning, and responsive services (Williams, 2015).

Aside from school-based models, a contextual cultural framework, the Multicultural Social Justice Counseling Competency (MSJCC; Ratts et al., 2016), was explored as a means to understand the interplay in cultural dynamics brought into the session by the client and counselor. The MSJCC challenges counselors to increase their own awareness of marginalized and privileged dynamics and understand the counseling relationship from the client's perspective. The framework also provides a framework for counselors to identify the knowledge, skills, attitudes and beliefs of students and develop interventions by taking these factors into account (Ratts, et al., 2016).

The professional literature regarding youth who struggle with dysregulated anger and aggression indicates that they often face cultural and systemic educational disparities such as disciplinary consequences, missed instructional time leading to missed assignments, and poor academic preparation. Although there are studies supporting the use of cognitive behavioral interventions with anger and aggression, most of this research has been conducted in school-wide or group settings. Little is known about the effectiveness of individualized cognitive behavioral interventions that are specifically designed to meet the student's needs.

Cognitive behavioral theories drawing from Relational Frame Theory (RFT) and utilizing components of Acceptance and Commitment Therapy (ACT) and Social Information Processing (SIP) were presented as the theoretical frameworks for this dissertation study. These theories



served as the foundation for the development of anger regulation and aggression reduction (ARAR) intervention.

## CHAPTER 3: METHOD

### Research Design

To examine the effects of an anger regulation and aggression reduction intervention with adolescent males, an ABA single-case research design (SCRD) was employed (Kazdin, 2016). It has been shown that dysregulated anger in school settings can have detrimental and long-term consequences in part because problematic anger can be accompanied by aggression (Fives et al., 2011; Peled & Moretti, 2007), is associated with peer rejection and deviant relationships (Ettetal & Ladd, 2015), elevates the risk of school dropout (Bradshaw, Schaeffer, Petras, & Ialongo, 2010), is related to juvenile delinquency (Maschi & Bradley, 2008), and is related to other psychological disorders such as depression and anxiety (Fernandez & Johnson, 2016). Given this information, it is no surprise the federal government is asking schools to address the social and emotional needs of students (U.S. Department of Education, 2014).

The rationale of using SCRD in the present study was to help adolescents learn effective anger regulation skills while decreasing problematic aggressive behaviors. The SCRD method is a cost-effective, practical and comprehensive way that professionals can address problematic behaviors. Additionally, this method provides a much-needed one-on-one framework that schools can use to meet students' specific and individual needs.

**Single-case Research Design.** In an ABA Single-case Research Design (SCRD) data are collected from cases and analyzed for change (Kazdin, 2016). A case is the unit of intervention administration and data analysis (Kratowill & Levin, 2010). It can be either a single participant, like in this study, or a cluster of participants (Swoboda, Kratowill, & Levin, 2010). Each case yields its own controls for comparison purposes. For example, "the case's series of outcome variables are measured prior to the intervention and compared with measurements taken

during and after the intervention” (Swoboda, Kratochwill, & Levin, 2010; p. 3). The dependent variable is measured repeatedly within levels of the predictor variable. These levels are referred to as phases, (e.g., baseline phase, intervention phase, and withdrawal phase) (Kratochwill et al., 2010).

The SCRDR “offers counseling practitioners and researchers a practical and viable method for evaluating the effectiveness of interventions that target behavior, emotions, personal characteristics, and other counseling-related constructs of interest” (Ray, 2015, p. 394). The design has systematic features that can help practitioners determine whether an intervention is successful, which include: (a) identification and statement of the treatment goal, (b) repeated measurement of the outcome variable over time, (c) treatment phases, and (d) stability of baseline data (Heppner, Wampold, Owen, Thompson, & Wang, 2015). The SCRDR is getting more attention in the counseling field and has contributed to the evidence-based practice movement (Flay et al., 2005).

The evidence-based practice movement (EBP) began in the 1960s when practitioners and educational researchers began to report treatment interventions that were demonstrably more effective than comparison interventions. EBP can be viewed as a decision-making process that uses the best available evidence about effective treatments given client values and preferences in addition to practitioner expertise (Barth et al., 2012). These models consist of efforts to bring into use programs, policies, and other practices, including assessments that have shown to be valid and reliable measures of behavioral functioning (Biglan & Ogden, 2008). An evidence-based practice model is a good fit with SCRDR because it directly addresses the question: What works for whom under what conditions? (Ray, 2015).

Though there is a push for counselors to use evidence-based practice models to address anger and aggression, the research is lacking (DiGiuseppe & Tafrate, 2007). The dearth of literature pertaining to the SCRD is especially surprising considering this type of research offers a comprehensive understanding of the factors that contribute to an intervention's effectiveness. Regrettably, SCRD is not commonly used in counseling research (Barlow, Nock, & Hersen, 2009; Gallo, Comer, & Barlow, 2013). The lack of research may be in part due to the ease and convenience of large-scale data collection such as classrooms or groups (Heppner, et al., 2015). This is unfortunate as single-case designs "are likely the most applicable to counselors in their daily clinical practices as each client presents a single-subject study" (Heppner, et al., 2015, p. 331).

To bring more attention to this type of research design, the American Counseling Association devoted a special issue to SCRD in the scholarly publication the *Journal of Counseling & Development* (Lenz, 2015) to demonstrate how this design can provide evidence for counseling practices (Lenz, 2015). Over past decades, the SCRD has experienced a resurrection of interest in the behavioral literature, which has been attributed to the evidence-based intervention movement (Kazdin, 2011; Vannest, Davis, & Parker, 2013). Ray (2015) asserted that counselors may not be using SCRD because they lack an understanding of how the design is implemented and how to analyze and interpret the data. When used appropriately, single-case research design helps answer research questions pertaining to the effectiveness of an intervention.

Morgan and Morgan (2009) stated the ABA is "a simple yet powerful means of assessing the effects of the independent variable on behavior, and it has played a significant role in both basic and applied behavioral research" (p. 100). SCRD is a user-friendly practitioner research

protocol, and it can be readily employed to assess individuation therapeutic progress (e.g., Morgan & Morgan, 2009). It can be among “the most effective and powerful” research designs for counselors to use in practice (Shadish, Cook, & Campbell, 2002, p. 171). As the interest in SCRD has increased, the scholarly community has worked diligently to find an effective empirical way to quantitatively interpret the data. Since the early 1980s, the statistical techniques available to analyze single-case designs have nearly tripled, but information regarding how to perform these analyses, examine their effect indices and confidence intervals, and deal with atypical data sets is still lacking (Brossart, Parker, & Castillo, 2011).

Aside from statistical analysis, there are a variety of methods to obtain data from the SCRD. Some of the most common methods researchers use are pre-experimental (or AB) design, the withdrawal (ABA or ABAB) design, the multiple-baseline/multiple-probe design, the changing-criterion design, the multiple-treatment design, and the alternating treatments and adapted alternating treatments designs (Byiers, Reichlea, & Symons, 2012). One of the benefits of an ABA design includes its ease of implementation and the ability for investigators to have strong experimental control when the effects are instantaneous and large. The shortcomings of the designs include the ethical concerns regarding withdrawing or reversing an effective intervention and the given that not all behaviors are reversible (Byiers, et al., 2012).

An ABA withdrawal design was employed in the present study. The ABA design begins with an observation of the dependent variables (i.e., anger and aggression) baseline phase (A1) followed by administration of the independent variable (i.e., counseling intervention) during the treatment phase (B) and concludes with another observation of the dependent variables in the withdrawal phase (A2) where there was an absence of the intervention (Lenz, 2015). The

withdrawal phase allows investigators to demonstrate the effects of the manipulated predictor variable by withholding the intervention during a second phase (Byiers, et al., 2012).

Throughout the intervention, multiple observations or measurements were taken in a time-series format, and through self-monitoring, participants served as their own comparison or control condition. This allowed the counselor/investigator to determine whether any changes occurred as a result of the ascribed treatment intervention. Following the SCRDR methodology, data were collected during in session and self-monitoring stages. The data points were graphically plotted for visual analysis, allowing the counselor/investigator to make inferences about the efficacy of the intervention (Heppner, et al., 2015, Lenz, 2015). According to Ray (2015) if a client shows no improvement or a decline during baseline (phase A), but then indicates improvement during the intervention (phase B), there is reasonable support for the efficacy of the intervention.

Additionally, using the ABA design can help establish a protocol for school counselors to use to indicate intervention accountability. School counselors are often required to provide documentation of efficacy to stakeholders such as parents and administrators to justify their allocation of time delivering services to students (Lenz, 2015). According to Baker (2012) “Counseling practitioners who evaluate their local interventions can use the findings to improve their practice and to be accountable to their stakeholders” (p., 42).

Though SCRDRs can be easily employed by school counselors and can provide meaningful results regarding the efficacy of an intervention, they do not come without shortcomings. First and foremost, SCRDRs have small sample sizes affecting the external validity, and the design is prone to threats to internal validity such as attrition, history, maturation, and testing effects (Heppner et al., 2015; Lenz 2015). Despite these disadvantages, SCRDRs “represent

a practical strategy for making inferences about the efficacy of an intervention, establishing evidentiary support for counseling practices, and giving voice to counseling activities with small or understudied populations” (Lenz, 2015, p. 387).

The minimum sample size needed to implement a single-case research design is  $n = 1$ . Most investigators use at least  $n = 3$  to include at least three people to protect against attrition (Lenz, 2015). The present study had four participants to safeguard against attrition and to better assess which intervention(s) worked for which participant(s). The larger sample also increased the study’s external validity.

### **Research Questions**

The ABA single subject experimental design described above was used in the present study to examine the following research questions:

1. What effect does the customized ARAR intervention have on adolescent anger across the treatment and withdrawal phases? Specific sub-questions to be addressed include:
  - 1a. Do participants’ self-reports and self-monitoring indicate a change in cognitive components of anger?
  - 1b. Do participants’ self-reports and self-monitoring indicate a change in behavioral components of anger?
  - 1c. Do participants’ self-reports and self-monitoring indicate a change in affective components of anger?
2. What effect does the customized ARAR intervention have on the aggression of participants across the treatment and withdrawal phases? Specific sub-questions to be addressed include:

- 2a. Do participants' self-reports and self-monitoring indicate a change in proactive aggression?
- 2b. Do participants' self-reports and self-monitoring indicate a change in reactive aggression?
- 2c. Do participants' self-reports and self-monitoring indicate a change in total aggression (both proactive and reactive combined)?
3. How did the participants rate the social validity of the interventions?
4. How did the key staff member rate the effectiveness of the interventions?

### **Participants**

**Population.** The adolescent participants were recruited from the population residing in a southeastern metropolitan county where the non-profit afterschool program was located. The participants attended various middle schools in a district that served approximately 160,000 students in 183 schools during the 2017-2018 school year. The school district of interest was the largest public-school system in the state, serving approximately 37,308 students at the middle school level. The district has 38 middle schools, two academies and two single gender early college schools. The four participants came from three of the 38 schools.

According to the state department of public instruction (2017), data from the county in which participants lived indicated 1399 students in grades 7-13 dropped out of school during the 2016-2017 school year; with 813 being male, 582 being African American, 484 Hispanic, 284 White, 21 Asian, and less than 10 American Indian, Pacific Islander, or Multicultural individuals. Research shows students with behavioral problems such as anger and aggression increase the risk of dropping out (Bradshaw, et al., 2010). Therefore, engaging adolescent participants in



anger regulation interventions can potentially reduce drop-out rates, particularly among students from racial/ethnic underrepresented minority groups.

Also, the school district in which the study took place falls within one of the 13 Southern states that were shown to suspend and expel African American students at disproportionately high rates with suspension rates exceeding their representation in the student body (Smith & Harper, 2015). The 13 identified states were Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, and West Virginia. According to Smith and Harper (2015), 1.2 million African American students were suspended from K-12 public schools within one academic year with 55% of those suspensions occurring in the identified Southern states.

School districts in these states represented approximately 50% of African American student expulsions from public schools in the United States (Smith & Harper, 2015). These data reveal several key points regarding individuals who attend a school in this district. First, the data show significant stratification in disciplinary measures taken with students of color in comparison to White counterparts. Second, this finding was conclusive among both male and female students.

These data reveal several key points regarding the school data indicating that non-White students face a greater risk of academic discipline than their White counterparts. This data shows that African American students are especially at risk of suspension or expulsion for behavioral problems given the state and county disciplinary data. Although race was not specifically identified as a variable of interest, based on the data, the fact that each of the participants in the present study was African American was not unexpected.

The ARAR intervention occurred at a non-profit, partially federally funded afterschool program. According to national data on the afterschool program's 2016 annual report, 29% of youth served were White, 27 % were African American, 24% were Hispanic/Latino, 6% were Bi/Multi-racial, 3% were Asian, 3% were Native American, 1% were Pacific Islander, and the remaining 7% were classified as Other.

Drawing from the population of interest, the ARAR intervention focused on adolescent males who struggle with anger and aggression. The inclusion criteria included: (a) must be male, (b) must be a middle school or high school student, (c) must be between the age of 13 and 17 years, (d) must have difficulty regulating anger and have aggressive behaviors when angry and (e) must attend the non-profit afterschool program that helps with academic and social/emotional development. Participants who were in the direct custody of the state were excluded from the study. To interact directly with parent/guardian and not interfere with other state services that these youth may have been receiving, it was deemed most appropriate not to exclude them from the present study.

**Sample.** A total of four African American middle school students participated in this study. Originally, a fifth student enrolled as a participant. However, this participant only completed one baseline assessment before dropping out of the study. All participants were enrolled in three of the 60 middle schools in a southeastern county and attended the same non-profit afterschool program.

Due to time constraints and financial restrictions, recruiting a random sample was not possible. Therefore, a non-random sampling strategy was used in the present study. The counselor/investigator began the study with four African American adolescent males who were identified by the program personnel as students who had difficulty regulating anger and

aggression. Participant demographic data are reported in Table 1. To protect their identities, participants were assigned pseudonyms.

Table 1

*Participant Demographic Data*

<b>Participant</b>	<b>Age</b>	<b>Grade Level</b>	<b>Suspended 2017-2018</b>	<b>Disciplinary Infraction</b>
<b>Adam</b>	13	7	Yes	Altercation
<b>Jordan</b>	14	8	Yes	Altercation
<b>Devon</b>	13	7	Yes	Threat
<b>Tyler</b>	14	8	Yes	Non-compliance

### **Instrumentation**

The following measures were utilized in the present study: (a) the Multidimensional School Anger Inventory, (b) the Reactive-Proactive Aggression Questionnaire, (c) Attitude toward treatment social validity measure and the (d) Anger Regulation and Aggression Reduction Staff Questionnaire.

**Multidimensional School Anger Inventory (MSAI).** The MSAI served as a measure of anger regulation. There are two versions of the MSAI, the MSAI-36 (MSAI; Furlong, Smith, & Bates, 2002) and the MSAI-12 (Furlong et al., 2013). Both inventories have solid psychometric properties that support their use in evaluating school-based mental health services. To lessen the response burden on participants and avoid excessively testing participants the abbreviated version of the MSAI-12 was selected for the present study (Furlong et al., 2013).

The Multidimensional School Anger Inventory - 12 (MSAI-12; Furlong et al., 2013), is a 12-item self-report questionnaire specifically designed for grades 6 through 12 that measures the

affective, cognitive, and behavioral components of anger in the school setting (Boman, Curtis, Furlong, & Smith, 2006; Furlong, et al., 2002; Furlong et al., 2013). The MSAI's (Furlong et al., 2002) anger components (anger), cognitive (hostility), and behavioral (destructive expression/aggression) were based on the Spielberger et al. (1995) A-H-A model (affective (anger), cognitive (hostility), and behavioral (aggression)). Three scales make up the instrument: the affective component, anger experience (e.g., You get sent to the principal's office when other students are acting worse than you are.); the cognitive component, hostility and cynical attitudes (e.g., Rules at school are stupid); and the behavioral component, destructive expression (e.g., I punch something when I'm angry). All three scales use four response categories (from 1 = I would not be mad at all to 4 = I would be furious). Each of the MSAI-12's scales (e.g., Anger Experience, Hostility, and Destructive Expression) are comprised of four questions. Scores range from 4-16 and are calculated by summing the items in each scale. Higher scores indicate higher levels of anger and aggression.

The MSAI-12 has robust structural validity across multiple national samples and can be used to assess the effects of an anger intervention in the school setting (Furlong, et al., 2013). Overall, the instrument has good reliability ( $\alpha=.84$ ) for youth in the United States (Furlong, et al., 2002). Both internal consistency of the subscales and construct validity have been documented, with internal consistency on anger experience ranging from .79 – .87, on hostility ranging from .78 – .89, and destructive expression ranging from .77 – .84 (Furlong, et al., 2002; Furlong et al., 2013). Criterion-related validity ranged between .39 to .54 between the MSAI and other measures of anger and aggression (Fryxell & Smith, 2000; Furlong, et al., 2002; Smith, et al., 1998). The MSAI-12 reportedly has a fourth-grade reading level and can be administered

individually or in groups with an estimated duration of 15 minutes (Furlong et al., 2002; Jimerson, Nickerson, Mayer, & Furlong, 2012).

Psychometric properties of the Multidimensional School Anger Inventory (MSAI) have been established using samples from the five Pacific Rim countries (Australia, Guatemala, Japan, Peru, and the United States) supporting the instrument's structural validity (Furlong et al., 2013). Additionally, the MSAI has been used with samples drawn from Australia (Boman et al., 2006; Boman, Smith, & Curtis, 2003; Boman & Yates, 2001), Japan (Bear, Uribe-Zarain, Manning, & Shiomi, 2009; Terasaka, 2011), Iran (Aryadoust, Akbarzadeh, & Akbarzadeh, 2011; Ghanizadeh, 2008; Ghanizadeh & Haghghi, 2010), the Philippines (Campano & Munakata, 2004), United States (Fryxell & Smith, 2000; Furlong & Smith, 1998; Furlong, Smith, & Bates, 2002; Smith, et al., 1998), and Vietnam (Barker, Grefe, Burns, & DiGiuseppe, 2008). Given the MSAI's extensive use within various parts of the world, it is one of the few anger instruments that can be used within the school setting that shows cross-cultural structural validity (Furlong et al., 2013).

The MSAI has several advantages for use in a school setting. First, it is one of the few anger scales specifically designed to be used with adolescents who struggle with anger in school. Second, it is user-friendly and does not take long to administer and score. Third, it is a valid instrument that has shown reliable cross-cultural results. Fourth, it is a free resource and permission to use can easily be obtained by contacting the authors for consent. One of the primary disadvantages is that it does not give the depth that a clinical and diagnostic assessment can provide. For the purposes of this study, the advantages of utilizing the instrument outweigh the disadvantages. Due to the sequential order of the questions, the items in the MSAI-12 could not be randomized for the present study.

**Reactive–Proactive Aggression Questionnaire (RPQ).** The RPQ served as a measure of reactive, proactive, and total aggression in the present study. The RPQ is a 23-item self-reported measure of reactive and proactive aggression (Raine et al., 2006). The assessment was normed on an adolescent male population ages 7 and 16 years. RPQ items contain both verbal and physical forms of reactive and proactive aggressive behaviors and are presented at a third-grade reading level. Participants are asked to rate each item in terms of frequency of occurrence using a three-point Likert-scale (0=never, 1=sometimes, 2=often). The RPQ provides three scores: proactive aggression, reactive aggression, and total aggression (Raine et al., 2006). The RPQ contains 12 questions itemizing proactive aggression (e.g., “Used force to get money or things from others”) and 11 items measuring reactive aggression (e.g., “Hit others to defend yourself”). Scores are summed and provide a measure of both reactive or proactive aggression, as well as total aggression with higher scores indicating higher levels of aggression. For this study, the questions were randomized to help prevent familiarity with question order.

Factor analyses with adolescent samples have supported the two-factor conceptualization of the items (Baker, Raine, Liu, & Jacobson, 2008; Raine et al., 2006). Evidence supporting the construct validity and reliability of the scales has been reported across several studies (Baker et al., 2008; Raine et al., 2006). The internal consistencies for the reactive ( $\alpha = .81$ ), proactive ( $\alpha = .84$ ) and total aggression ( $\alpha = .89$ ) scales are well within the acceptable range (Raine et al., 2006). The RPQ takes approximately three-minutes to complete (Raine, et al., 2006).

Similar to the MSAI, the RPQ has been validated cross-culturally. Using a sample of 11-year-old Chinese students, Tuvblad, Dhamija, Berntsen, Raine, and Liu, (2016), found the RPQ was psychometrically similar to the results obtained in the United States. Therefore, the instrument did not need to be modified to measure aggressive behavior in Chinese samples

(Tuvblad, et al., 2016). The RPQ (Raine et al., 2006) has also been translated into different languages and has showed successful results outside of the United States, including in Italy (Fossati et al., 2009), Hong Kong (Fung, Raine, & Gao, 2009), Singapore (Seah & Ang, 2008) and the Netherlands (Collins, 2014). Furthermore, researchers in the United States (Tharp et al., 2011; Tuvblad et al., 2009) have used the RPQ with youth from various backgrounds such as White, African-American, Asian-American, Hispanic, and multiethnic youth in the United States.

The RPQ has several advantages. First, it is quick to administer and easy to score. Next, it has a reading level that makes it acceptable to use with students of various academic ability levels. Last, the instrument is free and only requires author consent. One of the primary disadvantages is that it does not give the depth of information that clinical and diagnostic assessment can provide. As school counselors are not involved in the diagnosis, nor in providing clinical services, the RPQ provides a wealth of information in designing a customized intervention.

**Social validity measures.** The concept of social validity was first described by Wolf (1978) as the value that is placed on an intervention. Wolf (1978) first introduced social validity as an evaluation of three distinct areas: the social significance of treatment goals, the social appropriateness of the procedures, and the social importance of the effects or outcomes. The construct of social validity is deeply embedded in behavior analysis, and it “attempts to go beyond ‘clinical judgment’ to derive information from the broader social environment of the individual(s) whose behavior is being changed” (Kennedy, 1992, p. 147). Social validity challenges counselors to look beyond their subjective judgments and respect the client’s perception of how well the intervention is working. In the present study, two measures of social

validity were used, one that asked for the key staff member's feedback and one that asked for participant feedback.

***Attitude Toward Treatment (ATT).*** The ATT (Baker, n.d.) was used to acquire participant social validity feedback. Participants completed the ATT as a post-intervention. It is a self-report measure designed to assess how confident participants reported being with the intervention. The ATT has been used as a measure of social validity in other studies (Dowden, 2010; Kiselica, Baker, Thomas, & Reedy, 1994; Williams, 2015). The instrument has fourteen 7-point Likert-type items worded to reflect the post-intervention attitudes of the participants. In question six, the item is in reverse order, so when computing the score, it was weighted to match the consistency in scoring with 7 being the highest weight. The scale ranges from 14 to 98 with higher scores indicating an increased level of confidence in the intervention's effectiveness. The ATT serves as a measure of social validity because it provides a measure of the students' subjective experiences (Hott, Limberg, Ohrt, & Schmit, 2015). A copy of the ATT can be found in Appendix A.

***ARAR Staff Questionnaire.*** The Anger Regulation and Aggression Reduction Staff Questionnaire (ARAR-SQ) was employed to solicit feedback about the perceived pre-post effectiveness of the intervention. This questionnaire assessed the key staff member's opinion of the intervention's effectiveness. The key staff member was very knowledgeable about each student and answered questions pertaining to observed differences (e.g., pre-test: The student appears to have difficulty controlling his anger in the school setting) and (e.g., post-test: The student continues to have difficulty controlling his anger in the school setting). Items were organized on a 5-point scale (1 = strongly disagree to 5 = strongly agree). A copy of the ARAR-Pre/Post Staff Questionnaire can be found in Appendix B.



### **Summary of Dependent Variables and Dependent Measures**

Two of the four research questions were made up of six factors, three pertaining to anger (a) affective, (b) behavioral, and (c) cognitive, and three pertaining to aggression (a) proactive, (b) reactive, and (c) total aggression. The remaining two research questions added to the social validity of the study. An explanation of what follows is a summary of the dependent variables in the present study and the dependent measures utilized to assess these variables.

1. The dependent variable of anger, which was divided into three components, (a) affective, (b) behavioral, and (c) cognitive were measured by scores on the MSAI-12.
2. The dependent variable of aggression, which was divided into three components, (a) proactive, (b) reactive, and (c) total aggression was measured by scores on RPQ.
3. Social validity based on participants the experiences and thoughts of the intervention were measured by the ATT.
4. Social validity based on the key staff member's perceptions of the intervention's effectiveness was measured using the ARAR Staff Questionnaire.

### **Anger Regulation and Aggression Reduction (ARAR) Interventions**

In the present study, the customized individual counseling interventions were designed to help participants regulate their anger and reduce their aggressive behaviors. These customized interventions served as the independent variable in the study. The counseling interventions were delivered during an eight-week program that the counselor/investigator developed and named *Anger Regulation and Aggression Reduction (ARAR)*. ARAR was built on an empirical theoretical foundation that was used to develop the framework in which the counselor/investigator used to create the individualized treatment plan based on participants' anger and aggression scores obtained on the MSAI-12 and RPQ. The information presented in

this section provides a detailed explanation of the development and creation of the ARAR program and information pertaining to the counselor/investigator's experience in the field of counseling. This section is comprised of three subsections: (a) integration of theory into the interventions, (b) customized ARAR interventions and (c) counselor/investigator experience.

**Integrating theory into the interventions.** The use of theory in intervention designs and evaluations has many benefits. First, the theoretical constructs can be used to develop the intervention because they are related to targeted behaviors in the intervention (Michie & Prestwich, 2010). Changing key constructs that are related to behavior will, theoretically, lead to changes in behavior (Hardeman et al., 2005). Thus, using theory to develop an intervention leads both to “a steadily richer and more potent picture of how things work” (Clarke, 1987, p.35).

The ARAR intervention utilized Cognitive Behavioral Theory, Relational Frame Theory (Hayes, et al., 2001) with specific elements taken from Acceptance and Commitment Therapy (Hayes, 2005; Hayes, 2008) and the Social Information Processing model (Crick & Dodge, 1994). Previous studies have shown that utilizing developmental and cognitive behavioral models in adolescent anger interventions, similar to the one applied in this study, has helped youth learn coping skills to reduce anger and aggression (Barnes, et al., 2014; Ghanizadeh & Haghghi, 2010; Luciano, et al., 2011; Sukhodolsky, et al., 2016).

The intervention applied RFT concepts to help participants examine the interplay of language and cognition in the processing of emotions (Hayes, et al., 2001). Exploration of how former experiences contribute to current psychological events allowed participants to see how their past can inflict psychological pain. To help participants learn to interact differently with these troublesome experiences, the ARAR intervention incorporated ACT based on principles such as acceptance and defusion to promote psychological flexibility.

According to ACT, defusion is changing the way that we interact with thoughts by creating contexts or situations in which unhelpful thoughts are diminished (Hayes, 2004). This is accomplished through the mindfulness skills of self-soothing, relaxation (i.e., progressive muscle relaxation), and mental imagery. Specifically, these skills were utilized as calming techniques to help de-escalate an anger and aggression episode. The overarching objective was to help participants become more flexible and recognize the malleability of their thoughts. Through distancing, participants learned to separate themselves from their thoughts and become active observers (Luciano, et al., 2011).. These skills required using hierarchal framing to make direct and indirect associations. Framing exercises can help clients choose rules that specify what is most important to them to help better regulate emotions (Luciano, et al., 2011).

Whereas RFT helps individuals work through the emotional process of anger, SIP addresses aggressive behaviors within a social context. The SIP model complements RFT in that it examines how youth process problems and behave in social situations. According to SIP, past experiences, memories, and formed schemas play an active role in how youth respond in various situations (Crick & Dodge, 1994). In SIP aggressive behaviors are thought to be a result of cognitive deficits in social information processing (Wilson & Lipsey 2007). The model uses six steps to explore underlying social information processing problems. These steps include: (a) or clarifying a goal, (b) producing or accessing possible responses to meet the chosen goal, (c) selecting a response, and (d) executing the behavior (Crick & Dodge, 1994). These six steps were woven into the ARAR intervention allowing participants to practice the steps by using perspective taking in anger-provoking situations. Applying the SIP model allowed the ARAR intervention to help participants examine the cognitive processes that precede aggressive

behavior (Arsenio & Lemerise, 2010; Li., et al., 2013; Oostermeijer, et al., 2016). The integration of theory in the ARAR intervention is illustrated in Figure 1.

To help the behaviors generalize to other settings, participants had an opportunity to apply the skills to various role play social situations. SIP proposes that aggressive youth and nonaggressive youth differ in their ability to process social information (Wilson & Lipsey, 2007). Though most cognitive behavioral programs focus on altering faulty cognitions that may result in anger, the present intervention focused on teaching how cognitions play a role in inflexibility, and through defusion, framing exercises and interpersonal skill development, participants were exposed to skills to help them regulate their anger and reduce their aggressive behaviors.

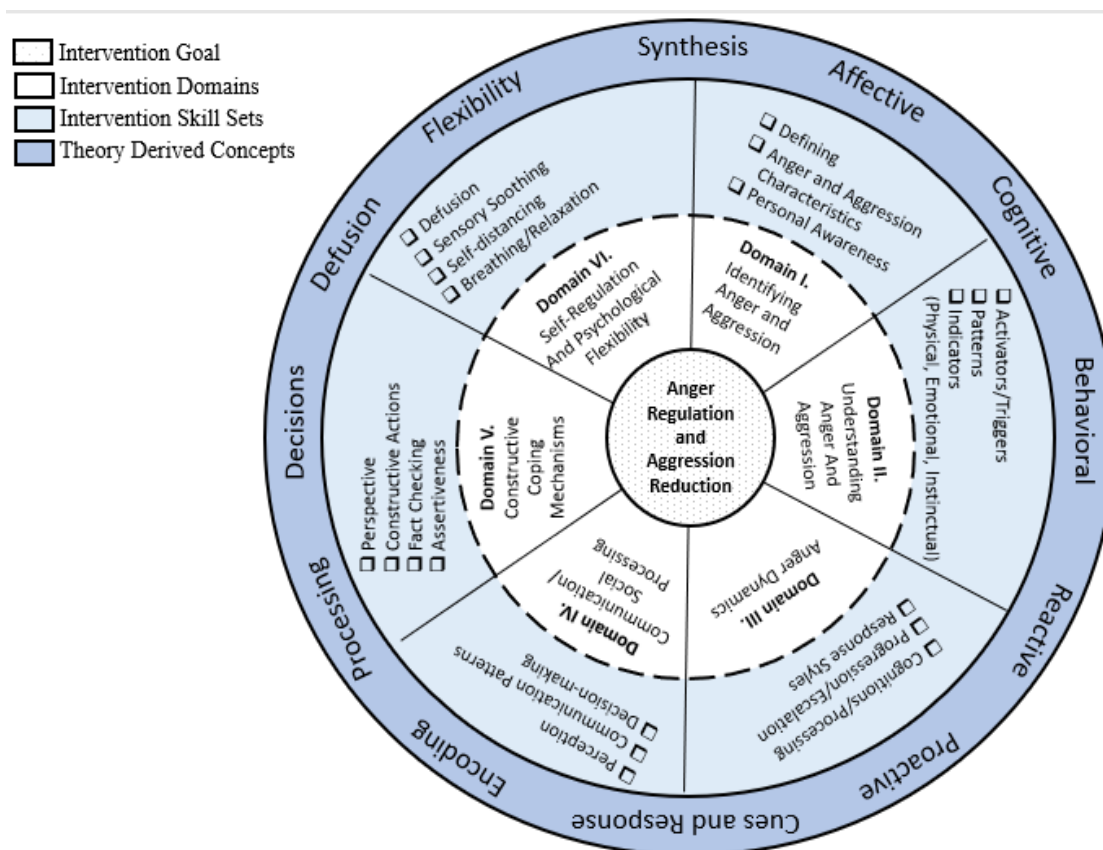


Figure 1. Anger regulation and aggression reduction (ARAR) theory to intervention paradigm.

**Customized individual ARAR interventions.** The present study examined the effects of a customized individual counseling intervention designed to address the problematic anger and aggressive behavior of four adolescent males. Though modifications were made for each participant based on their individual characteristics, all received interventions based on the ARAR framework described herein. The independent variable of the study was the ARAR intervention, which was delivered over the course of four-weeks. Baseline data were collected during weeks one and two, and during weeks seven and eight, withdrawal data were collected.

The Anger Regulation and Aggression Reduction (ARAR) intervention used psychoeducational components throughout the six sessions. The sessions were structurally designed based on students' direct and indirect needs and were a sequential continuation of previous sessions. Each intervention was personalized to address participants' needs based on their lowest and highest assessment scores on the MSAI-12 and RPQ. For example, an intervention set up for a student who scored low on cognitive components of anger and high on reactive aggression would be different from a participant who scored low on behavioral components of anger and high on proactive aggression.

Due to the diverse needs of the participants, each intervention covered two key areas, including anger (e.g., affective, behavioral, cognitive components) and aggression (e.g., proactive and reactive components and total aggression). During the initial individual meeting, participants identified social/emotional goals and an academic goal to align with the afterschool program's mission of promoting academic success. Additionally, with assistance from the counselor/investigator, each participant developed a sequential action plan that addressed identified needs. The ARAR intervention framework can be found in Appendix C. A list of

supplemental activities found in *The Anger Workbook for Teens* (Lohmann, 2009) is located in Appendix D.

Goals listed on the ARAR plan adhered to the ASCA (2014a) Mindsets and Behaviors for Student Success where participants created goals that addressed the domains of academic development and social/emotional development. Using the tenets of the ASCA (2012a) National Model, the counselor/investigator helped participants strategize, manage, and monitor their behavior by establishing goals specific to the academic setting and personal goals.

The activities listed on the ARAR plan reflected participants' anger and aggression need based on their MSAI-12 (Furlong et al., 2002) and RPQ (Raine et al., 2006) assessments. The counselor/investigator and participants collaboratively worked together to identify the purpose of the activities, the desired outcomes, the duration of the activities, and which goal(s) each activity covered. Each week the counselor reviewed the ARAR plan and monitored participant progress toward completing assigned activities and discussed any barriers that may have hindered goal attainment.

The intervention session was systematically organized to ensure treatment fidelity. In the intervention phase (weeks 2 through 6), the counselor/investigator utilized a cognitive-behavioral treatment format (Beck, 2011) that begins with an agenda-setting exercise that includes: (a) a check-in/update and review of goals, (b) a bridge from the previous session, (c) a review of the homework, (d) a discussion of the agenda items, (e) an open discussion; (f) a new homework assignment, and (g) a summary and feedback discussion.

Activities in *The Anger Workbook for Teens* (Lohmann, 2009) were used as a supplemental/homework guide to the individual sessions, and they helped participants practice their newly acquired skills. *The Anger Workbook for Teens* (Lohmann, 2009) is a cognitive

behavioral self-help book that uses behavioral principles such as acceptance and defusion to promote psychological flexibility. The workbook helps teens identify their anger triggers, notice the physical and psychological signs associated with the emotion, and learn healthy skills to cope with and handle anger. The activities were selected based on the participant's goals and ARAR plan. Each assigned activity took between 10 and 15 minutes to complete.

To ensure consistency within each intervention, the structure of the protocol was followed throughout the duration of the study. Each participants ARAR plan can be found in Appendix E.

**Counselor/investigator experience.** The counselor/investigator was a 45-year-old White woman enrolled in a counseling and counselor education doctoral program at a southeastern university. She was the study's principal counselor/ investigator who developed each ARAR intervention and collected and analyzed the data. The counselor/investigator holds a Bachelor of Arts degree in Psychology with a concentration in Family and Child Studies and a Master of Science degree in Counselor Education with a concentration in School Counseling. She is Licensed Professional Counselor Supervisor, a National Board Counselor, and a Global Career Development Facilitator who has professional experiences in the areas of administration, school counseling, clinical, adolescent and family counseling and has over 20 years of experience working in the school setting with students, parents, faculty and administration.

Over the course of her career, she has conducted research and published three books on the topic of adolescent anger. The counselor/investigator became interested in anger early in her career when she worked at a large southeastern university conducting research for a state-wide intervention program that provides education and mental health treatment to youth who were both assaultive and emotionally and behaviorally disturbed. Since that time, the

counselor/investigator has become devoted to helping angry and aggressive youth. She is instrumental in the development of customizable intervention programs that are used in clinical settings, judicial settings, and psychiatric hospitals serving behaviorally and emotionally disturbed youth. To continue her interest in the domain of adolescent anger and aggression, the counselor/investigator solicited the assistance of a nonprofit afterschool program serving students in the district of interest.

**Key staff member experience.** The key staff member was a 32-year-old African American male who had been employed at the afterschool program for nine and-a-half years. The key staff member personally knew the participants and their respective families. He was able to provide insight on their progress based on his knowledge and relationship with each participant.

## **Procedure**

**Recruiting participants.** After Institutional Review Board (IRB) approval, the counselor/investigator requested permission from a non-profit partially federally supported afterschool program to conduct the investigation. The counselor/investigator met with the key program staff member to discuss the purpose of the study, the assessment process, the intervention components, and the length of the intervention. Prior to the beginning of the study, a key staff member (i.e., a person that interacted and worked with the youth on a regular basis) selected five male adolescents that were identified as prospective participants. The key staff member was provided with a script and recruitment flyer to share with prospective parents and participants (see Appendix F).

Interested parents and participants were invited to meet individually with the counselor/investigator to learn about and discuss the study in more detail. Prospective parents



and participants were informed of the nature of the study, what participants may gain from the study, general topics that would be covered during individual counseling sessions, expectations of participants, the length of the intervention, and the intended use of the results. Additionally, it was disclosed that the key staff member would complete a pre-post questionnaire to determine whether there was an observable change in the participant's behaviors after the intervention. To maintain consistency in what information was shared, the counselor/investigator referred to a script (see Appendix F). Upon agreement from both parents and participants, the counselor/investigator disseminated hard copies of the consent and assent forms (see Appendix G). The counselor/investigator worked closely with the key staff member to obtain all signed consent/assent forms. At the conclusion of the ARAR intervention, participating participants received a \$30.00 gift card as a token of appreciation for completing the study. In the event of a student prematurely leaving the study, the gift card was to be pro-rated. No participants withdrew from the present study.

The key staff member was asked to voluntarily complete a pre-post-questionnaire to document any observable changes in the participant's social/emotional skills with the pre/post-intervention. The counselor/investigator informed the staff member that participation was for research purposes only and was completely voluntary. Upon agreement, the key staff member signed a personnel consent form (see Appendix G). At the conclusion of the ARAR intervention, the key staff member received a \$30.00 gift card as a token of appreciation.

**Data collection.** An N=1/ABA single-case research design was used for this study. During phase A of the study (baseline phase), the counselor/investigator met with each participant to show them where to locate the MSAI-12 and RPQ and answer any questions the participants had about the process. To ensure participant confidentiality, respondents completed

the assessments via *Qualtrics*, a web-based survey data analysis service. Reminders to take the assessments were sent individually to participants via the *Remind* App with links to the assessments. To ensure participants were able to log onto the system and complete the assessments, the counselor/investigator assisted each student with their initial logon and answered any program related questions. The battery of instruments took less than five minutes to complete.

All participants logged into *Qualtrics* using a code and pseudonym in lieu of their name, and this action helped to secure their identity. Items on the MSAI-12 were not randomized because the order in which the questions were written did not lend itself to altering the item sequence. Items on the RPQ were randomized each time the participant took the assessment. The randomization helped decrease familiarity with the order of the questions. The completed assessments helped the counselor/investigator create an initial plan that focused on the participant's anger regulation and aggressive behavioral needs prior to treatment. The counselor/investigator also developed a time sheet for each participant consisting of a *Qualtrics* link via a university portal to complete the instruments electronically. Participants were instructed to complete the instruments on the assigned dates during the two weeks before the first counseling intervention session. Assessments were administered two to three times weekly, and participants were given a schedule via the *Remind* app noting when to complete the assessments.

During phase B of the study (intervention phase) the counselor/investigator met with participants individually for a full session (50 to 60 minutes) during the treatment phase (weeks three through six). The first session focused on rapport building, identification of the presenting problem, and establishing academic and personal goals. Participants were also given a copy of *The Anger Workbook for Teens* (Lohmann, 2009) to use as a supplemental support guide. During

the first session, the counselor/investigator reviewed the assessment results with each participant. Following the review, the counselor/investigator introduced the Anger Regulation and Aggression Reduction (ARAR) plan to the participants and worked collaboratively with them to complete the plan (see Appendix E).

Each treatment session began with a review of the previous session goals and progress toward meeting the designated goals. Each goal focused on increasing anger regulation and reducing aggression as determined by the MSAI-12 and RPQ scores. At the close of each session, participants completed the MSAI-12 and RPQ. To monitor individual change, each participant's assessment scores were visually plotted on a line graph weekly throughout the duration of the study. The dependent variables (i.e., MSAI-12 and RPQ factors) were plotted on the ordinate or y-axis, and the temporal variables were plotted on the abscissa or x-axis of the graphs.

After the final session in phase B (intervention phase), participants completed the Attitude Toward Treatment (ATT) form, a self-reported measure designed to assess participants' attitudes about the value of an intervention. The key staff member administered the ATT electronically through *Qualtrics*. Following treatment (phase A), the counselor/investigator conducted a two-week follow-up to treatment (weeks 7-8). During this time, participants completed the MSAI-12 and RPQ four times. This process assessed for any changes in scores after the withdrawal of the intervention. Following the last assessment entry, each participant received a \$30 gift card as a token of gratitude for their participation.

Data were collected over 8 weeks. Baseline was made up of four assessment snapshots in weeks one and two. The intervention stage lasted four weeks and included six sessions with

assessments prior to each counseling session and four follow-up measures obtained in weeks seven and eight. A schedule of data collection is displayed in Figure 2.

To externally assess pre- and post-intervention, the key staff member completed the Anger Regulation Aggression Reduction Staff Questionnaire (ARAR-SQ) during week one baseline data collection and once again during week eight of the withdrawal phase. The pre-post feedback provided a snapshot of whether another person who worked closely with the youth had noticed a difference in the participant's anger and aggression. Upon completion of the questionnaires, the key staff member received a \$30.00 gift card.

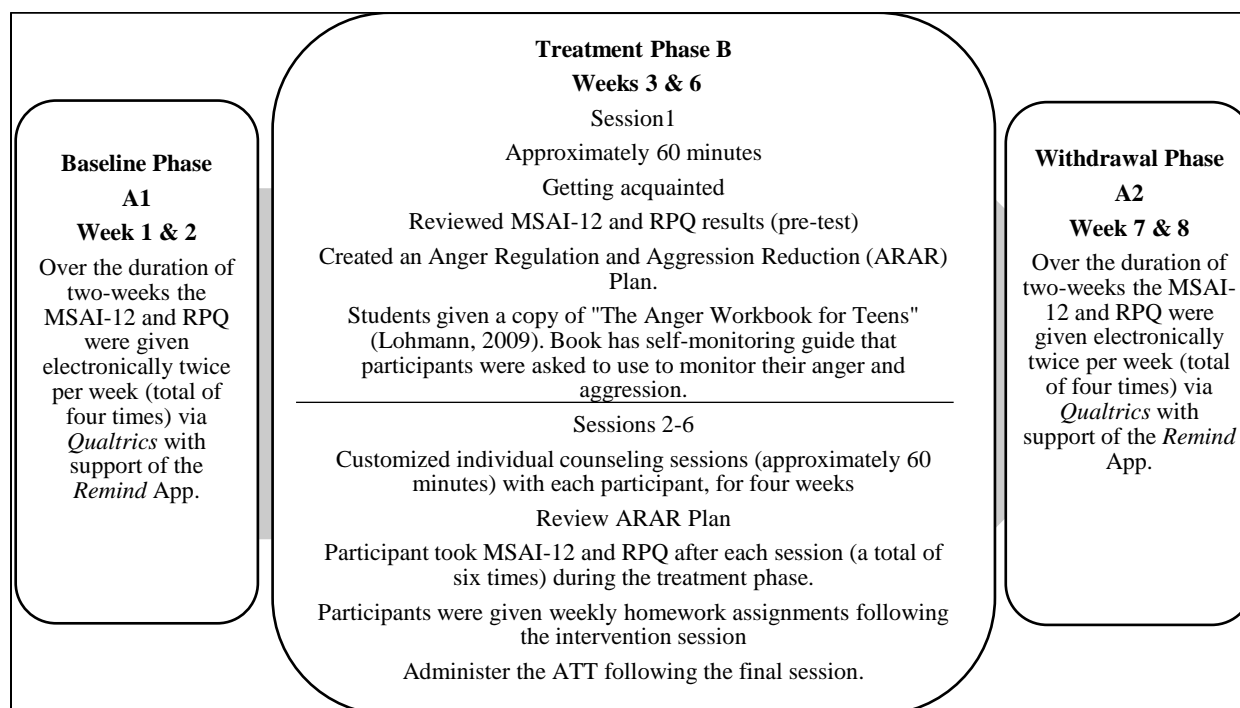


Figure 2. Schedule of data collection.

**Data analysis.** Four research questions pertaining to anger and aggression were addressed in the present study. The first two questions were related directly to the measures of anger and aggression; the latter two questions focused on social validity. To strengthen the results of the present study, multiple layers of analyses were performed including (a) visual

analysis, (b) descriptive statistics, (c) data exploration through autocorrelation and regression analysis, (d) effect sizes, (e) parametric analysis, and (f) social validity measures from both participants and the key staff member. What follows is an explanation of the data analysis used in the present study.

**Visual analysis.** Visual analysis is the most widely used method in SCRD and is considered the gold standard for single-case research design. The graphic representation of the data provides the basis for interpreting and determining an intervention's effect (Hott et al., 2015; Vannest & Ninci, 2015). In the present study, the time series data were plotted graphically on  $y$  (dependent variable) and  $x$  (temporal variable) axes for each participant. The visual graphs allowed the counselor/investigator to examine trends, changes, and the stability of the intervention's effects across participants.

**Descriptive statistics.** Next, descriptive statistics, measures of central tendency, and the dispersion of the data were reviewed. Due to a few observed outliers, a trimmed or truncated mean was calculated. The trimmed mean is more robust than the mean, and it is less affected by observations in the center of the distribution (Bulté & Onghena, 2013). Thus, the trimmed mean provided a more accurate picture of the data's distribution. Additionally, quantiles were calculated, which also provided an opportunity to see the distribution divided into areas of equal probability. Reviewing the dispersion of data, provided an opportunity to see if autocorrelation was occurring and examine any emerging trends within the observations.

**Data exploration.** It was important to look for autocorrelation and trends between phases, as determined through regression analysis. Autocorrelation analysis, or the serial dependency of errors, helped determine whether each observation within each phase and factor of the study was independent, a key assumption for parametric analysis methods (Bloom, Fischer, & Orme,

2006). After the autocorrelations were completed, regression analyses were run to determine if there were significant trends in any phase for each factor of the study. If in any phase a significant trend was present, it was determined that parametric analysis would not provide reliable information.

***Effect sizes.*** To delve further into the impact of the ARAR interventions, effect sizes were calculated. Vannest and Ninci (2015) define effect size (ES) as a “quantitative index that estimates the meaningfulness of change associated with the intervention” (Vannest & Ninci, 2015, p. 403). Using effect size alongside visual analysis provides additional credibility, reliability, and defensibility of the findings (Vannest & Ninci, 2015). For the present study, G-index was calculated to determine effect size (Cohen, 1988). The G-index was chosen because it is the preferred method to use with smaller samples (Cohen, 1988). Also, the G-index is robust to outliers, trend, and autocorrelation, making it a stronger method of estimating effect sizes. The G-index was calculated using the proportion of scores in the desired zone above the regression line. The desired zone is above the regression line due to an expected increase in score from the baseline to the treatment phase. The baseline average was then subtracted from the intervention average. A positive value indicates an improvement in the score, and a negative value indicates no improvement. The G-index was calculated using the mean for variables that were not autocorrelated and did not have a significant trend. In cases where there was autocorrelation or a significant trend, the median was used. Criteria for interpreting the G-index is small (0.1-0.3), medium (0.31-0.50), and large (>0.51).

***Statistical analysis.*** After pulling back multiple layers of the data, the objective was to further explore the effects of the study by looking at whether there was a statistical difference detected between the phases. To do so, an absence of robust autocorrelation in the treatment

phase across most factors and trend for most phases and factors was looked for, and then parametric analyses were conducted. Traditional analysis of variance (ANOVA) and Tukey's HSD post-hoc test made it possible to compare treatment to baseline, withdrawal to baseline, and withdrawal to treatment phases. The data added a rich layer of support to the primary visual analyses, regressions, and effect sizes.

***Treatment fidelity.*** Throughout the study, the counselor/investigator documented any unforeseen circumstances that may have influenced the results, such as any behaviors or changes in the participant's home or school environment. Documenting these events and occurrences helped control for threats to the internal validity and increased external validity (Hott et al., 2015). Additionally, information was collected post-intervention from the participants through the ATT and pre- and post-feedback from the ARAR Staff Questionnaire. These additional measures added a final layer of credibility to the findings.

**Summary of the data analysis.** In the present study, examining the data began with the most basic form of data analysis, visual. Delving deeper and deeper into the data, the counselor/investigator pulled back each layer using detailed analyses to examine each intervention's effects. From visual data to parametric analysis, numerous methods were employed to solidify the findings. Each non-parametric and parametric measure helped strengthen and support the results. However, beyond the numbers lie the voices of the participants and the key staff member. In the final most intricate layer of the study, the counselor/investigator sought out information from those who were most directly impacted by the interventions. The perceived effectiveness from both participants and the key staff member were complimentary of each layer of the data analysis.

**Summary of Chapter Three**

This chapter addressed the methodology of the present study. Included in this chapter were explanations of the study's research designs, participants, research questions, instrumentation, customized intervention program, data collection, and analysis procedures. Detailed information pertaining to the ARAR intervention for each participant during the treatment phase was presented in the appendices.



## CHAPTER 4: RESULTS

The purpose of the present study was to examine the effects of customized school-based anger regulation and aggression reduction intervention with male adolescents. An individual counseling intervention addressing problematic anger and aggression was created entitled *Anger Regulation and Aggression Reduction (ARAR)*. The ARAR program was based on a theoretical framework, and the interventions were customized based specifically on the anger and aggression needs of four adolescent males. The element of individualization was determined by participant scores on two measures, the Multidimensional School Anger Inventory-12 (MSAI-12; Furlong et al., 2013) and the Reactive Reactive–Proactive Aggression Questionnaire (RPQ; Raine et al., 2006). Using a single-research design (SCRD) the effects of the interventions were examined. Data from the baseline (A1), treatment (B), and withdrawal (A2) phases were analyzed via an R software package, “SSDfor4,” used for analyzing single-subject data (Auerbach & Zeitlin, 2014).

The information in this chapter is organized to address the four research questions that governed the present study. The data for research questions one and two addressing the dependent variables anger and aggression are presented individually by the participant. Each participant’s section begins with a simple biography and the goals that were established at the onset of the study followed by the results broken down by each component of anger and aggression. Following the results is a collective summary along with visual analysis for each factor component across participants.

Research questions three and four pertained to social validity measures. Question three examined participants’ perceptions of the effectiveness of the intervention. The Attitudes Toward Treatment (ATT) (Baker, n.d.) measure was given to each participant following the intervention

to gather the information about his ARAR experience. Results of the ATT are provided with an explanation of the perceived effectiveness. Additionally, in research question four, the key staff member completed a pre- and post-questionnaire (ARAR-SQ) pertaining to participant behaviors before and after the intervention. The key staff member's responses are provided via individual participant. The social validity measures added an extra layer of support to the visual and quantitative analyses.

### **Anger and Aggression Factors by Participant**

To answer research questions one and two, anger and aggression were sub-divided into six components. What follows is how each factor was measured along with a description of the components. Anger was measured using the MSAI-12 and had three components: (a) affective component is defined as the strength of emotional responses toward anger-provoking situations, (b) cognitive component is the negative beliefs and the rumination on hostile thoughts, and (c) behavioral component is the coping mechanisms individuals use to express anger (Boman, 2003; Spielberger, et al., 1995). Aggression was measured by the RPQ and also had three components: (a) proactive aggression is the deliberate, unprovoked, coercive aggression to obtain some desired outcome (Crick & Dodge, 1996; Dodge & Coie, 1987), (b) reactive aggression is the defensive, revengeful response to a perceived threat building up to a retaliation (Crick & Dodge, 1996; Dodge & Coie, 1987) and (c) total aggression is the summation of both proactive and reactive scores on the Reactive–Proactive Aggression Questionnaire (RPQ) (Raine et al., 2006). Both the MSAI-12 and RPQ were completed simultaneously by all participants throughout the intervention as a method for data collection. For each participant, visual and statistical analyses were completed for factor and phase via the R software package, “SSDfor4,” (Auerbach &

Zeitlin, 2014). The G-index statistic in the present study was used to calculate effect size (Cohen, 1988).

Participants' individual data are presented in the following order: (a) visual analysis, (b) descriptive statistics, (c) data exploration, (d) effect sizes (e) statistical analysis, and (f) summary. It should be noted that originally, the study consisted of five participants, but due to unforeseen medical issues, the fifth participant only completed one baseline observation before withdrawing from the study.

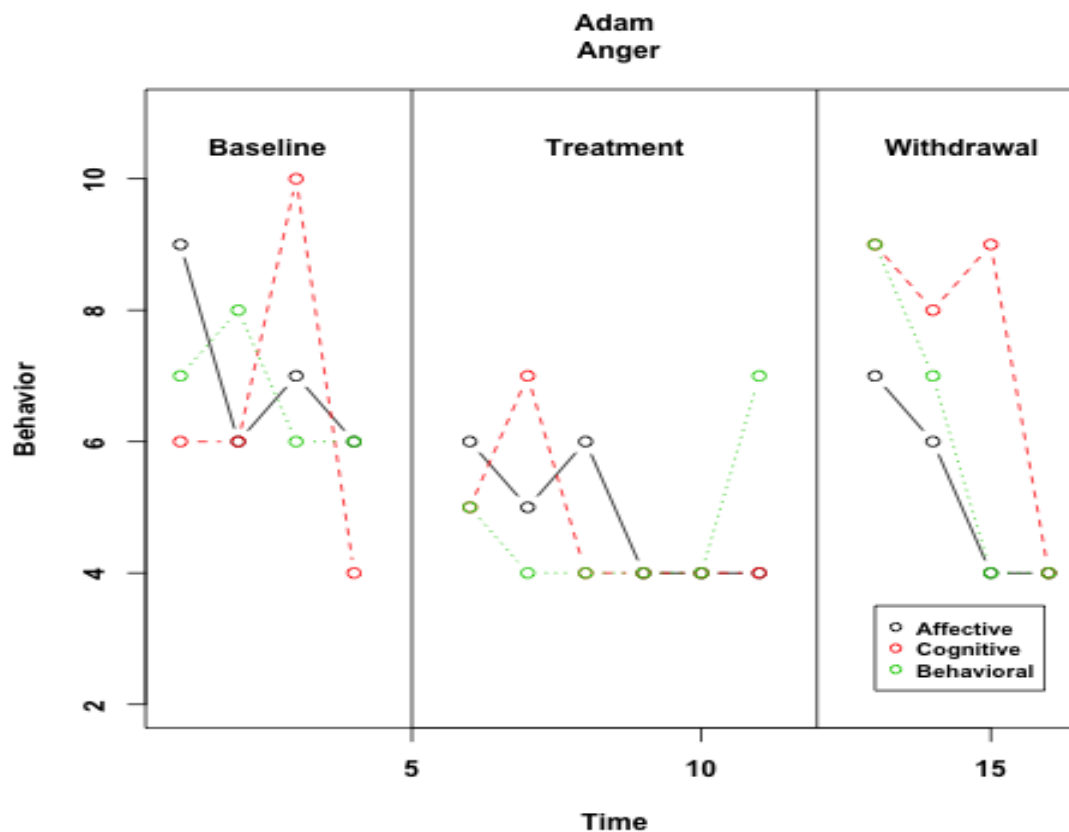
### **Adam**

Adam was a 13-year-old African American male who had been suspended during the current school year for initiating an altercation with another student. Adam took full responsibility for his actions and realized that he often let his emotions get the best of him. He also expressed remorse for his behaviors but added that when he gets angry, he acts out impulsively rather than responsibly. Adam attributed a lot of his anger and aggression in choosing to hang out with the wrong people and being a follower, not a leader. Adam reported living in a supportive environment with both parents who had high expectations of him to do well in school. Adam also had an older brother who was in college and served as his role model.

At the onset of the study, Adam identified four anger and aggression goals and one academic goal (see Appendix E). Goal one: To learn to identify anger triggers and how anger can lead to poor behavioral choices (aggression). Goal two: To learn how to look at the pros and cons of a decision and act on the best choice rather than acting on a whim, especially in social situations when peers are making poor choices. Goal three: To decrease problematic behavior with friends by learning to identify healthy relationships and utilize good decision-making skills

regarding peer interactions and social choices. Goal four: To learn skills to cope with frustrating situations. Adam was a good student who wanted to do well in school and follow his brother's lead of going to college. He aspired to be a basketball player and wanted to play professionally, so he knew his grades were important. As such, he set the academic goal of ending the school year with all As and Bs.

**Visual analysis.** Regarding anger, Adam displayed a great deal of variability in the baseline phase (see Figure 3). The affective and behavioral components were less variable than the cognitive component. In the treatment phase, there was an initial decrease in all components of anger over the course of treatment. The behavioral component showed an increase at the end of treatment. After treatment, the withdrawal phase indicated a steep increase in all factors, but over time, Adam's anger responses returned to treatment levels, showing that the ARAR intervention did have a positive effect on his anger. Overall, the ARAR intervention appeared successfully reduce the affective and behavioral components of Adam's anger.



*Figure 3.* Visual analysis of components of anger for Adam.

Regarding aggression, Adam had a great deal of variability in proactive and total aggression during the baseline phase of the study with reactive aggression being more stable (see Figure 4). During the intervention, Adam displayed a steep decline in all aggression components. Similar to the components of anger, Adam displayed a steep increase during the withdrawal phase and then slowly returned to treatment levels. The visual effects of the ARAR intervention appeared to successfully reduce all components of Adam's aggression.

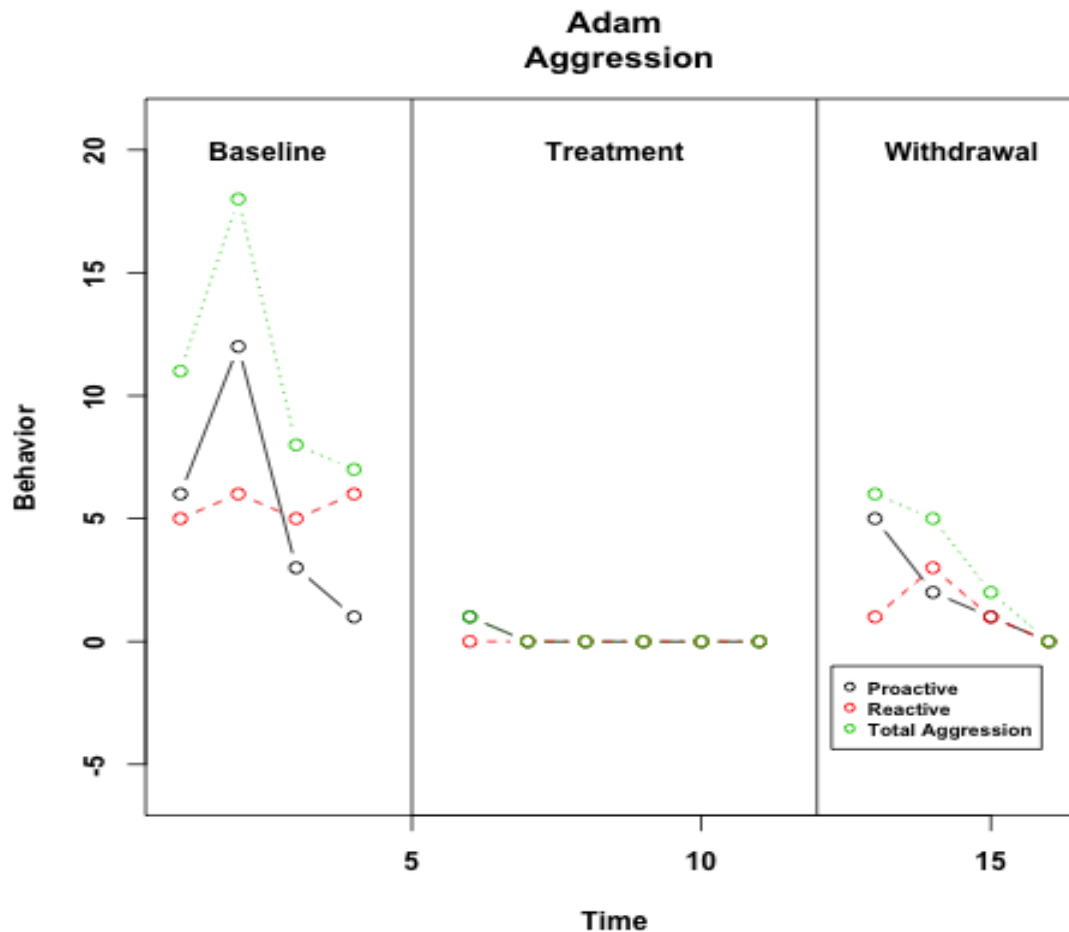


Figure 4. Visual analysis of components of aggression for Adam.

**Descriptive statistics.** Descriptive statistics showing central tendency and the spread of data were calculated for all factors, components, and phases of the intervention (see Tables 2 and 3). Generally, most means were relatively close to the median, suggesting that the data were roughly normally distributed. A comparison between the mean and the 10% trimmed mean indicated that there were no significant outliers because there were very few differences. The lack of significant variation was further confirmed by the small range and interquartile range for each component in each phase (see Table 3).

Further investigation of corresponding boxplots identified one outlier in each of the treatment phases for the cognitive, behavioral, proactive, and total aggression components. However, the single outlier in each of the aforementioned components did not largely affect the means. It is also worth noting that the standard deviation of each component during the treatment phase (B) was relatively small, meaning that there was a normal level of variability. There are larger standard deviations in the baseline phase (A1). This finding was not a surprise as Adam experienced variability in the baseline phase (A1), and the observations began to stabilize prior to the intervention phase (B).

Table 2

*Descriptive Statistics for Adam*

	<i>n</i>			<i>M</i>			10% Trim Mean			<i>Median</i>			<i>SD</i>			<i>CV</i>		
	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2
<b>Affective</b>	4	6	4	7.00	4.833	5.25	7.00	4.833	5.25	6.50	4.50	5.00	1.414	0.983	1.500	0.202	0.203	0.286
<b>Cognitive</b>	4	6	4	6.50	4.667	7.50	6.50	4.667	7.50	6.00	4.00	8.50	2.517	1.211	2.380	0.387	0.259	0.317
<b>Behavioral</b>	4	6	4	6.75	4.667	6.00	6.75	4.667	6.00	6.50	4.00	5.50	0.957	1.211	2.449	0.142	0.259	0.408
<b>Proactive</b>	4	6	4	5.50	0.167	2.00	5.50	0.167	2.00	4.50	---	1.50	4.796	0.408	2.160	0.872	2.443	1.080
<b>Reactive</b>	4	6	4	5.50	---	1.25	5.50	---	1.25	5.50	---	1.00	0.577	---	1.258	0.105	N/A	1.006
<b>Total</b>	4	6	4	11.00	0.167	3.25	11.00	0.167	3.25	9.50	---	3.50	4.967	0.408	2.754	0.452	2.443	0.847
<b>Aggression</b>																		

*Note.* Descriptive statistics include *n* = number of observations in the phase; *M* = mean; 10% Trimmed Mean (for use in case of outliers); *SD* = standard deviation; *CV* = coefficient of variation; --- = 0. There are no missing data points. Phases include A1 = baseline; B = baseline; A2 = withdrawal.



Table 3

*Range and Quantile Data for Adam*

	Range (min, max)			IQR			Quantiles			Quantiles			Quantiles			Quantiles			Quantiles		
	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2
<b>Affective</b>	(6,9)	(4,6)	(4,7)	1.50	1.75	2.25	6.00	4.00	4.00	6.00	4.00	4.00	6.50	4.50	5.00	7.50	5.75	6.25	9	6	7
<b>Cognitive</b>	(4,10)	(4,7)	(4,9)	1.50	0.75	2.00	4.00	4.00	4.00	5.50	4.00	7.00	6.00	4.00	8.50	7.00	4.75	9.00	10	7	9
<b>Behavioral</b>	(6,8)	(4,7)	(4,9)	1.25	0.75	3.50	6.00	4.00	4.00	6.00	4.00	4.00	6.50	4.00	5.50	7.25	4.75	7.50	8	7	9
<b>Proactive</b>	(1,12)	(0,1)	(0,5)	5.00	---	2.00	1.00	---	---	2.50	---	0.75	4.50	---	1.50	7.50	---	2.75	12	1	5
<b>Reactive</b>	(5,6)	(0,0)	(0,3)	1.00	---	0.75	5.00	---	---	5.00	---	0.75	5.50	---	1.00	6.00	---	1.50	6	---	3
<b>Total</b>	(7,18)	(0,1)	(0,6)	5.00	---	3.75	7.00	---	---	7.75	---	1.50	9.50	---	3.50	12.75	---	5.25	18	1	6
<b>Aggression</b>																					

*Note.* IQR = Interquartile Range; A1 = baseline; B = baseline; A2 = withdrawal; --- = 0. The range of data values for each of the factors was very informative. Large overlaps of the range indicated no significant differences.

**Data exploration.** Both autocorrelation and regression analyses were performed to determine if traditional parametric analyses could be used to indicate the intervention's effect (see Tables 4 and 5). The autocorrelation analysis was used to determine if each observation within each phase and factor of the study was independent, a key assumption of parametric analysis methods. Autocorrelation was calculated for each phase of each factor component, and as noted in Table 4, four significant autocorrelations were detected in the withdrawal phase for the affective and behavioral component of anger and proactive and total aggression.

Table 4

*Autocorrelation Data for Adam*

	Baseline (A1)			Treatment (B)			Withdrawal (A2)		
	Rf2	Sig.	Auto corr.?	Rf2	Sig.	Auto corr.?	Rf2	Sig.	Auto corr.?
<b>Affective</b>	0.22	0.86	NO	0.76	0.30	NO	<b>1.68</b>	<b>0.10</b>	<b>YES</b>
<b>Cognitive</b>	-0.98	0.40	NO	0.23	0.77	NO	0.55	0.65	NO
<b>Behavioral</b>	0.24	0.84	NO	0.64	0.39	NO	<b>1.70</b>	<b>0.10</b>	<b>YES</b>
<b>Proactive</b>	0.33	0.79	NO	0.80	0.27	NO	<b>1.62</b>	<b>0.12</b>	<b>YES</b>
<b>Reactive</b>	-1.33	0.23	NO	NA	NA	NO	0.14	0.91	NO
<b>Total</b>	-0.04	0.98	NO	0.80	0.27	NO	<b>1.85</b>	<b>0.06</b>	<b>YES</b>
<b>Aggression</b>									

*Note.* Rf2 = multiple correlation coefficient; Sig. = significance value; autocorr.? = whether autocorrelation was detected. Significance values less than 0.20 in the treatment phase were considered significant due to the small number of observations. Significant autocorrelations are noted.

Next, a regression analysis was performed to determine if there were significant trends in any of the components during any phase of Adam's intervention. If there were significant trends in any phase, the measures of central tendency would lack the ability to accurately assess the typical response. As noted in Table 5, there were mildly significant trends in the affective component for Adam during the treatment phase and the withdrawal phase of proactive and total aggression.

Table 5

*Regression Results for Adam*

	Baseline (A1)			Treatment (B)			Withdrawal (A2)		
	Slope	<i>p</i> -value	Trend	Slope	<i>p</i> -value	Trend	Slope	<i>p</i> -value	Trend
<b>Affective</b>	-0.80	0.27	NO	-0.43	0.050	YES	-1.10	0.050	NO
<b>Cognitive</b>	-0.20	0.90	NO	-0.40	0.190	NO	-1.40	0.240	NO
<b>Behavioral</b>	-0.50	0.33	NO	0.29	0.380	NO	-1.80	0.050	NO
<b>Proactive</b>	-2.40	0.35	NO	-0.14	0.160	NO	-1.60	0.040	YES
<b>Reactive</b>	0.20	0.55	NO	NA	NA	NA	-0.50	0.490	NO
<b>Total</b>	-2.20	0.43	NO	-0.14	0.158	NO	-2.10	0.016	YES
<b>Aggression</b>									

*Note.* Regression was measured to determine if there were trends in each phase of the study. There were significant trends detected in the for the treatment (B) phase the affective component and in the withdrawal phase for proactive and total aggression at the significance level of 0.05.

Though the visual analysis is the gold standard for single-case design, the use of effect size and statistical analysis methods can offer additional validity and reliability through quantitative support. The decision of whether to use traditional parametric methods was based on the data presented in Tables 4 and 5. In the absence of robust autocorrelation in the treatment phase across all factors and trend for most phases and factors, parametric analysis was used. However, factors and phases for which there was significant autocorrelation or trend are noted to indicate that the results should be evaluated with caution.

**Effect sizes.** To further support the decision to use parametric methods for the statistical analysis, the G-index method was performed to calculate effect size (Cohen, 1988). The G-index method is robust to outliers, trend, and autocorrelation, and it compares regression lines across the two phases of interest. The G-index provides a tool for the robust comparison between visual analysis, effect size, and traditional statistical analysis results. When examining the effect sizes in Adam's data, it was noted that autocorrelation occurred in the total aggression component during the baseline to withdrawal phase. To address the autocorrelation, the median was used in

the G-index calculation rather than the mean. In examining the data, with the exception of the affective component, overall there were medium to large effect sizes for all factors between the baseline to treatment phase, and medium effect sizes were detected in the baseline to withdrawal phase for reactive and total aggression (see Table 6). The effect size information correlates well with the visual analyses.

Table 6

*G-index Effect Sizes for Each Factor Between Baseline and Treatment Phases for Adam*

	Baseline/Treatment		Baseline/Withdrawal		Treatment/Withdrawal	
	G-index	Effect Size	G-index	Effect Size	G-index	Effect Size
<b>Affective</b>	0.25 <sup>^</sup>	Small	0.25	Small	0.000 <sup>^</sup>	No Effect
<b>Cognitive</b>	<b>0.583</b>	<b>Large</b>	---	No Effect	0.167	Small
<b>Behavioral</b>	<b>0.333</b>	<b>Medium</b>	---	No Effect	-0.583	Large
<b>Proactive</b>	<b>0.500</b>	<b>Medium</b>	-0.25 <sup>^</sup>	Small	---	No Effect
<b>Reactive</b>	<b>0.500</b>	<b>Medium</b>	<b>0.50</b>	<b>Medium</b>	---	No Effect
<b>Total Aggression</b>	<b>0.500</b>	<b>Medium</b>	<b>0.50<sup>^</sup></b>	<b>Medium</b>	---	No Effect

*Note.* --- = 0. Effect size determination: small effect size (0.1-0.3), medium effect size (0.31-0.5), and large effect size (>0.51). Bolded values indicate a medium to large effect size in the desired direction. <sup>^</sup>Significant autocorrelation or trend detected and G-index median used instead of the mean.

**Statistical analysis.** To expound upon the effect sizes, parametric analyses were performed. To compare the means of each of the factor components between each of the phases, traditional analysis of variance (ANOVA) was used. Because ANOVA only tests whether there are any statistically significant differences between any phases, Tukey's Honest Difference (HSD) post-hoc test was performed to help determine where the differences occurred when comparing treatment to baseline, withdrawal to baseline, and withdrawal to treatment (see Table 7).

Table 7

*Analysis of Variance (ANOVA) for Adam*

	ANOVA		Treatment-Baseline		Withdrawal-Baseline		Withdrawal-Treatment	
	<i>F</i> -Statistic	<i>p</i> -value	Diff	<i>p</i> -value	<i>T</i> -Statistic	<i>p</i> -value	Diff	<i>p</i> -value
<b>Affective</b>	3.705	0.0589	-2.17	0.054	-1.75	0.169	0.417	0.868
<b>Cognitive</b>	2.623	0.117	-1.833	0.359	1.00	0.761	2.833	0.113
<b>Behavioral</b>	2.180	0.159	-2.083	0.153	-0.750	0.789	1.333	0.428
<b>Proactive</b>	4.496	0.0374*	-5.333	0.030*	-3.500	0.217	1.833	0.575
<b>Reactive</b>	71.910	0.0000***	-5.50	0.000***	-4.25	0.000***^	1.25	0.052
<b>Total</b>	16.130	0.001***	-10.833	0.000***	-7.750	0.009***^	3.083	0.285
<b>Aggression</b>								

*Note.* ANOVA was used to determine if there were significant differences in the three phases of each component and which phases were significantly different from the others. Tukey's HSD was used to determine where the differences occurred. There were significant differences between the three phases of the proactive, reactive, and total aggression. There were significant differences between the treatment and baseline phase for those components as well as differences between withdrawal and baseline for reactive factor and total aggression. ^Significant autocorrelation or trend detected. Significance level: \*0.05, \*\*0.01, \*\*\*0.001.

As noted in Table 7, there were no significant differences in the components of anger. However, all aggression factors were significant in the desired direction, suggesting a significant improvement in aggression scores from baseline to treatment. It is likely that the variability in the observations during the treatment and baseline phases of anger contributed to the lack of statistical significance. The statistically significant results were supported by the calculated effect sizes and the visual analysis, indicating that overall, the ARAR intervention had the desired effect for reducing Adam's aggression.

**Summary of Adam's findings.** In summary, the data supported the ARAR intervention's effectiveness in helping Adam regulate anger and reduce aggression. The most significant result of Adam's intervention can be seen in decreasing his aggression. In general, Adam was able to meet his goals by reducing his problematic behavior by identifying anger triggers, refraining from impulsive actions, and using positive coping skills during anger-

provoking situations. Consequently, though not included in the research questions, Adam reported ending the school year strong and meeting his academic goal of earning all As and Bs.

### **Jordan**

Jordan was a 14-year-old African American male who had been suspended during the current school year for initiating an altercation with another student. Jordan took full responsibility for his behaviors but did not express remorse for the situation. Jordan presented himself as a quiet person who was very observant of his surroundings. He was a stellar student and had goals of obtaining his Juris doctorate. Jordan lived with his mother who he reported had very high expectations of him. He was also extremely close to his maternal grandmother who played an active role in raising him. Jordan's father was incarcerated at the time of the study, and he rarely spoke about his relationship with him. He enjoyed regularly attending a church youth group at his grandmother's church and seemed to have good social supports.

Jordan described his anger as being bottled up. When something pushed him over the edge, he stated that he would "snap." He reported that people were often surprised because he was usually quiet and appeared to be easy going. Jordan really wanted to work on how he responded to anger. As such, Jordan established three anger and aggression intervention goals (see Appendix E). Goal one: To learn how to appropriately express anger rather than internalizing it until "snapping". Goal two: To be able to identify when anger is escalating. Goal three: To learn and practice verbally communicating situations. Jordan's academic goal was to end the year with all As and Bs, as he reported that he wanted to go to high school with strong grades (see Appendix E).

**Visual analysis.** Pertaining to anger, Jordan displayed a great deal of variability in the baseline phase for the cognitive and behavioral components (see Figure 5); however, the

affective component was extremely stable. In the treatment phase, there was a slight decrease in the affective component over the course of the intervention with no change detected for the behavioral and cognitive components. After treatment in the withdrawal phase, Jordan experienced a slight increase in the behavioral component, which did not return to the treatment level. Jordan continued to decrease in the affective component while the cognitive component remained the same as the treatment phase. Overall, the intervention appeared to be most successful in reducing the affective and behavioral components of Jordan's anger.

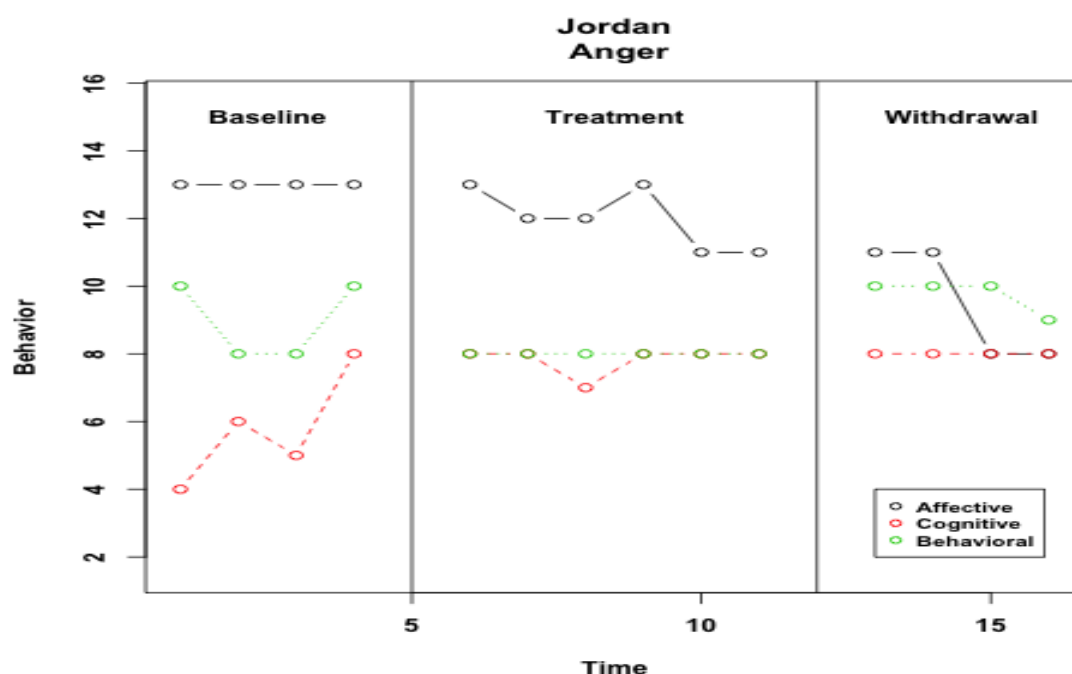


Figure 5. Visual analysis of components of anger for Jordan.

Regarding aggression, Jordan displayed stability in the baseline phase on all components (see Figure 6). Jordan had a decrease in each aggression component with the most noticeable decrease occurring in total aggression. Additionally, the decrease in aggression continued into the withdrawal phase. Overall, the ARAR intervention appeared to be successful at reducing Jordan's aggression.

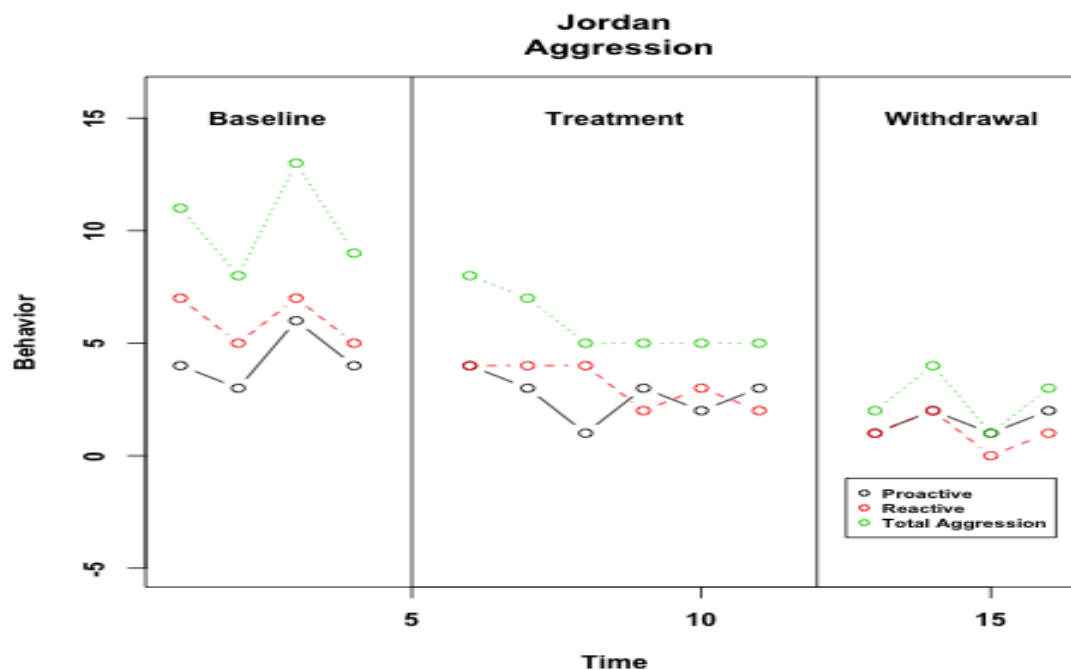


Figure 6. Visual analysis of components of aggression for Jordan.

**Descriptive statistics.** Descriptive statistics showing central tendency and the spread of data were calculated for each of the components throughout each phase. A comparison between the mean and the 10% trimmed mean indicated that there were no significant outliers because there were very few differences noted (See Table 8). Further investigation of corresponding boxplots identified one outlier in the treatment phase of the cognitive component. However, the single outlier in the cognitive component did not largely affect the mean. It is also worth noting that the standard deviation of each treatment phase (B) of each component was relatively low, meaning there was a normal level of variability.



Table 8

*Descriptive Statistics for Jordan*

	<i>n</i>			<i>Mean</i>			<i>10% Trim Mean</i>			<i>Median</i>			<i>SD</i>			<i>CV</i>		
	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2
<b>Affective</b>	4	6	4	13.00	12.000	9.50	13.00	12.000	9.50	13.0	12.0	9.5	0.000	0.894	1.732	---	0.074	0.182
<b>Cognitive</b>	4	6	4	5.75	7.833	8.00	5.75	7.833	8.00	5.5	8.0	8.0	1.708	0.408	---	0.297	0.052	---
<b>Behavioral</b>	4	6	4	9.00	8.000	9.75	9.00	8.000	9.75	9.0	8.0	10.0	1.155	---	0.500	0.128	---	0.051
<b>Proactive</b>	4	6	4	4.25	2.667	1.50	4.25	2.670	1.50	4.0	3.0	1.5	1.258	1.033	0.577	0.296	0.387	0.385
<b>Reactive</b>	4	6	4	6.00	3.167	1.00	6.00	3.167	1.00	6.0	3.5	1.0	1.155	0.983	0.816	0.192	0.310	0.816
<b>Total</b>	4	6	4	10.25	5.833	2.50	10.25	5.833	2.50	10.0	5.0	2.5	2.217	1.329	1.291	0.216	0.228	0.516
<b>Aggression</b>																		

*Note.* Descriptive statistics include *n* = number of observations in the phase; *M* = mean; 10% Trimmed Mean (for use in case of outliers); *SD* = standard deviation; *CV* = coefficient of variation; --- = 0. There are no missing data points. Results show a lack of variability in all phases and factor components. Phases include A1 = baseline; B = baseline; A2 = withdrawal.

Table 9  
*Range and Quantile Data for Jordan*

	Range (min, max)			IQR			Quantiles			Quantiles			Quantiles			Quantiles					
	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2
<b>Affective</b>	(13,13)	(11,13)	(8,11)	---	1.50	3.00	13	11	8	13.00	11.25	8.00	13.0	12.0	9.5	13.0	12.75	11.00	13	13	11
<b>Cognitive</b>	(4,8)	(7,8)	(8,8)	1.75	---	---	4	7	8	4.75	8.00	8.00	5.5	8.0	8.0	6.5	8.00	8.00	8	8	8
<b>Behavioral</b>	(8,10)	(8,8)	(9,10)	2.00	---	0.25	8	8	9	8.00	8.00	9.75	9.0	8.0	10.0	10.0	8.00	10.00	10	8	10
<b>Proactive</b>	(3,6)	(1,4)	(1,2)	0.75	0.75	1.00	3	1	1	3.75	2.25	1.00	4.0	3.0	1.5	4.5	3.00	2.00	6	4	2
<b>Reactive</b>	(5,7)	(2,4)	(0,2)	2.00	1.75	0.50	5	2	---	5.00	2.25	0.75	6.0	3.5	1.0	7.0	4.00	1.25	7	4	2
<b>Total Aggression</b>	(8,13)	(5,8)	(1,4)	2.75	1.50	1.50	8	5	1	8.75	5.00	1.75	10.0	5.0	2.5	11.5	6.50	3.25	13	8	4

*Note.* IQR = Interquartile Range; A1 = baseline; B = baseline; A2 = withdrawal; --- = 0. The range of data values for each factor was very informative. Large overlaps of range indicated no significant differences.

**Data exploration.** Both autocorrelation and regression analyses were performed to see if traditional parametric analyses could be used to determine the effect of the intervention (see Tables 10 and 11). The autocorrelation analysis was used to determine if each observation within each phase and factor of the study was independent, a key assumption of parametric analysis methods. Autocorrelation was calculated for each phase of each factor component, and as noted in Table 4, significant autocorrelation was detected during the treatment phase for total aggression.

Table 10

*Autocorrelation Data for Jordan*

	Baseline (A1)			Treatment (B)			Withdrawal (A2)		
	Rf2	Sig.	Auto corr?	Rf2	Sig.	Auto corr?	Rf2	Sig.	Auto corr?
<b>Affective</b>	NA	NA	NA	0.5	0.51	NO	1.33	0.23	NO
<b>Cognitive</b>	0.53	0.66	NO	-0.4	0.6	NO	NA	NA	NO
<b>Behavioral</b>	---	1.00	NO	NA	NA	NA	0.89	0.45	NO
<b>Proactive</b>	-1.26	0.26	NO	-0.06	0.94	NO	-1.33	0.23	NO
<b>Reactive</b>	-1.33	0.23	NO	0.76	0.30	NO	-1.33	0.23	NO
<b>Total</b>	-1.85	0.06 <sup>^</sup>	NO	1.43	<b>0.02<sup>^</sup></b>	<b>YES</b>	-1.87	0.06 <sup>^</sup>	NO
<b>Aggression</b>									

*Note.* Rf2 = multiple correlation coefficient; Sig. = significance value; autocorr? = whether autocorrelation was detected; --- = 0. Significance values less than 0.20 in the treatment phase were considered significant due to the small number of observations. Significance values less than 0.05 in other phases were considered significant. There was autocorrelation in the treatment phase of total aggression. All results as noted with <sup>^</sup> to indicate significant autocorrelation.

Next, a regression analysis was conducted to determine if there was a significant trend for any factor component. If there were significant trends in any phase of the intervention, the measure of central tendency would lack the ability to accurately assess the typical response. As shown in Table 11, there were significant trends observed during the treatment phase in reactive and total aggression.

Table 11

*Regression Results for Jordan*

	Baseline (A1)			Treatment (B)			Withdrawal (A2)		
	Slope	p-value	Trend	Slope	p-value	Trend	Slope	p-value	Trend
<b>Affective</b>	NA	NA	NA	-2.058	0.109	NO	-2.828	0.106	NO
<b>Cognitive</b>	2.117	0.168	NO	0.264	0.805	NO	NA	NA	NA
<b>Behavioral</b>	---	1.000	NO	-1.732	0.158	NO	-1.732	0.225	NO
<b>Proactive</b>	0.457	0.692	NO	-0.653	0.549	NO	0.707	0.553	NO
<b>Reactive</b>	-0.707	0.553	NO	-2.818	0.0479	YES	-0.471	0.684	NO
<b>Total</b>	-0.082	0.9418	NO	-3.154	0.034	YES	0.0000	1.000	NO
<b>Aggression</b>									

*Note.* --- = 0. Regression was measured to determine if there is a trend in each phase of the study. There were significant trends noted for the treatment phase (B) for reactive and total aggression at the significance level of 0.05. All results are noted with ^ to indicate significant autocorrelation. If ^significant autocorrelation or trend was detected and G-index median used instead of the mean.

Though visual analysis is the gold standard for single-case design, the use of effect size and statistical analysis methods can offer additional validity and reliability through quantitative support. The decision of whether to use traditional parametric methods was based on the data presented in Table 10 and 11. In the absence of robust autocorrelation in the treatment phase across all factors and their components and trend for most phases and factors, parametric analysis was used. However, factors and phases for which there was significant autocorrelation or trend are noted as such to indicate that the results should be evaluated with caution.

**Effect sizes.** To further support the decision to use parametric methods for the statistical analysis, the G-index method was used to calculate effect size (Cohen, 1988). The G-index method is robust to outliers, trend, and autocorrelation, and it compares regression lines across the two phases of interest. The G-index provides a tool for the robust comparison between visual analysis, effect size, and traditional statistical analysis results. When examining the effect sizes in Jordan's data, it was noted that autocorrelation occurred in both reactive and total aggression during baseline to treatment and treatment to withdrawal. To address the autocorrelation, the

median was used in the G-index calculation rather than the mean. In examining the data, overall, there were medium to large effect sizes during all phases for reactive and total aggression. A medium effect was noted for the behavioral component between the baseline to treatment phase, and large effects occurred in affective anger during the baseline to withdrawal phase and proactive aggression during the treatment to withdrawal phase (see Table 12). The effect size information correlates well with the visual analysis.

Table 12

*G-index Effect Sizes for Each Factor Between Baseline and Treatment Phases for Jordan*

	Baseline/Treatment		Baseline/Withdrawal		Treatment/Withdrawal	
	G-index	Effect Size	G-index	Effect Size	G-index	Effect Size
<b>Affective</b>	---	No Effect	<b>1.0</b>	<b>Large</b>	-0.330	Medium
<b>Cognitive</b>	-0.50	Medium	-0.50	Medium	-0.167	Small
<b>Behavioral</b>	<b>0.50</b>	<b>Medium</b>	-0.50	Medium	---	No Effect
<b>Proactive</b>	-0.25	Small	0.25	Small	<b>0.667</b>	<b>Large</b>
<b>Reactive</b>	<b>0.50<sup>^</sup></b>	<b>Medium</b>	<b>0.50</b>	<b>Medium</b>	<b>0.50<sup>^</sup></b>	<b>Medium</b>
<b>Total Aggression</b>	<b>0.50<sup>^</sup></b>	<b>Medium</b>	<b>0.50</b>	<b>Medium</b>	<b>1.0<sup>^</sup></b>	<b>Large</b>

*Note.* --- = 0. Effect size determination: small effect size (0.1-0.3), medium effect size (0.31-0.5), and large effect size (>0.51). Bolded values indicate a medium to large effect size in the desired direction. <sup>^</sup> Significant autocorrelation detected. G-index Median used instead of the mean.

**Statistical analysis.** To expound upon the effect sizes, parametric analyses were performed. To compare the means of each of the factor components between each of the phases, traditional analysis of variance (ANOVA) was used. Because ANOVA only tests whether there are any statistically significant differences between any phases, Tukey's Honest Difference (HSD) post-hoc test was performed to help determine where the differences occurred when comparing treatment to baseline, withdrawal to baseline, and withdrawal to treatment (see Table 13). Results indicated significant differences among the three phases of all components. Though

the cognitive component of anger was significant during baseline to treatment, the difference was not in the desired direction.

Table 13

*Analysis of Variance (ANOVA) for Jordan*

	ANOVA		Treatment-Baseline		Withdrawal-Baseline		Withdrawal-Treatment	
	F-Statistic	p-value	Diff	p-value	T-Statistic	p-value	Diff	p-value
<b>Affective</b>	11.18	0.00224**	-1.00	0.362	-3.50	0.002**	-2.50	0.011*
<b>Cognitive</b>	7.62	0.00839**	2.08	0.014*	2.25	0.015*	0.1667	0.959
<b>Behavioral</b>	8.81	0.0052**	-1.00	0.089	0.75	0.281	1.75	0.004**
<b>Proactive</b>	7.58	0.00853**	-1.58	0.771	-2.75	0.007**	-1.167	0.214
<b>Reactive</b>	25.58	0.000***^	-2.83	0.003***^	-5.00	0.000***	-2.17	0.016*
<b>Total</b>	23.31	0.000111***^	-4.42	0.004***^	-7.75	0.000***	-3.33	0.021*
<b>Aggression</b>								

*Note.* ANOVA was used to determine if there were significant differences in the three phases of each component and if so which phases were significantly different from the others. There were significant differences between the three phases of all components. There were significant differences between treatment and baseline for reactive and total aggression. There were significant differences between the withdrawal and baseline phase as well as the withdrawal and treatment phase for all factors except cognitive and behavioral. ^ Significant autocorrelation detected. Significance Level: \*0.05, \*\*0.01, \*\*\*0.001.

**Summary of Jordan's findings.** In summary, the data supported the ARAR's effectiveness in helping Jordan regulate anger and reduce aggression. The most significant result for Jordan's intervention can be seen in decreasing aggression. With exception of the cognitive component of anger, Jordan also showed positive changes in the affective and behavioral components of anger. Overall, Jordan was able to meet his goals by learning more effective ways to cope and not "snap" out in aggression toward others. He also was able to better express his emotional responses toward anger-provoking situations (affective) and not bottle up his anger. In reference to academic grades, Jordan reported meeting his goal of earning all As and Bs for the academic year and going to high school with good grades.

**Devon**

Devon was a 13-year-old African American male who had been suspended a couple of times during the current school year for making threats pertaining to inflicting violence and harming someone with a firearm at school. Devon was a very playful participant who liked to make jokes but failed to see when he had crossed the line. Devon did not see that his behaviors were a big deal and believed others frequently over-reacted. Devon reported living with his mother and not having a relationship with his father. He looked up to his older brother and spoke about him often. At the time of the study, his brother was incarcerated. Devon reported being diagnosed with ADHD, was predominately hyperactive, and sporadically took his medications. He appeared to have a difficult time concentrating afterschool and frequently needed to move around. Academically, Devon was passing his classes but was struggling in some. He did report having a desire to make good grades in school.

Devon identified three anger and aggression goals and one academic goal that he wanted to achieve during the intervention (see Appendix E). Goal one: Learn how to control and manage problematic behaviors. Goal two: Learn to identify anger triggers and how impulsive decisions can lead to poor behavioral choices. Goal three: Learn and practice using communication, conflict resolution, impulse control, and decision-making skills. Devon's academic goal was to finish the last quarter of his seventh-grade year with As and Bs, as he needed those to offset some of the other grades he had made during the year.

**Visual analysis.** Devon displayed a great deal of variability in the baseline phase for all components of anger (see Figure 7). This instability continued into the treatment phase with values increasing for the affective and cognitive components. The behavioral component stayed the same on average through the treatment phase. No changes were observed for either

behavioral nor cognitive components of anger. The instability of the baseline and treatment phases continued into the withdrawal phase. Overall, the intervention had very little effect on Devon's anger.

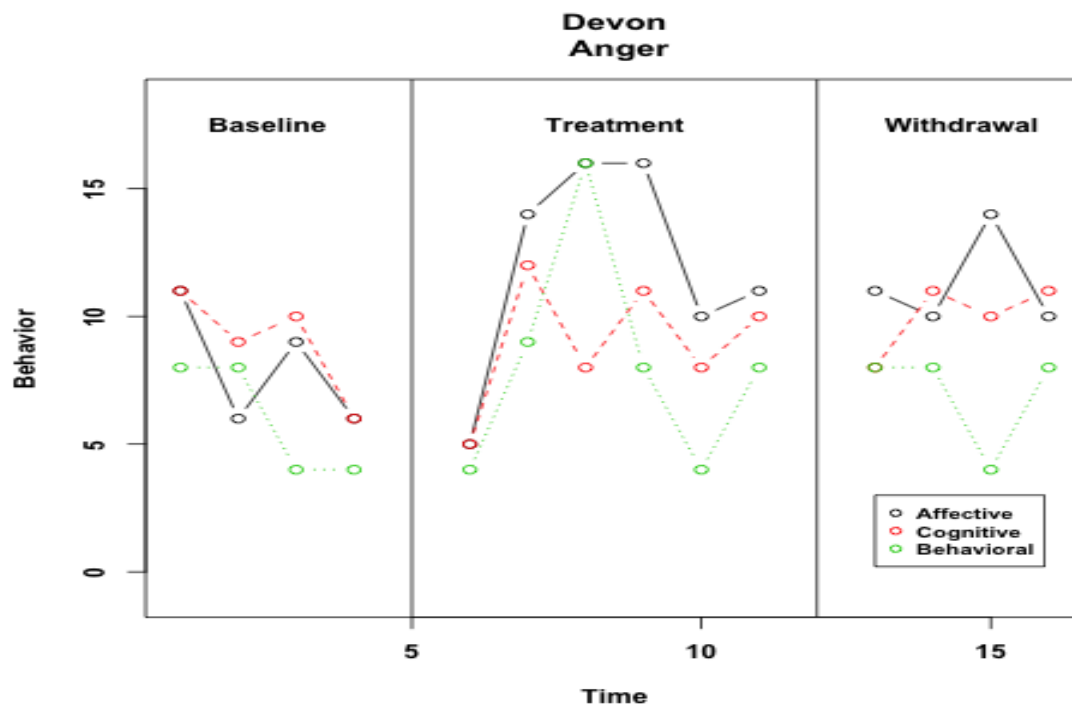


Figure 7. Visual analysis of components of anger for Devon.

Devon displayed stability in the baseline phase of all aggression factors (see Figure 8). The stability of the aggression factors continued into the treatment and withdrawal phases. The ARAR intervention did not appear to have an effect on Devon. Figure 8 suggests that Devon did not begin with a high level of aggression in the baseline phase, so there was no room for him to decrease his aggression scores as they were already low.



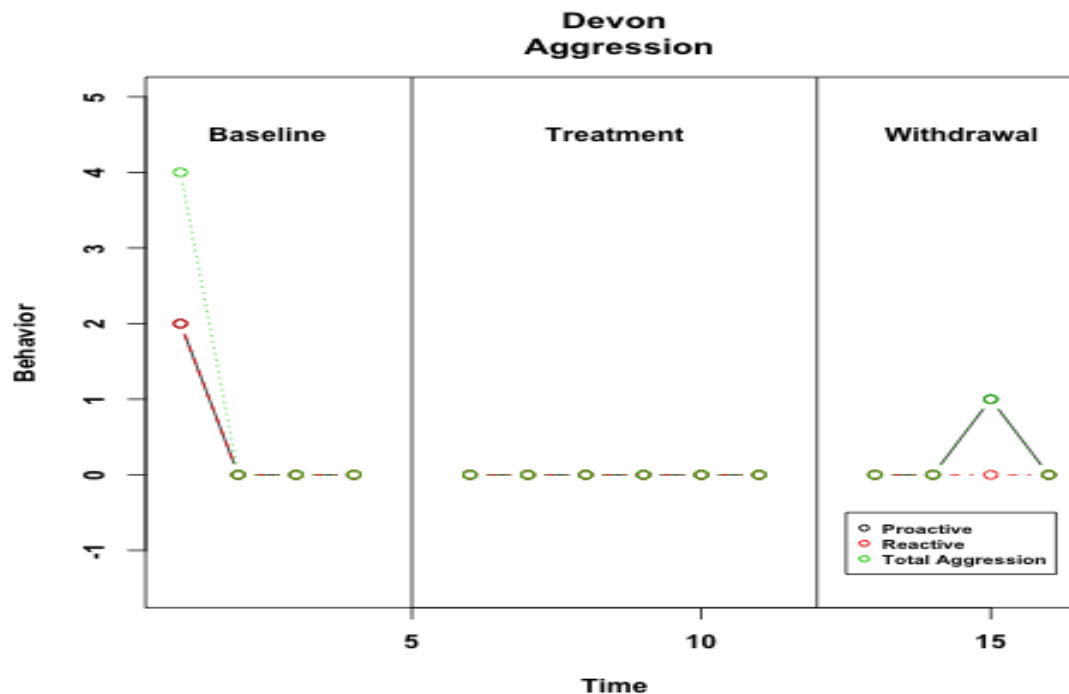


Figure 8. Visual analysis of components of aggression for Devon.

**Descriptive statistics.** Descriptive statistics showing central tendency and the spread of data were computed for all factors and phases of the intervention. For the most part, most means were relatively close to the median, suggesting that the data were roughly normally distributed (see Tables 14 and 15). A comparison between the mean and the 10% trimmed mean indicated that there were not any statistical outliers because there were very few observed differences in the data points. Further investigation of corresponding boxplots identified no outliers. It should be noted that the high variability witnessed in the visual analysis was confirmed by the large standard deviations for all components of anger. Further, the small to no standard deviation in the aggression factors confirmed the lack of variability or stability seen in the visual analysis for the aggression factors.

Table 14

*Descriptive Statistics for Devon*

	<i>N</i>			<i>Mean</i>			<i>10% Trim Mean</i>			<i>Median</i>			<i>SD</i>			<i>CV</i>		
	<b>A1</b>	<b>B</b>	<b>A2</b>	<b>A1</b>	<b>B</b>	<b>A2</b>	<b>A1</b>	<b>B</b>	<b>A2</b>	<b>A1</b>	<b>B</b>	<b>A2</b>	<b>A1</b>	<b>B</b>	<b>A2</b>	<b>A1</b>	<b>B</b>	<b>A2</b>
<b>Affective</b>	4	6	4	8.00	12.000	11.25	8.00	12.000	11.25	7.5	12.5	10.5	2.449	4.243	1.893	0.306	0.354	0.168
<b>Cognitive</b>	4	6	4	9.00	9.000	10.00	9.00	9.000	10.00	9.5	9.0	10.5	2.160	2.530	1.414	0.240	0.281	0.141
<b>Behavioral</b>	4	6	4	6.00	8.167	7.00	6.00	8.167	7.00	6.0	8.0	8.0	2.309	4.401	2.000	0.385	0.539	0.286
<b>Proactive</b>	4	6	4	0.50	---	0.25	0.50	---	0.25	---	---	---	1.000	---	0.500	2.000	NA	2.000
<b>Reactive</b>	4	6	4	0.50	---	0.00	0.50	---	---	---	---	---	1.000	---	---	2.000	NA	NA
<b>Total Aggression</b>	4	6	4	1.00	0.000	0.25	1.00	---	0.25	---	---	---	2.000	---	0.500	2.000	NA	2.000

*Note.* Descriptive statistics include *n* = number of observations in the phase; *M* = mean; 10% Trimmed Mean (for use in case of outliers); *SD* = standard deviation; *CV* = coefficient of variation; --- = 0. There are no missing data points. Results show a lack of variability in all phases and factor components. Phases include A1 = baseline; B = baseline; A2 = withdrawal.

Table 15  
*Range and Quantile Data for Devon*

	Range (min, max)			IQR			Quantiles			Quantiles			Quantiles			Quantiles			Quantiles		
	A1	B	A2	A1	B	A2	0%	25%	50%	75%	100%	0%	25%	50%	75%	100%	0%	25%	50%	75%	100%
<b>Affective</b>	(6,11)	(5,16)	(10,14)	3.50	5.25	1.75	6	5	10	6.00	10.25	10.00	7.5	12.5	10.5	9.50	15.50	11.75	11	16	14
<b>Cognitive</b>	(6,11)	(5,12)	(8,11)	2.00	2.75	1.50	6	5	8	8.25	8.00	9.50	9.5	9.0	10.5	10.25	10.75	11.00	11	12	11
<b>Behavioral</b>	(4,8)	(4,16)	(4,8)	4.00	3.75	1.00	4	4	4	4.00	5.00	7.00	6.5	8.0	8.0	8.00	8.75	8.00	8	16	8
<b>Proactive</b>	(0,2)	(0,0)	(0,1)	0.50	---	0.25	---	---	---	---	---	---	---	---	---	0.50	---	0.25	2	---	1
<b>Reactive</b>	(0,2)	(0,0)	(0,0)	0.50	---	0.25	---	---	---	---	---	---	---	---	---	0.50	---	0.00	2	---	---
<b>Total Aggression</b>	(0,4)	(0,0)	(0,1)	1.00	---	0.25	---	---	---	---	---	---	---	---	---	1.00	---	0.25	4	---	1

*Note.* IQR = Interquartile Range; A1 = baseline; B = baseline; A2 = withdrawal; --- = 0. The range of data values for each of the factors was very informative. Large overlaps of range indicate no significant differences.

**Data exploration.** Both autocorrelation and regression analyses were performed to determine if traditional parametric analyses could be used to indicate the effect of the intervention (see Tables 16 and 17). Autocorrelation was used to determine if each observation within each phase and factor of the study was independent, a key assumption of parametric analysis methods. Autocorrelation was calculated for each phase of each factor component, and as noted in Table 16, there was no autocorrelation in the treatment phase. There was mild autocorrelation detected in the withdrawal phase of the affective factor.

Table 16

*Autocorrelation Data for Devon*

	Baseline (A1)			Treatment (B)			Withdrawal (A2)		
	Rf2	Sig.	Auto corr?	Rf2	Sig.	Auto corr?	Rf2	Sig.	Auto corr?
<b>Affective</b>	-0.52	0.67	NO	0.65	0.39	NO	-1.43	0.19	YES
<b>Cognitive</b>	0.67	0.58	NO	-0.72	0.33	NO	0.22	0.86	NO
<b>Behavioral</b>	1.33	0.23	NO	0.24	0.75	NO	-0.89	0.45	NO
<b>Proactive</b>	0.89	0.45	NO	NA	NA	NO	-0.89	0.45	NO
<b>Reactive</b>	0.89	0.45	NO	NA	NA	NO	NA	NA	NO
<b>Total</b>	0.89	0.45	NO	NA	NA	NO	-0.89	0.45	NO
<b>Aggression</b>									

*Note.* Rf2 = multiple correlation coefficient; Sig. = significance value; autocorr? = whether autocorrelation was detected. Significance values less than 0.20 in the treatment phase were considered significant due to the small number of observations. Significance values less than 0.05 in other phases were considered significant. All results as noted with ^ to indicate significant autocorrelation.

A regression analysis was performed to determine if there were significant trends in any of the components during any phase of Devon's intervention. If there were significant trends in any phase, the measures of central tendency would lack the ability to accurately assess the typical response. As noted in Table 17, there were no significant trends detected.

Table 17

*Regression Results for Devon*

	Baseline (A1)			Treatment (B)			Withdrawal (A2)		
	Slope	<i>p</i> -value	Trend	Slope	<i>p</i> -value	Trend	Slope	<i>p</i> -value	Trend
<b>Affective</b>	-1.155	0.367	NO	0.466	0.665	NO	0.097	0.9318	NO
<b>Cognitive</b>	-2.160	0.1633	NO	0.718	0.512	NO	1.512	0.2697	NO
<b>Behavioral</b>	-2.828	0.1056	NO	-0.073	0.945	NO	-0.378	0.742	NO
<b>Proactive</b>	-1.732	0.225	NO	NA	NA	NO	0.378	0.742	NO
<b>Reactive</b>	-1.732	0.225	NO	NA	NA	NO	NA	NA	NO
<b>Total</b>	-1.732	0.225	NO	NA	NA	NO	0.378	0.742	NO
<b>Aggression</b>									

*Note.* Regression was measured to determine if there was a trend in each phase of the study. There was no significant trend detected.

Though visual analysis is the gold standard for single-case design, the use of effect size and statistical analysis methods can offer additional validity and reliability through quantitative support. The decision of whether to use traditional parametric methods was based on the data presented in Tables 16 and 17. In the absence of robust autocorrelation in the treatment phase across all factors and their components and trend for most phases and factors, parametric analysis was used. However, factors and phases for which there was significant autocorrelation or trend are noted to indicate that the results should be evaluated with caution.

**Effect sizes.** To further support the decision to use parametric methods for the statistical analysis, the G-index was used to calculate effect size (Cohen, 1988). The G-index method is robust to outliers, trend, and autocorrelation, and it compares regression lines across the two phases of interest. The G-index provides a tool for the robust comparison between visual analysis, effect size, and traditional statistical analysis results. When examining the effect sizes in Devon's data, only the behavioral component had a medium effect size between treatment and withdrawal. This finding confirmed the results of the visual analysis.

Table 18

*G-index Effect Sizes for Each Factor Between Baseline and Treatment Phases for Devon*

	Baseline/Treatment		Baseline/Withdrawal		Treatment/Withdrawal	
	G-index	Effect Size	G-index	Effect Size	G-index	Effect Size
<b>Affective</b>	-0.333	Medium	-0.50	Medium	0.25 <sup>^</sup>	Small
<b>Cognitive</b>	---	No Effect	---	No Effect	-0.25	Small
<b>Behavioral</b>	-0.167	Small	-0.25	Small	<b>0.333</b>	<b>Medium</b>
<b>Proactive</b>	0.250	Small	---	No Effect	---	No Effect
<b>Reactive</b>	0.250	Small	0.25	Small	---	No Effect
<b>Total</b>	0.250	Small	---	No Effect	---	No Effect
<b>Aggression</b>						

*Note.* --- = 0. Effect size determination: small effect size (0.1-0.3), medium effect size (0.31-0.5), and large effect size (>0.51). <sup>^</sup> Significant autocorrelation detected. Bolded values indicate a medium to large effect size in the desired direction.

**Statistical analysis.** To expound upon the effect sizes, parametric analyses were performed. To compare the means of each of the factor components between each of the phases, traditional analysis of variance (ANOVA) was used. Because ANOVA only tests whether there are any statistically significant differences between any phases, Tukey's Honest Difference (HSD) post-hoc test was performed to help determine where the differences occurred when comparing treatment to baseline, withdrawal to baseline, and withdrawal to treatment (see Table 19).

Table 19

*Analysis of Variance (ANOVA) for Devon*

	ANOVA		Treatment-Baseline		Withdrawal-Baseline		Withdrawal-Treatment	
	<i>F</i> -Statistic	<i>p</i> -value	Diff	<i>p</i> -value	<i>T</i> -Statistic	<i>p</i> -value	Diff	<i>p</i> -value
<b>Affective</b>	1.874	0.199	4.00	0.189	3.25	0.375	-0.75	0.934
<b>Cognitive</b>	0.302	0.745	---	1.000	1.00	0.796	1.00	0.761
<b>Behavioral</b>	0.508	0.615	2.16	0.594	1.00	0.908	-1.17	0.855
<b>Proactive</b>	0.890	0.438	-0.50	0.410	-0.25	0.820	0.25	0.789
<b>Reactive</b>	1.310	0.309	-0.50	0.336	-0.50	0.397	---	1.000
<b>Total</b>	1.063	0.378	-1.00	0.356	-0.75	0.601	0.25	0.932
<b>Aggression</b>								

*Note.* --- = 0. ANOVA was used to determine if there were significant differences in the three phases of each factor and if so which phases were significantly different from the others. There were no significant results.

**Summary of Devon's findings.** Overall, the intervention did not seem to be effective for Devon. Devon's scores remained relatively stable throughout all phases of the study. Though there was a medium effect size noted during the treatment and withdraw phase, the effect was not shown to be statistically significant. Devon's goals consisted of learning to manage problematic behavior, identifying triggers, and using better skills to express himself. Based on the data, it is questionable whether Devon achieved his goals.

One observable explanation for the intervention's ineffectiveness may in part be due to Devon's inability to focus. By the end of the school day, Devon's medication, if taken, had worn off, and he had a hard time engaging in structured setting. In observation, Devon preferred non-structured activities and enjoyed playing basketball, listening to music, and joking around with his peers. Regarding his academic goal, at the conclusion of the study, Devon reported not knowing his final quarter grades.

**Tyler**

Tyler was a 14-year-old African American male who had been suspended during the

current school year for non-compliance with a school authority figure. He had been asked multiple times to do something, and he refused. Due to other minor documented disciplinary incidents that had occurred during the same year, Tyler's lack of compliance led to a three-day suspension. In retrospect, Tyler reported that he should have listened and done what was being asked of him. In the afterschool program, Tyler had a history of getting angry and hitting other kids regardless of their age. Tyler downplayed his aggressive tendencies during the intervention and did not speak about them when asked. Tyler seemed to enjoy working on the activities and would often seek out the counselor/investigator when he arrived at the facility. During the intervention, Tyler was a very willing participant who actively engaged in each session. Tyler reported living with his father. He said that his mother left when he was little. Tyler was predominately raised by his father, his father's brother, and his paternal grandfather. He did have an older half-sister who he would often visit and help with his nieces and nephews.

Tyler identified three anger and aggression goals and one academic goal that he wanted to achieve during the intervention (see Appendix E). Goal one: To learn and practice verbally communicating frustrations. Goal two: To use words to express feelings. Goal three: To use new skills to calm down, communicate with others, resolve conflicts, and make better decisions. Tyler struggled academically and wanted to finish the last quarter with As and Bs (see Appendix E).

**Visual analysis.** Tyler displayed a great deal of variability in the baseline phase for the cognitive and behavioral components of anger (see Figure 9), which did not reach stability until the end of the baseline phase. As shown in Figure 9, the affective component failed to reach stability. Only the cognitive component decreased during the treatment phase while the affective



and behavioral components remained consistent. Overall, the ARAR intervention appeared to be most successful in reducing the cognitive component.

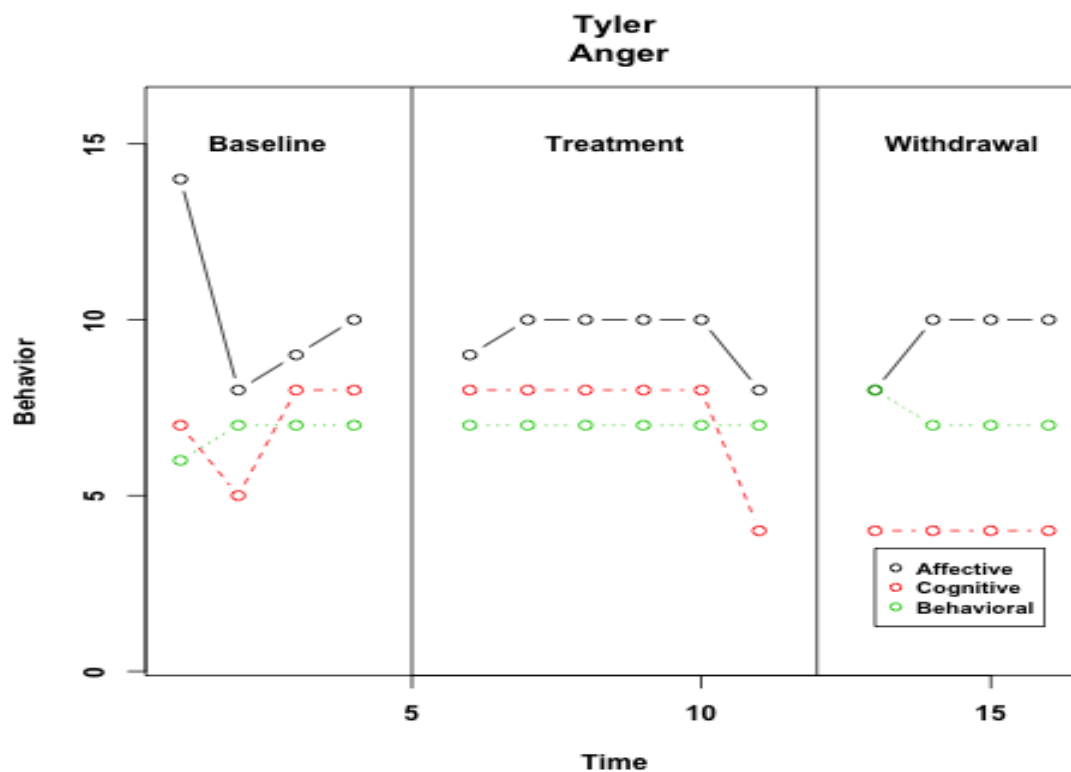


Figure 9. Visual analysis of components of anger for Tyler.

Regarding aggression, Tyler reached baseline stability for the proactive and total aggression (see Figure 10). During the initial treatment phase, Tyler experienced an increase in total and reactive aggression. However, through the course of the intervention, Tyler experienced a decrease in aggression with the largest decrease being seen in total aggression. There was also an increase in total and reactive aggression during the withdrawal phase, but they eventually returned to baseline.

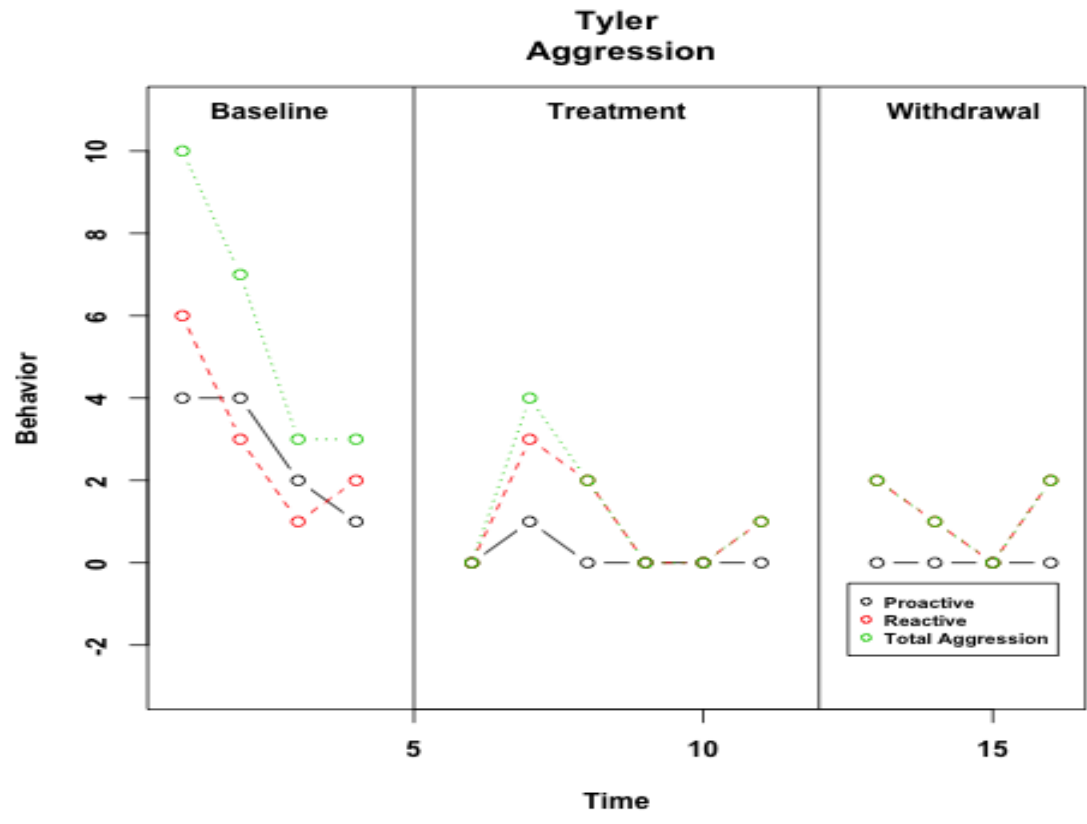


Figure 10. Visual analysis of components of aggression for Tyler.

**Descriptive statistics.** Descriptive statistics showing central tendency and the spread of data were computed for all factors, components, and phases of the intervention (see Tables 20 and 21). Generally, most means were relatively close to the median, suggesting that the data were roughly normally distributed. A comparison between the mean and the 10% trimmed mean indicated that there were no significant outliers because there were few detected differences. The lack of variation was further confirmed by the small range and interquartile range for each component in each phase (see Table 3).

Further investigation of corresponding boxplots identified one outlier each in the treatment phase of the cognitive component of anger and in the treatment phase of proactive

aggression. However, the single outlier in the aforementioned components did not largely affect the means. It is also worth noting that the standard deviation of each treatment (B) phase of each factor is relatively low, meaning there was a normal level of variability.

Table 20

*Descriptive Statistics for Tyler*

	<i>n</i>			<i>Mean</i>			10% Trim <i>Mean</i>			<i>Median</i>			<i>SD</i>			<i>CV</i>		
	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2
<b>Affective</b>	4	6	4	10.25	9.500	9.50	10.25	9.500	9.50	9.5	10.0	10.0	2.630	0.837	1.000	0.257	0.088	0.105
<b>Cognitive</b>	4	6	4	7.00	7.333	4.00	7.00	7.333	4.000	7.5	8.0	4.0	1.414	1.633	---	0.202	0.223	---
<b>Behavioral</b>	4	6	4	6.75	7.000	7.25	6.75	7.000	7.250	7.0	7.0	7.0	0.500	---	0.500	0.074	---	0.069
<b>Proactive</b>	4	6	4	2.75	0.167	---	2.75	0.167	---	3.0	---	---	1.500	0.408	0.000	0.545	2.443	NA
<b>Reactive</b>	4	6	4	3.00	1.000	1.25	3.00	1.000	1.250	2.5	0.5	1.5	2.160	1.265	0.957	0.592	1.373	0.766
<b>Total Aggression</b>	4	6	4	5.70	1.167	1.25	5.75	1.167	1.250	5.0	0.5	1.5	3.403	1.602	0.957	0.592	1.373	0.766

*Note.* Descriptive statistics include *n* = number of observations in the phase; *M* = mean; 10% Trimmed Mean (for use in case of outliers); *SD* = standard deviation; *CV* = coefficient of variation; ; --- = 0. There are no missing data points. Phases include A1 = baseline; B = baseline; A2 = withdrawal.

Table 21

*Range and Quantile Data for Tyler*

	Range (min, max)			IQR			Quantiles			Quantiles			Quantiles			Quantiles			Quantiles		
	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2	A1	B	A2
<b>Affective</b>	(8,14)	(8,10)	(8,10)	2.25	0.75	0.50	8	8	8	8.75	9.25	9.50	9.5	10.0	10.0	11.00	10.00	10.00	14	10	10
<b>Cognitive</b>	(5,8)	(4,8)	(4,4)	1.50	---	---	5	4	4	6.50	8.00	4.00	7.5	8.0	4.0	8.00	8.00	4.00	8	8	4
<b>Behavioral</b>	(6,7)	(7,7)	(7,8)	0.25	---	0.25	6	7	7	6.75	7.00	7.00	7.0	7.0	7.0	7.00	7.00	7.25	7	7	8
<b>Proactive</b>	(1,4)	(0,1)	(0,0)	2.25	---	---	1	---	---	1.75	---	---	3.0	0.0	---	4.00	---	---	4	1	---
<b>Reactive</b>	(1,6)	(0,3)	(0,2)	2.00	1.75	1.25	1	---	---	1.75	---	0.75	2.5	0.5	1.5	3.70	1.75	2.00	6	3	2
<b>Total</b>	(3,10)	(0,4)	(0,2)	4.75	1.75	1.25	3	---	---	3.00	---	0.75	5.0	0.5	1.5	7.75	1.75	2.00	10	4	2

*Note.* IQR = Interquartile Range; A1 = baseline; B = baseline; A2 = withdrawal; --- = 0. The range of data values for each of the factors was very informative. Large overlaps of the range indicated no significant differences.

**Data exploration.** Both autocorrelation and regression analyses were performed to determine if traditional parametric analyses could be used to indicate the effect of the intervention (see Tables 22 and 23). Autocorrelation was used to determine if each observation within each phase and factor of the study was independent, a key assumption of parametric analysis methods. There was significant autocorrelation in the baseline phase of proactive and total aggression (see Table 22).

Table 22

*Autocorrelation Data for Tyler*

	Baseline (A1)			Treatment (B)			Withdrawal (A2)		
	Rf2	Sig.	Auto corr.?	Rf2	Sig.	Auto corr.?	Rf2	Sig.	Auto corr.?
<b>Affective</b>	0.225	0.854	NO	0.570	0.447	NO	0.889	0.45	NO
<b>Cognitive</b>	-0.222	0.856	NO	0.800	0.273	NO	NA	NA	NO
<b>Behavioral</b>	0.889	0.450	NO	NA	NA	NO	0.889	0.45	NO
<b>Proactive</b>	<b>1.679</b>	<b>0.103</b>	<b>YES</b>	-0.400	0.600	NO	NA	NA	NO
<b>Reactive</b>	1.333	0.229	NO	0.125	0.871	NO	-0.242	0.843	NO
<b>Total</b>	<b>1.707</b>	<b>0.095</b>	<b>YES</b>	0.052	0.946	NO	-0.242	0.843	NO
<b>Aggression</b>									

*Note.* Rf2 = multiple correlation coefficient; Sig. = significance value; autocorr.? = whether autocorrelation was detected. Significance values less than 0.20 in the treatment phase were considered significant due to the small number of observations. Significance values less than 0.05 in other phases were considered significant. All results as noted with ^ to indicate significant autocorrelation.

As shown in Table 23, a regression analysis computed to determine if there was a significant trend for any factor during any phase of the study for Tyler. If there were a significant trend in any phase, measures of central tendency would lack the ability to accurately assess the typical response. Tyler's results yielded no significant trend for any phase or factor.

Table 23

*Regression Results for Tyler*

	Baseline (A1)			Treatment (B)			Withdrawal (A2)		
	Slope	p-value	Trend?	Slope	p-value	Trend?	Slope	p-value	Trend?
<b>Affective</b>	-0.91	0.46	NO	-0.68	0.54	NO	1.73	0.23	NO
<b>Cognitive</b>	0.93	0.45	NO	-1.73	0.16	NO	NA	NA	NO
<b>Behavioral</b>	1.73	0.23	NO	-1.73	0.16	NO	-1.73	0.23	NO
<b>Proactive</b>	-4.16	0.5	NO	-0.85	0.44	NO	NA	NA	NO
<b>Reactive</b>	-2.16	0.16	NO	-0.52	0.63	NO	-0.19	0.87	NO
<b>Total</b>	4.23	0.05	NO	-0.63	0.56	NO	-0.19	0.87	NO
<b>Aggression</b>									

*Note.* Regression was measured to determine if there was a trend in each phase of the study. There was no significant trend detected.

Though visual analysis is the gold standard for single-case design, the use of effect size and statistical analysis methods can offer additional validity and reliability through quantitative support. The decision of whether to use traditional parametric methods was based on the data presented in Tables 22 and 23. In the absence of robust autocorrelation in the treatment phase across all factors and their components and trend for most phases and factors, parametric analysis was used. However, factors and phases for which there was significant autocorrelation or trend are noted to indicate that the results should be evaluated with caution.

**Effect sizes.** To further support the decision to use parametric methods for the statistical analysis, the G-index was used to calculate effect size (Cohen, 1988). The G-index method is robust to outliers, trend, and autocorrelation, and it compares regression lines across the two phases of interest. The G-index provides a tool for the robust comparison between visual analysis, effect size, and traditional statistical analysis results. When examining Tyler's data, there were medium and large effect sizes in the correct direction for the cognitive component and proactive, reactive, and total aggression (see Table 24). In the G-index, the median was used for the calculation of proactive and total aggression effect size due to the significant trend. The effect size information correlates well with the visual analyses.

Table 24

*G-index Effect Sizes for Each Factor Between Baseline and Treatment Phases for Tyler*

	Baseline/Treatment		Baseline/Withdrawal		Treatment/Withdrawal	
	G-index	Effect Size	G-index	Effect Size	G-index	Effect Size
<b>Affective</b>	0.25	Small	0.25	Small	-0.083	Small
<b>Cognitive</b>	-0.083	Small	<b>0.75</b>	<b>Large</b>	<b>0.833</b>	<b>Large</b>
<b>Behavioral</b>	-0.25	Small	-0.25	Small	---	No Effect
<b>Proactive</b>	<b>0.50</b>	<b>Medium</b> <sup>^</sup>	<b>0.50</b>	<b>Medium</b>	0.167	Small <sup>^</sup>
<b>Reactive</b>	<b>0.333</b>	<b>Medium</b>	<b>0.50</b>	<b>Medium</b>	-0.25	Small
<b>Total</b>	<b>0.50</b>	<b>Medium</b> <sup>^</sup>	<b>0.50</b>	<b>Medium</b>	-0.167	Small <sup>^</sup>
<b>Aggression</b>						

*Note.* --- = 0. Bolded values indicate a medium to large effect size in the desired direction. Effect size determination: small effect size (0.1-0.3), medium effect size (0.31-0.5), and large effect size (>0.51). <sup>^</sup> Significant autocorrelation detected. G-index median used instead of the mean.

**Statistical analysis.** To expound upon the effect sizes, parametric analyses were performed. To compare the means of each of the factor components between each of the phases, traditional analysis of variance (ANOVA) was used. Because ANOVA only tests whether there are any statistically significant differences between any phases, Tukey's Honest Difference (HSD) post-hoc test was performed to help determine where the differences occurred when comparing treatment to baseline, withdrawal to baseline, and withdrawal to treatment (see Table 25).

As noted in the data, there were significant differences between the cognitive component of anger, proactive aggression, and total aggression. There were significant differences over the course of the study between the withdrawal and baseline phase for each of these components. There were also significant differences detected during the treatment and baseline phase in proactive aggression. Both proactive and total aggression factors indicated a significant trend, and the results were confirmed by visual analysis.



Table 25

*Analysis of Variance (ANOVA) for Tyler*

	ANOVA		Treatment-Baseline		Withdrawal-Baseline		Withdrawal-Treatment	
	<i>F</i> -Statistic	<i>p</i> -value	Diff	<i>p</i> -value	<i>T</i> -Statistic	<i>p</i> -value	Diff	<i>p</i> -value
<b>Affective</b>	0.324	0.73	-0.75	0.747	-0.75	0.783	---	1.000
<b>Cognitive</b>	8.399	0.0061**	0.333	0.920	-3.000	0.021*	-3.333	0.006**
<b>Behavioral</b>	1.833	0.206	0.25	0.563	0.50	0.180	0.25	0.563
<b>Proactive</b>	14.60	.000802**^	-2.58	.001**	-2.75	0.002**^	-0.134	0.948
<b>Reactive</b>	2.325	0.144	-2.00	0.143	-1.75	0.267	0.25	0.964
<b>Total Aggression</b>	6.465	0.0139*^	-4.58	0.017	-4.50	0.031*	0.083	1.000

ANOVA was used to determine if there were significant differences in the three phases of each factor and if so which phases were significantly different from the others. --- = 0. ^ Significant autocorrelation detected.

Significance Level: \*0.05, \*\*0.01, \*\*\*0.001.

**Summary of Tyler's findings.** Overall, the intervention seemed to be effective for Tyler, particularly with the cognitive component of anger and in proactive and total aggression. The intervention seemed to help Tyler process anger differently and manage and regulate his aggressive behaviors. Tyler's goals consisted of learning skills to be more assertive rather than aggressive, to help him use more realistic positive messages when angry, and to learn how to cope with and manage his anger via communication and be able to make better decisions. Based on the data, it appears that Tyler achieved some of his goals, particularly the ones that pertained to cognitive aspects of anger. Regarding his academic goal, Tyler reported meeting his goal of making all As and Bs fourth quarter.

#### **Summary of Dependent Variables Across All Participants**

The current section provides a collective summary of the data across participants. Data from the baseline (A1), treatment (B), and withdrawal (A2) phases are visually plotted on each factor component across all participants. The graphical data are presented in the following order:

(a) affective component, (b) cognitive component, (c) behavioral component, (d) proactive aggression, (e) reactive aggression, (f) total aggression, and concludes with an (f) collective summary of the ARAR intervention findings.

### **Affective Component of Anger**

For the affective component, the intervention appeared to be most effective for Jordan (see Figure 11). Visually, Adam, Jordan, and Tyler experienced the most desired change, but only Jordan's change was supported by the parametric analyses. For Jordan, a large effect size ( $ES= 1.0$ ) was detected between the baseline and withdrawal phase (see Table 12). The ANOVA also showed statistical significance ( $F = 11.18, p \leq .01$ ) for the affective component (see Table 13), providing further credibility to the visual analysis. Although, Adam's and Jordan's data showed changes in the affective component, these changes had small effect sizes (0.1-0.3) and did not reach statistical significance. Devon experienced a great amount of variability in his observations, so the data did not support the intervention's effectiveness.

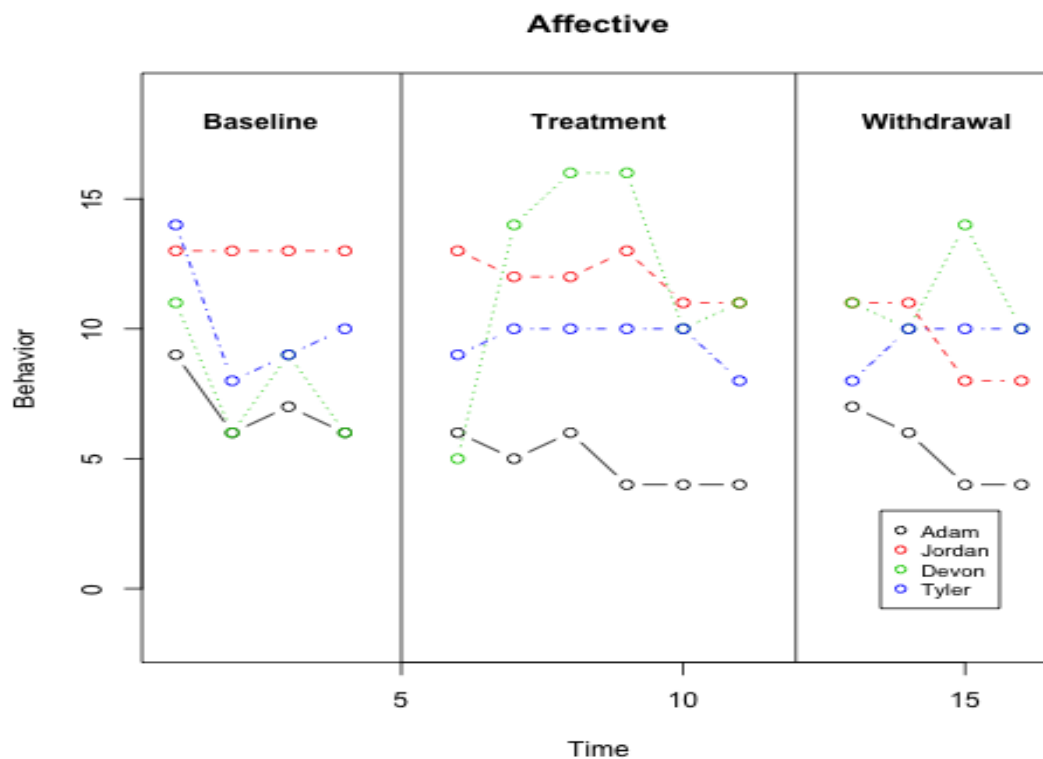


Figure 11. Affective component of anger changes between baseline, treatment and withdrawal phases.

### Cognitive Component of Anger

The visual analysis indicated that the ARAR interventions had a positive effect on the cognitive component of anger for two participants, Adam, and Tyler (see Figure 12). Jordan did experience an effect, but it was not in the desired direction. Also, due to the high level of variability in Devon's observations, there were no notable changes during the intervention. As shown in Tables 6 and 12, Adam had a large effect size ( $ES = .583$ ) between the baseline and treatment phase, but the effect did not yield statistical significance ( $F = 2.623, p = .117$ ). Tyler also experienced favorable gains in the cognitive component between baseline to withdrawal with a large  $ES = .75$  (see Table 24). As shown in Table 25, these findings were further

supported by the ANOVA ( $F = 8.399, p \leq .01$ ), indicating that Tyler benefited the most with his anger in the cognitive domain.

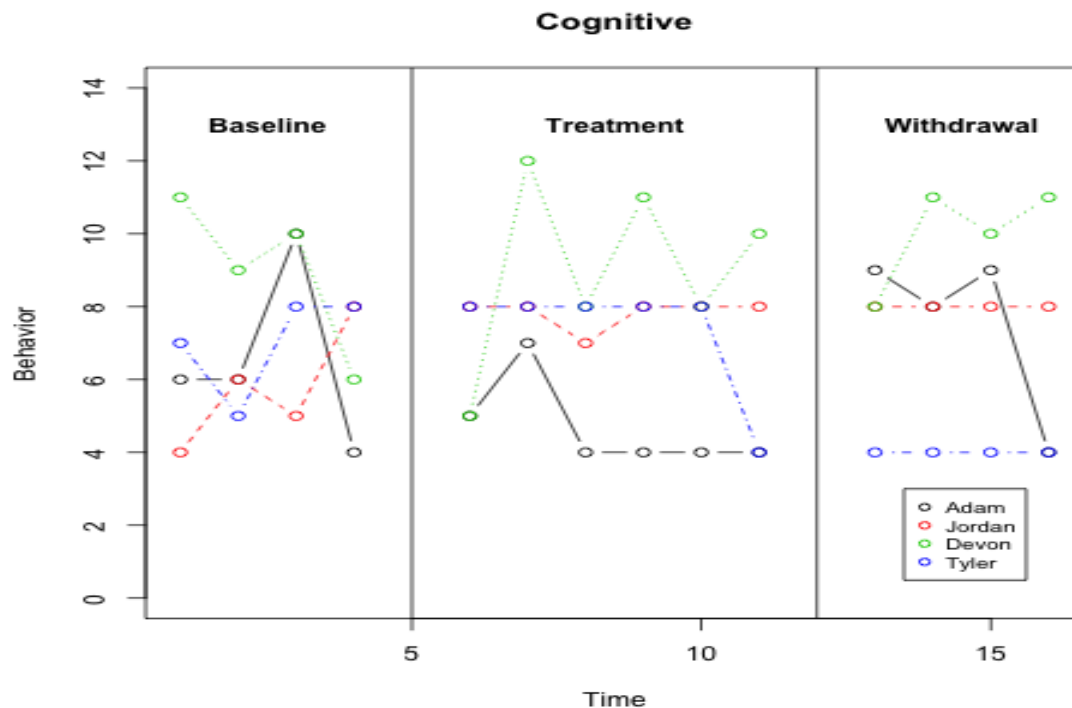


Figure 12. The cognitive component of anger changes between baseline, treatment and withdrawal phases.

### Behavioral Component of Anger

Overall, the intervention had a limited effect on the behavioral component of anger for Devon and Tyler (see Figure 13). As shown in Tables 12 and 13, Jordan experienced the most notable gains in this component with a medium effect size detected between baseline to treatment ( $ES = .50$ ), which was further supported through the ANOVA ( $F = 8.81, p \leq .01$ ). As shown in Tables 6 and 7, Adam's results also showed a medium effect between baseline and treatment ( $ES = .33$ ), but the statistical analysis did not indicate significant differences between phases ( $F = 2.18, p = .159$ ).

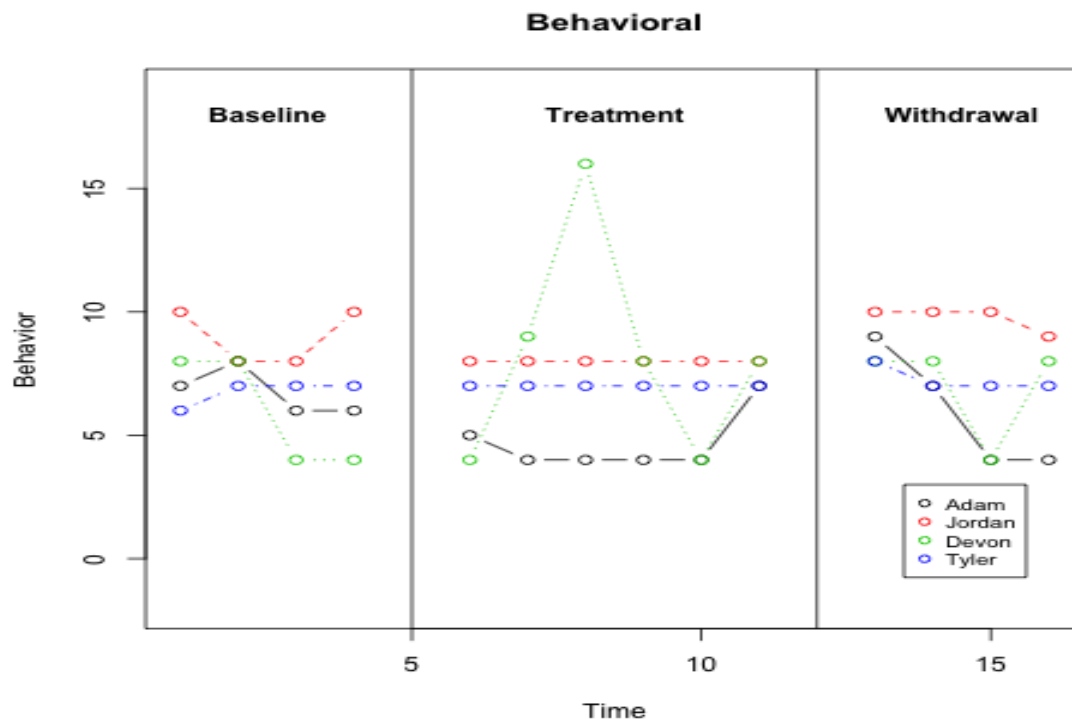


Figure 13. The behavioral component of anger changes between baseline, treatment and withdrawal phases.

### Proactive Aggression

Regarding proactive aggression, the intervention had a positive effect on three of the participants: Adam, Jordan, and Tyler (see Figure 14). Devon's scores were already at the lowest proactive aggression point, so there was no way to decrease his levels of proactive aggression (see Tables 18 and 19). As shown in Tables 6 and 7, Adam's intervention yielded a medium effect ( $ES = .50$ ) during baseline to treatment, and differences between phases were statistically significant ( $F = 4.496, p \leq .05$ ). As indicated in Table 12, Jordan had a large effect during the treatment to withdrawal phase ( $ES = .67$ ), and a statistical difference was also detected ( $F = 7.58, p \leq .01$ ) as shown in Table 13. Most noteworthy was Tyler's findings. As shown in Table 24, effects in Tyler's proactive aggression were seen during baseline to treatment ( $ES = .50$ ) and

baseline to withdrawal ( $ES = .50$ ). As shown in Table 25, they were statistically different ( $F = 14.60, p \leq .01$ ).

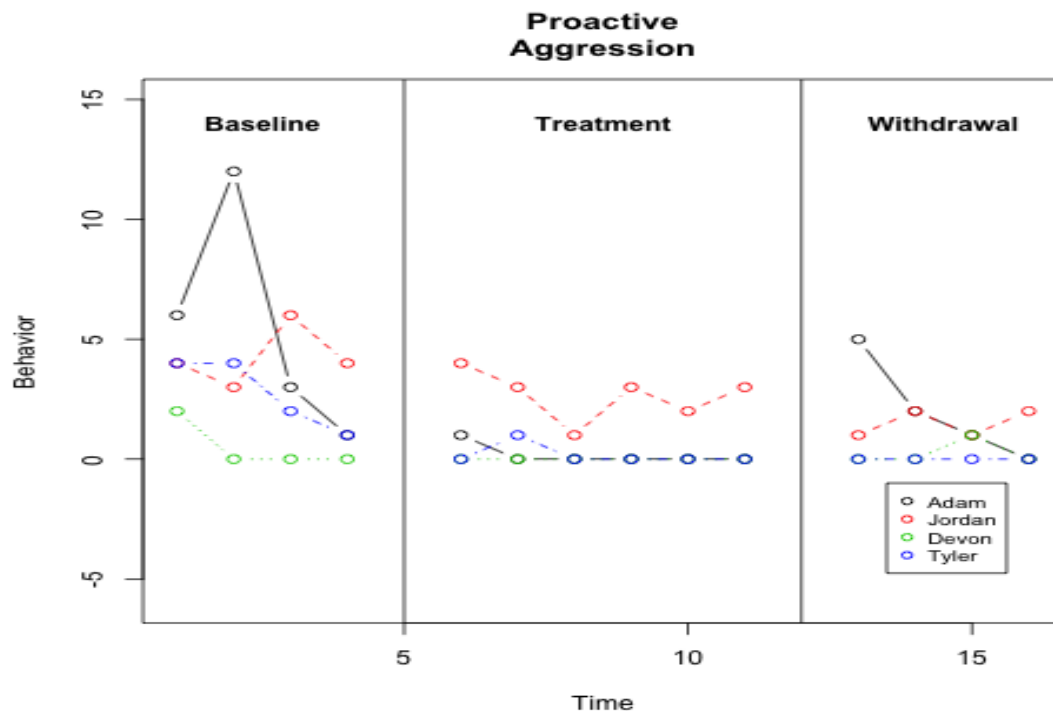


Figure 14. Proactive aggression changes between baseline, treatment and withdrawal phases.

### Reactive Aggression

In examining the reactive aggression component, the intervention was highly successful for three of the participants: Adam, Jordan, and Tyler (see Figure 15). Devon reported no reactive aggression, so his scores could not have decreased from baseline. Adam experienced positive gains as with medium effect sizes detected in the baseline to treatment  $ES = .50$  and baseline to withdrawal  $ES = .50$  (see Table 6). This finding can also be seen in Table 7 where the ANOVA showed statistically significant differences between phases ( $F = 71.91, p \leq .001$ ). Likewise, Tyler also experienced positive gains with medium effect sizes detected in the baseline to treatment  $ES = .33$  and baseline to withdrawal  $ES = .50$  (see Table 24), but these effects did

not produce statistical significance ( $F = 2.325$ ,  $p = .144$ ). The participant who grew the most in reactive aggression across all phases was Jordan with  $ES = .5$  in all phases (see Table 12) and as seen in Table 13, statistically significant differences were detected ( $F = 25.58$ ,  $p \leq .001$ ).

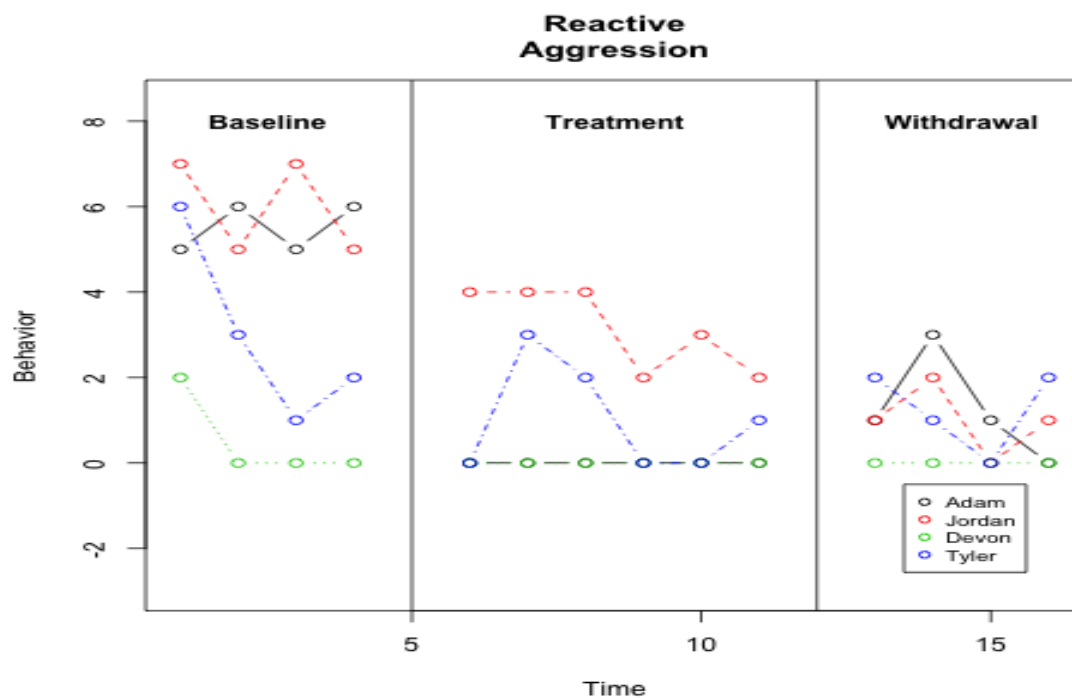


Figure 15. Reactive aggression changes between baseline, treatment and withdrawal phases.

### Total Aggression

Overall, the intervention successfully reduced Total Aggression in the three participants, Adam, Jordan, and Tyler (see Figure 16). Again, due to the variability in Devon's low scores, the intervention could not have lowered his aggression as it was reportedly at a very low threshold (see tables 18 and 19). For Adam, the effect sizes for total aggression were in the medium range for baseline to treatment  $ES = .50$  and baseline to withdrawal  $ES = .50$  (see Table 6). As shown in Table 7, statistically significant differences were detected ( $F = 16.13$ ,  $p \leq .001$ ). Likewise, Tyler's effect size was also in the medium range for baseline to treatment  $ES = .50$  and baseline to withdrawal  $ES = .50$  (see Table 24). As shown in Table 25, statistically significant differences

were detected ( $F = 6.465, p \leq .05$ ). Of the three participants, Jordan reaped the most benefits in the domain of total aggression with medium range for baseline to treatment  $ES = .50$ , baseline to withdrawal  $ES = .50$ , and treatment to withdrawal, producing large effects at  $ES = 1.00$  (see Table 12) and statistically significant differences between phases at ( $F = 23.31, p \leq .0001$  see Table 13).

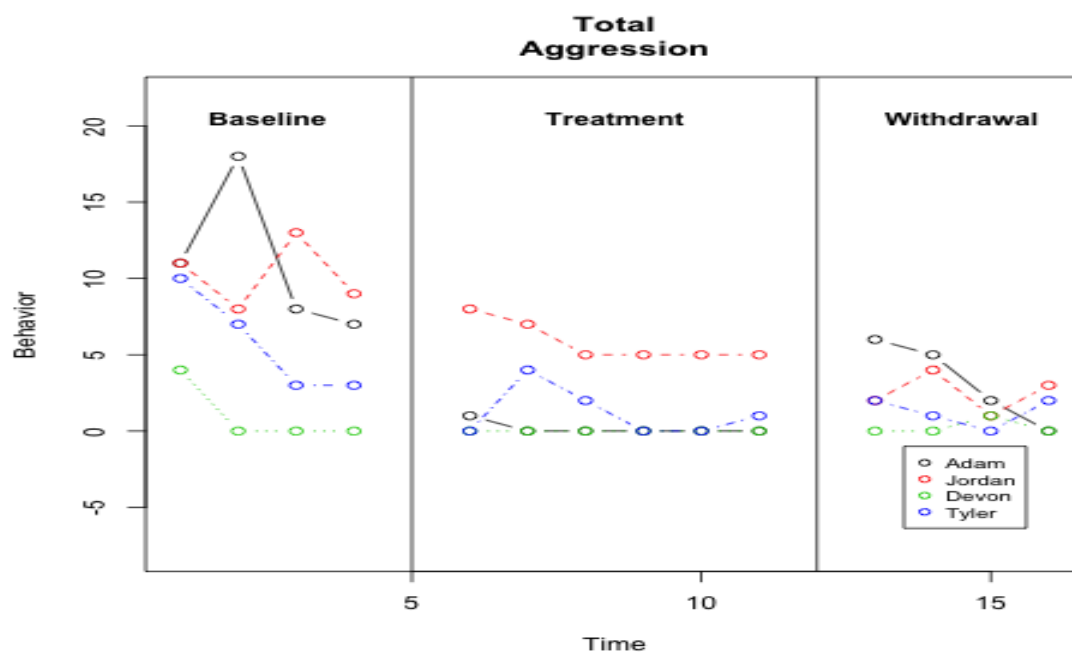


Figure 16. Total aggression changes between baseline, treatment and withdrawal phases.

### Summary of ARAR Findings Across All Participants

In conclusion, the ARAR interventions seemed to have positive effects on three of the participants' anger and aggression. Devon was the exception as only slight effects were observed. For three participants, the most profound effects occurred in decreasing the components of aggression. Collectively across these participants, anger showed moderate effects, indicating that on whole, anger was slightly affected by the ARAR interventions.



## Social Validity Measures

**Attitude Toward Treatment (ATT) Scores.** Upon completing all sessions, participants took the Attitude Toward Treatment (ATT) measure. The ATT is a self-report measure designed to assess participants' attitudes about the value of the intervention (see Appendix A). The measure consists of the fourteen 7-point Likert type items with the wording presented in the past tense to assess post-treatment attitudes. The ATT scale ranges from a low of 14 to a high score of 98. As shown in Table 26, all four participants, including Devon, rated the intervention as valuable with scores ranging from 92 to 98. Collectively, the ATT scores were very complimentary and supportive of the visual and parametric analyses.

Table 26

*Attitude Toward Treatment Scores: Means, Standard Deviations, and Total Scores*

Adam	Jordan	Devon	Tyler
$M = 7.00$	$M = 6.79$	$M = 6.57$	$M = 6.93$
$SD = 0.00$	$SD = 0.43$	$SD = 1.34$	$SD = 0.27$
Total score = 98	Total score = 95	Total score = 92	Total score = 97

*Note.* Total intervention sample  $M = 6.84$ ;  $SD = 0.71$  ( $M =$  mean;  $SD =$  standard deviation). Lowest score = 14, Highest score = 98.

**ARAR Staff Questionnaire.** The key staff member at the afterschool program who helped identify and knew each participant well completed a pre-post ARAR Staff Questionnaire (ARAR-SQ) (see Appendix B). The ARAR-SQ was designed to capture the perceived effectiveness of the intervention from someone who interacted with and had a relationship with the participants. Items on the questionnaire were organized on a 5-point scale (1 = strongly

disagree to 5 = strongly agree). Table 27 shows the results of the ARAR-SQ across all participants.

Overall, the key staff member perceived the ARAR interventions as being beneficial for all participants, including Devon who did not seem to reap benefits from the intervention. Interestingly, the data also supported this observation. Potential reasons for Devon's lack of progress will be explained in the discussion chapter. The information gleaned from the ARAR-SQ complemented the treatment findings and offered further support for the visual and parametric results.

Table 27

*Pre- and Post-ARAR-SQ Scores by Participant*

<b>Participant</b>	<b>Pre-Questions</b>	<b>Pre-Score</b>	<b>Post-Questions</b>	<b>Post-Score</b>
Adam	The student has difficulty regulating anger and aggressive behaviors in the educational setting.	4	The student continues to have difficulty regulating anger and aggressive behaviors in the educational setting.	1
Adam	The student is quick to anger in comparison to other peers.	4	The student continues to be quick to anger in comparison to other peers.	1
Adam	The student behaves inappropriately when he is angry.	4	The student continues to behave inappropriately when he is angry.	1
Adam	The student's anger and aggression has progressively escalated over time.	2	The student's anger and aggression has continued to escalate.	1
Adam	The student could benefit from an anger regulation and aggression reduction intervention.	4	The student has benefited from an anger regulation and aggression reduction intervention.	5
Jordan	The student has difficulty regulating anger and aggressive behaviors in the educational setting.	4	The student continues to have difficulty regulating anger and aggressive behaviors in the educational setting.	2
Jordan	The student is quick to anger in comparison to other peers.	4	The student continues to be quick to anger in comparison to other peers.	2
Jordan	The student behaves inappropriately when he is angry.	2	The student continues to behave inappropriately when he is angry.	2

Table 27 (Continued)

Jordan	The student's anger and aggression has progressively escalated over time.	2	The student's anger and aggression has continued to escalate.	2
Jordan	The student could benefit from an anger regulation and aggression reduction intervention.	4	The student has benefited from an anger regulation and aggression reduction intervention.	5
Devon	The student has difficulty regulating anger and aggressive behaviors in the educational setting.	4	The student continues to have difficulty regulating anger and aggressive behaviors in the educational setting.	4
Devon	The student is quick to anger in comparison to other peers.	4	The student continues to be quick to anger in comparison to other peers.	2
Devon	The student behaves inappropriately when he is angry.	4	The student continues to behave inappropriately when he is angry.	2
Devon	The student's anger and aggression has progressively escalated over time.	3	The student's anger and aggression has continued to escalate.	2
Devon	The student could benefit from an anger regulation and aggression reduction intervention.	4	The student has benefited from an anger regulation and aggression reduction intervention.	2
Tyler	The student has difficulty regulating anger and aggressive behaviors in the educational setting.	3	The student continues to have difficulty regulating anger and aggressive behaviors in the educational setting.	2
Tyler	The student is quick to anger in comparison to other peers.	3	The student continues to be quick to anger in comparison to other peers.	1
Tyler	The student behaves inappropriately when he is angry.	3	The student continues to behave inappropriately when he is angry.	1
Tyler	The student's anger and aggression has progressively escalated over time.	2	The student's anger and aggression has continued to escalate.	1
Tyler	The student could benefit from an anger regulation and aggression reduction intervention.	4	The student has benefited from an anger regulation and aggression reduction intervention.	5

## CHAPTER 5: DISCUSSION

This final chapter presents an overview of the study followed by individual findings and the recommendations based on an analysis of the data detailed in Chapter Four. The contents of Chapter Five consist of the following: (a) overview of the study, (b) discussion of the findings, (c) contributions to the scholarly literature, (d) research to practice, (e) strengths, (f) limitations, (g) recommendations (h) future implications, and (i) concluding remarks.

### Overview of the Study

The purpose of the present study was to evaluate the effectiveness of an anger and aggression management intervention with adolescent male students. Based on the need for such interventions, a framework entitled *Anger Regulation and Aggression Reduction (ARAR)* was designed to address problematic anger and aggressive behaviors that occur in the school setting. Five adolescent male students began the present study, but due to unforeseen medical circumstances, one participant took a single baseline assessment and withdrew. The remaining four male participants were public middle school students who exhibited dysregulated anger and problematic aggression.

The participants attended an afterschool program that served youth in a southeastern school district. Similar to the school setting, the afterschool program facilitated programs that encouraged good decision-making and engagement in positive behaviors that promote academic, emotional, and social well-being. Since the ARAR intervention focused on the emotional well-being and academic success of students, it was a good fit with the program's underpinning initiatives and overarching mission.

Because the literature supports the need for anger management (Grunbaum et al., 2004; Kuhn, et al., 2015) and aggression reduction in schools (Kellner, et al., 2008), the overarching goal of the study was to provide effective evidence-based anger and aggression interventions to youth whose problematic behaviors adversely impacted their lives both inside and outside of the school. Another goal was to provide alternative proactive tertiary measures for k-12 school personnel to utilize when dealing with youth who exhibit aggressive behaviors rather than exclusionary practices such as suspension or expulsion. To help individual students and promote systemic change, the ARAR intervention was developed to illustrate alternate methods for working with problematic anger and aggression.

The ARAR intervention was a proactive, evidenced-based program that used both Relational Frame Theory (Hayes, et al., 2001) and Social Information Processing Theory (Crick & Dodge, 1994) principles. Additionally, two conceptual models, the American School Counselor Association National Model (ASCA, 2012a) and the Multicultural Social Justice Counseling Competency (MSJCC; Ratts et al., 2016) framework were integral in the development of the intervention. A conceptualization of the of ARAR framework is shown in Figure 1. The paradigm helped in the customization and in the construction of the individual ARAR plans (see Appendix E). Based on the literature regarding adolescent anger and aggression, the present study was designed to examine effective ways to help students better regulate their emotions and behaviors, leading to the four research questions posed at the onset of the study:

1. What effect does the customized ARAR intervention have on adolescent anger across the treatment and withdrawal phases? Specific sub-questions to be addressed include:

- 1a. Do participants' self-reports and self-monitoring indicate a change in cognitive components of anger?
- 1b. Do participants' self-reports and self-monitoring indicate a change in behavioral components of anger?
- 1c. Do participants' self-reports and self-monitoring indicate a change in affective components of anger?
2. What effect does the customized ARAR intervention have on the aggression of participants across the treatment and withdrawal phases? Specific sub-questions to be addressed include:
  - 2a. Do participants' self-reports and self-monitoring indicate a change in proactive aggression?
  - 2b. Do participants' self-reports and self-monitoring indicate a change in reactive aggression?
  - 2c. Do participants' self-reports and self-monitoring indicate a change in total aggression (both proactive and reactive combined)?
3. How did the participants rate the social validity of the interventions?
4. How did the key staff member rate the effectiveness of the interventions?

An N=1/ A-B-A single-case research design (SCRD) was used to answer questions one and two. The SCRД was replicated four times, one time for each participant, to increase the generalization of the findings. After two-weeks of data collection (A1 [baseline]), participants met with the counselor/investigator individually for six one-hour sessions over the course of four-weeks (B [treatment]) and then underwent a withdrawal of treatment phase for an additional two-weeks (A2 [withdrawal]).

Throughout the eight-week study, participants took two instruments: the Multidimensional School Anger Inventory-12 (MSAI-12; Furlong et al., 2013) assessing anger, and the Reactive–Proactive Aggression Questionnaire (RPQ; Raine et al., 2006) assessing aggression. These were the measures from which the dependent variables were derived. As specified in the research questions, each instrument had three components of interest, the MSAI-12 measured affective, cognitive, and behavioral anger, and the RPQ measured proactive, reactive, and total aggression. Throughout the duration of the study, the measures were taken by each participant a total of 14 times: four during the baseline phase, six during the treatment phase and four during the withdrawal phase.

The data were examined visually across the baseline-to-treatment and treatment-to-withdrawal phases to see if the changes throughout the intervention were stable across participants. If so, descriptive statistics, effect sizes, and parametric analyses were used to determine the effectiveness of the intervention and the strength of the effect. Baseline to withdrawal phases were also evaluated for significant differences and effect size (*g*-index). The findings indicated that overall, the customized ARAR intervention was most effective for decreasing all components of *aggression* across three of the four participants. The intervention was also effective in increasing anger regulation in some of the components of *anger* for three of the four participants, but overall the changes noted for anger were moderate in comparison to aggression. What follows is a more detailed description of the findings across each participant.

### **Discussion of the Findings**

Drawing from the ARAR framework, four customized interventions were developed to specifically meet each participant's needs, and the findings are presented below.

**Adam**

Overall, Adam benefited from the ARAR intervention on two components of anger (i.e., cognitive and behavioral) and all three components of aggression. Adam noted favorable gains on the ATT, rating the intervention at the highest possible score. Additionally, the key staff member noted positive changes in Adam's levels of anger and aggression. After reflecting on Adam's personality, it is no surprise that he did not experience much change in the affective component. Adam was a person with a calm demeanor who enjoyed thinking and working through complex tasks. He was very likable and expressed that he enjoyed hanging out with his friends. Adam tended to be more of a follower than a leader, and this behavior often got him into trouble, especially when his friends instigated an anger provoking situation.

The majority of Adam's intervention focused on the behavioral and cognitive aspects of anger and aggression. Affective domains (feelings) were not as prevalent as the other factors and variables. Adam's goals also reflected the cognitive and behavioral components of anger and all components of aggression. His goals focused on issues such as decision-making, consequences and actions, healthy friendships, and coping with problematic behaviors (see Appendix E). In the future with students similar in temperament to Adam, it would be beneficial to incorporate the affective domain of anger into the intervention. By doing so, targeted students could learn how to better differentiate between various feelings like being frustrated versus enraged. Recognizing feelings early at their onset can help students think through (cognitions) how best to handle the situation (behaviors) without escalating and acting out aggressively.

**Jordan**

Jordan also benefited from the ARAR program, specifically on the affective and behavioral components of anger and in all areas of aggression. Interestingly, Jordan's cognitive



component went in the wrong direction for a time during the intervention. One possible explanation for this change was that during the time of the spike, Jordan's father had been incarcerated. As noted earlier, Jordan reported that he bottled up his emotions and did not discuss his feelings. Jordan was very private and shared only minimal information about troublesome topics during the session. He appeared to be uncomfortable talking about his feelings in detail.

Unlike Adam, Jordan's goals consisted of addressing and identifying affective feelings associated with anger and behaviors and how troublesome thoughts (cognitions) that lead into anger were not of primary concern to him. Again, due to the goals, the intervention did not examine cognitive distortions and problematic thought patterns in detail. Reflecting on Jordan's needs, he could have benefited from learning some additional skills to help him cope with the thoughts that he bottled up. Due to Jordan's demeanor, rapport took longer to establish than with the other participants. In working with students like Jordan, a longer intervention may be warranted. Regardless, on the ATT, Jordan gave the intervention a high rating, indicating that he believed it was helpful. Also, the key staff member noted positive changes in Jordan's levels of anger and aggression.

### **Devon**

Unfortunately, Devon did not show desired changes during the ARAR intervention. As mentioned in Chapter Four, Devon had a difficult time focusing, and that may have contributed to his lack of progress. Devon was extremely impulsive and playful and stated that those behaviors also occurred during the school day. Devon did report being on medication and seeing a counselor outside of the school setting. He also said he did not take his medication regularly, because he did not like how it made him feel. When asked about some of the things that he

worked on with his counselor, he said he did not remember because all he did was sit and it was “boring”.

To keep Devon’s attention, the counselor/investigator incorporated many hands-on activities into sessions. Devon seemed to enjoy the activities and rated the intervention favorably. Though Devon gave the intervention a high rating, it was the lowest rating of all the participants. Additionally, the key staff member noted that no significant changes were observed in Devon’s behaviors as a result of the intervention. The social validity measures supported the quantitative and visual data, which also showed no progress. In the future, for students such as Devon, the time of the intervention should be taken into account. For example, Devon may have benefited more from an intervention that occurred earlier in the school day when he was most alert.

Devon’s problematic behaviors seemed to be related to his impulsivity and playfulness, not anger and aggression. For example, Devon liked to say things for the shock effect and to initiate a response from the recipient. In doing so, he would often say offensive or unkind things. Shortly after, he would smile really big and say, “just kidding” and then start laughing. Devon also liked being sneaky and taking items like a pencil needed for the activity. He would later return the item, but he seemed to enjoy watching a scene consisting of asking for the item and looking for it unfold before he gave it back. Last, when doing an activity that required a lot of detail, Devon would report, “I cannot sit still this long.” He would also say things like, “I cannot pay attention” and then get up and move around. It appeared that Devon needed to be moving every 10 to 15 minutes.

Based on observational data, it is believed that Devon would have reaped the most benefits from an impulse control and emotional regulation program rather than an anger and

aggression intervention. Perhaps for educators, the two overlap, as Devon showed anger when he was called out for being playful. It appears that more staff training on differentiating between anger and aggression and other emotions and behaviors would be ideal when gathering referrals for youth needing such services.

### **Tyler**

Tyler's intervention helped him in only the cognitive component of anger and in all components of aggression. Regarding the cognitive domain, Tyler's goals (see Appendix E) were centered around the concepts of thinking, challenging and coping with problematic thoughts. Like Adam and Jordan, Tyler's goals did not adequately address the affective and behavioral domains of anger. Regarding the cognitive domain, the effect sizes between baseline to withdrawal and treatment to withdrawal were all large, indicating that Tyler did learn healthy skills to address his problematic thoughts.

Behaviorally, Tyler tended to lash out physically when he was angry. It was interesting to see that Tyler also experienced a decrease in all components of aggression. Like Adam and Jordan, the ARAR intervention focused more on Tyler's goals and, therefore, affective and behavioral components were not addressed as frequently as cognitive components and aggression. Tyler reported enjoying the intervention and rated it favorably. Also, the key staff member noted positive changes in Tyler's behavior.

### **Summary of the ARAR Intervention Findings**

Each individual had a customized intervention based on the MSAI-12 and RPQ assessment scores and their personal goals (see Appendix E). To provide further strength to the intervention's visual analyses, effect sizes and parametric analyses were conducted and provided support for the findings. Beyond the visual and quantitative data, the ATT and the key staff

questionnaire social validity measures also provided insight into the participant's experience and behavioral changes. All of the data sources were complimentary of one another and indicated that customized ARAR interventions appeared to be beneficial to regulate anger and reduce aggression.

### **Contributions to the Scholarly Literature**

What set this study apart from other studies on the topic of anger and aggression was the methodology, particularly the use of the single-case research design. Most research to date relied on traditional between-group experimental and quasi-experimental designs to examine anger and aggression (Down, et al., 2011; Fives, et al., 2011; Luciano, et al., 2011). However, there is a paucity of literature pertaining to individualized interventions within the context of the school environment with angry and aggressive youth. According to the U.S. Department of Justice, Civil Rights Division and the U.S. Department of Education (2014), there are correlations between exclusionary discipline policies and practices and an array of serious educational, economic, and social problems, including school avoidance and diminished educational engagement; decreased academic achievement; increased behavior problems; increased likelihood of dropping out; substance abuse; and involvement with juvenile justice systems. (pp. 4-5).

So, it seems that there would be more data supporting solutions through alternative methods to handle disruptive and problematic behaviors.

Many of the studies conducted in the school setting are between-group experimental and quasi-experimental designs that rely on either school-wide approaches or group-based interventions. Perhaps some plausible explanations for these designs being employed in the academic setting are time constraints and the ease of application. How effective these primary

and secondary prevention programs are in deterring problematic behaviors is still questionable. Tertiary approaches via individual counseling are a viable option to help youth learn alternative ways to cope with their anger and aggression. Such tertiary interventions can be monitored through the use of a single-case research design (SCRD) like the one used in the present study. Though primary and secondary interventions can be helpful, they assume some degree of homogeneity within a group and by doing so fail to address an individual's specific needs.

Tertiary interventions using SCRD methods are better ways to assist individual students. Using an SCRD in school settings has several advantages. To begin with, SCRDs are straightforward and easy to plan and implement. Additionally, they provide a high degree of experimental control because each case serves as its own control, therefore eliminating the need for a control group that is required of between-group experimental and quasi-experimental designs (Byiers, et al., 2012; Heppner et al., 2015). The baseline phase serves as the control, which can then be compared to the phase after and/or during the treatment phase that follows.

Another benefit of SCRD is the focus on the individual as opposed to a group. Between-group designs make causal inferences that are interpreted as meaning that the intervention was effective with most or all of the participants, which may not be a true assumption as some individuals may not have responded to the intervention (Byiers, et al., 2012). SCRD allows for an evaluation of the treatment effects at an individual level (Byiers, et al., 2012). Thus, SCRDs can provide an alternative method for k-12 school personnel to use to help individual youth who struggle with problematic anger and aggression. SCRDs would provide a means to assess the effectiveness of an intervention on an individual level as opposed to a group level.

### **Research to Practice**

Information was extracted from several studies and aided in the development of the ARAR framework (see Appendix C). For starters, Lee and DiGiuseppe's (2018) meta-analyses on anger helped identify the specific domains of anger that showed the most improvement in behavioral interventions. The findings of Lee and DiGiuseppe's (2018) study supported the use of cognitive behavioral therapy to specifically target anger but not aggression. Interestingly, this finding was a stark contrast to the present study's findings, which indicated that aggression appeared to be most affected by the intervention. In another study, Fives, et al. (2011) relied on a cognitive behavioral approach to examine the role that irrational cognitions play in aggressive behavior.

Other behavioral theories were also used in the development of the ARAR intervention. For example, Relational Frame Theory (RFT; Hayes, 2004; Hayes, et al., 2001), one of the present study's primary theories, was supported by findings in the present study that indicated youth who learn defusion techniques (i.e., being able to differentiate thoughts from self) exercise more psychological flexibility and can adapt more readily to troublesome situations (Luciano et al., 2011). Based on the present study's findings, three of the four participants were able to apply defusion skills (i.e., being able to separate themselves from the situation) while adapting to environmental demands, living more mindfully, and practicing ways to take another's perspective into account.

In addition to becoming more psychologically flexible, participants also learned how to interact with others when they were frustrated and how to process events that made them angry. The ARAR intervention also drew heavily upon Crick and Dodge's (1994) Social Information Processing (SIP) model. According to Dodge et al. (2013), an effective intervention should

incorporate three social-cognitive processes into treatment: (a) reducing hostile-attribution biases, (b) increasing competent response generation to social problems, and (c) devaluing aggression. Dodge, et al. (2013) further explained that social-cognitive processes are a means through which life experiences are internally stored, and these memories often guide future behavior, indicating that social processes are relevant to the behavior of aggressive youth.

An observation in the present study was that all four participants often struggled with problematic social skills that could escalate to frustrating situations. When participants were taught how to process what was happening at the moment, they were better able to offer alternative solutions to the frustrating event rather than resort to their past problematic behaviors. This observation supports the importance of helping youth understand the interplay between social interactions, interpretations, and perceptions when they are angry.

Overall, the present study was based on theory, and previous research aided in the development of an evidence-based individualized anger regulation and aggression reduction program. The SCRD method was used to examine individual intervention effects. Unfortunately, the SCRD approach to address adolescent anger and aggression is not often used in the field as most researchers opt for between-group experimental and quasi-experimental designs. As anger is not a one size fits all emotion, it is imperative that researchers and counselors use customized applicable and practical interventions to individualize treatment. Additionally, SCRDs mimic true-to-life counseling environments. Thus, they are relevant and applicable means to collect and analyze data. According to the literature, there are many adolescents who need help with their problematic anger and aggression (Kassinove & Tafrate, 2002; Scherer, et al., 2004; Sukhodolsky, et al., 2016). Developing customized treatment interventions designed specifically

for individuals with treatment goals based on specific areas of concern appears to be an advantageous way to address that need.

### **Strengths**

The present study has many strengths that support the ARAR intervention. For example, replication was achieved via four participants. It has been recommended that for an SCRCD to be generalizable, an N=1 research design should be replicated at a minimum of three times (Lenz, 2015). Also, this study supports the use of single-case research designs to show change as a result of an intervention (Kazdin, 2011; Kennedy, 1992; Lenz, 2015; Ray, 2015) while controlling for threats to validity (Byiers, et al., 2012; Kazdin, 2011; Kennedy, 1992). In the SCRCD employed in the present study, each participant served as his own control, increasing internal validity, and the results highlighted individual differences that occurred during each phase of the interventions, supporting generalizability.

The present study also contained a variety of assessments to glean the intervention's effectiveness such the MSAI-12, RPQ, ATT and pre-post staff questionnaire that provided measures of levels of participant anger, aggression, and attitude toward the intervention and perceptions of the intervention's impact from a significant adult. In addition to the various assessments, a layered data analysis approach was used to further validate the findings. For example, the data were initially analyzed via visual analysis, and the descriptive statistics, autocorrelation, and trend analysis were examined to determine the appropriate statistical analysis methods. Effect sizes were calculated and parametric analyses via ANOVA and Tukey's HSD post-hoc analyses provided confirmatory support for the visual analysis. Lastly, to enhance the study's integrity, the counselor/investigator took precautionary steps beyond the scope of the dependent variable assessments by employing the ATT and the pre-post ARAR staff



questionnaire social validity measures. Additionally, documentation of any extraneous occurrences that may have affected the data was conducted by the counselor/investigator. Using a multifaceted method of data collection added to the study's fidelity and often mirrored what was occurring during the individual sessions.

The strongest attribute of the present study was that each participant met one-on-one with the counselor/investigator for six sessions and received a mutually created treatment plan based on their identified needs and desired need-based goals. The sessions were not an all-inclusive approach aimed at addressing all participants' needs at once but rather a tertiary-level approach in which the interventions were individualized and directed toward youth who had been identified as displaying more intense and frequent problematic behaviors (Kuhn et al., 2015). The customized approach was specially tailored to suit and fit each participant's needs. Perhaps the most telling hallmark of the intervention's success was that each participant rated their ARAR intervention to be helpful and worthwhile.

### **Limitations**

Despite the study's strengths, there were several limitations that warrant discussion. For example, the participants were comprised of a convenience sample recruited from an afterschool program and therefore were from a convenience sample rather than a randomized group of participants. Additionally, due to time constraints, there was a limited opportunity for dependent variable observations in the three phases, which may have resulted in smaller effect sizes. Ideally, there would have more time to collect data during baseline to ensure stabilization. Without stabilization in baseline, there is a threat to internal validity, as there may not have been enough observations to assess participants' baseline anger and aggression prior to the treatment (Heppner et al., 2015).

Testing could have also threatened the study's internal validity. Though the assessment protocol (MSAI-12 and RPQ) took less than five minutes for participants to take, they took the assessments a total of 14 times over the course of eight weeks. Participants may have become inattentive, bored, tired and disinterested in the task. Fatigue or testing bias is a well-documented phenomenon (Hart, Rennison, & Gibson, 2005). Additionally, unlike the RPQ, the questions on the MSAI-12 could not be randomized due to wording, which may have contributed to testing effects, thus affecting the findings specific to the dependent variable of anger. Regarding participants taking the assessments regularly, for the most part, the participants took the assessments when prompted through the *Remind* application, and in two situations, the counselor/investigator had to reach out to the key staff member who reminded the participants to take the assessments. The data were collected in a timely manner, but fatigue bias and question familiarity were still a concern.

As for the assessments, in retrospect, using MSAI-12 was most likely not an ideal measure of anger for the present study. This study was conducted at the end of the school year, and most of the participants were beginning to disengage from school and focus on their summer plans. The MSAI-12 asked questions specific to anger in the school setting, and at the time of the study, students may have not cared as much. At the onset of the study, it was hoped that the intervention would have been implemented in a school setting, but, due to the study occurring during the mandated testing window, that was not an option. Ideally, it would have been better to give the MSAI-12 in a school setting between the end of the first and third quarter and not at the close of the academic year.

One final limitation worth noting was that the author of this dissertation was also the counselor/investigator of the study who conducted the customized ARAR interventions.

Although this provided consistency in the study, it can also be problematic. The counselor/investigator had a direct interest in the study's outcome and, therefore, the participants were also aware that the goal was to increase anger regulation and decrease aggression. Thus, demand characteristics could have come into play, and participants could have second-guessed their responses on the measures and answered them according to what they thought the counselor/investigator desired, thus affecting internal validity (McCambridge, de Bruin, & Witton, 2012). Fortunately, the repeated snapshots of data may have helped decrease this internal threat as it was easy to monitor consistency and changes during each data point and phase of the study.

### **Recommendations**

Several lessons were learned from the present study that would be adjusted in future replications. To begin with, the timing of data collection was at the very end of the school year. In retrospect, that was not an ideal time to conduct a study. Due to the timing of the study, the counselor/investigator only had an eight-week window to work within before students began their summer break. Also, emotionally, the participants were not as invested in school as they were looking forward to moving onto the next grade level. Thus, the recommendation would be to implement the study earlier in the school year and not at the end.

Next, the setting of the intervention was an afterschool program, and ideally, it would have occurred in a school setting and be delivered by a professional school counselor. School counselors are in a unique position because they usually have rapport established with their students, can access disciplinary information and grades, know pertinent information pertaining to obstacles that may impede a student's academic performance (e.g., learning disabilities), and can communicate with the student's parents/guardians, teachers, and administrators regarding

how the student is doing. For the present study, this information would have been useful, particularly with Devon. It is likely that Devon's school counselor would have been aware of his learning and behavioral issues (possibly deficit hyperactivity disorder [ADHD]) and made modifications to implement the most appropriate intervention (e.g., an emotional regulation program) at the most optimal time based on his individual needs. Therefore, since the problematic behaviors manifested themselves in the school setting, it would seem most fitting to deliver the intervention in the same setting. It is recommended that an ARAR intervention is delivered in a school setting by a school counselor who has built rapport with the students and has access to essential information pertaining to the identified student.

In the present study, adolescent males were the interest group as the research suggest that males reportedly show more physical and direct aggression (Boman, 2003; Fite, Rubens, Preddy, Raine, & Pardini, 2014; Fives, et al., 2011). However, the ARAR intervention is not gender specific and could easily be applied with males and females. Additionally, research findings support the notion that females could also benefit from interventions, such as the ARAR program, as they, too, experience problematic anger and aggression (Archer, 2004; Fives et al., 2011). Regarding replication of the present study, it would of interest to implement the ARAR intervention with females before conducting a mixed gender study to see if the findings would show similar results as it did with males.

Additionally, disciplinary data involving students' racial identity should be closely examined, as research has shown race as an indicator of disciplinary disparity within the school setting (Bradshaw, et al., 2010; Eitle & Eitle, 2004; Skiba, et al., 2011). Previous reports indicate that students who are not white receive substantially more disciplinary referrals (Bradshaw, et al., 2010; Skiba, et al., 2011), are suspended and expelled more often (Eitle & Eitle, 2004;

Gregory & Weinstein, 2008), are arrested more often in schools (Theriot, 2009), and experience harsher disciplinary consequences for similar offenses as their white counterparts (Skiba, et al., 2011). Though race and school disciplinary infractions were not a part of the present study's inclusion criteria, based on literature pertaining to racial disciplinary disparity in the U.S. public education system (Bradshaw, et al., 2010; Fabelo, et al., 2011; Gregory & Weinstein, 2008; Skiba, et al., 2011; Smith & Harper, 2015; Theriot, 2009), it was not unusual to have four African American male participants who have been suspended in the past year participate in the study.

It is essential to offer programs to help these youth across race and gender. Scholars advocate that schools should design interventions based on cultural awareness and equity (Gregory, et al., 2016), policy (Carter, et al., 2014), and research (Skiba, et al., 2011). Both the ASCA National Model (ASCA, 2012a) and MSJCC (Ratts, et al., 2016) require professional counselors to provide culturally responsive interventions that address the individual and system level. However, if more non-white students are being referred for services or receiving more disciplinary infractions, the problem may be more disproportionately systemic than individualistic as has been well established by previous research (Bradshaw, et al., 2010; Fabelo, et al., 2011; Gregory & Weinstein, 2008; Losen & Martinez, 2013; Skiba, et al., 2011; Smith & Harper, 2015; Theriot, 2009).

Along with making the intervention inclusive of gender and race, the length of the intervention should be extended to gather more data during all phases and allow for more psychoeducation by extending the number of sessions. In the present study, the treatment phase was six sessions. Ideally, the sessions would be extended to a 10 session 45-60 minute treatment

duration. Each session may also vary in duration as some students may need longer to achieve the desired results than others.

The first session would include rapport building and goal setting, sessions two through seven would focus on the three components of anger, sessions eight and nine would focus on aggression, and week 10 would be a closing/termination session. In the present study, the number of sessions did not allow for an adequate time to cover all factors and variables represented in the study. In conclusion, an additional four sessions would have helped to make the ARAR intervention more comprehensive. Additionally, as noted on the ARAR plans (see Appendix E), some participants needed a longer session to cover the material than others. Individual needs should be taken into consideration, and the treatment should be customized so that the session lasts as long as needed to adequately cover the material and achieve the desired goals.

### **Future Implications**

As anger and aggression have been associated with long-term academic, interpersonal, and emotional problems (Smith, et al., 2016), it is imperative that schools take an active role to teach these youth how to cope with troublesome emotions that result in problematic behaviors rather than suspending them from their academic settings. It is also important that appropriate measures are taken to understand the role of gender and race in singling out youth's problematic behaviors because non-white males are most often singled out for non-compliant angry and aggressive behaviors, and they receive harsher disciplinary consequences than their peers (Boman, 2003; Bradshaw, et al., 2010; Fite, et al., 2014; Fives, et al., 2011; Losen & Martinez, 2013; Skiba, et al., 2011).

The findings provided many implications for counseling professionals, particularly

professionals working with youth in a school setting. A growing body of literature exists that details the need for comprehensive individualized effective anger and aggression interventions in schools (Barnes, et al., 2014; Feindler & Engel, 2011, 2014). Most of the research on anger and aggression in the school setting is based on either school-wide programs or those offered via small groups consisting of identified students who need anger management (Barnes, et al., 2014; Burt, et al., 2010; Burt, et al., 2013; Kuhn, et al., 2015). Though these interventions are well intended, they are based on a one size fits all philosophy and not tailored to fit a student's specific needs. Often school officials fault lack of school personnel, namely school counselors, and believe that individualized interventions are too time-consuming (Kuhn et al., 2015, Woods & Domina, 2014).

Though individualized interventions would initially take more time, in the long run, they are more cost-efficient. Effective evidence-based interventions can: (a) reduce discipline, resulting in fewer classroom disruptions; (b) decrease the amount of instructional time that classroom teachers have to spend redirecting problematic behavior; (c) lessen the amount of time administrators have to spend with repeated offender altercations and non-compliance issues; and (d) reduce the amount of time that students who need such interventions spend outside of the instructional environment due to disciplinary infractions. With data indicating youth anger and aggression continue to be a growing concern of parents, educators, and mental health providers (Feindler & Engel, 2011), the question should be how can we afford to not offer these services to students?

Currently, there are few SCRDS presented in the counseling literature (Barlow, et al., 2009; Gallo, et al., 2013). This is unfortunate because SCRDS are the most applicable designs that resemble what counselors do daily in their practice (Heppner, et al., 2015). The SCRDS offers

counselors and researchers a practical method for evaluating the effectiveness of an intervention that targets behaviors, emotions, personal characteristics, and other counseling-related characteristics (Ray, 2015). The SRCD is a user-friendly research method that can allow school counselors to empirically assess an intervention's effectiveness while being accountable and utilizing evidence-based practices in their work.

It is hoped that the findings from the present study shed light on the growing problem of youth anger and aggression and how appropriately trained and positioned k-12 school personnel can be instrumental in helping these youth better regulate emotions and reduce problematic behaviors. Rather than resorting to traditional disciplinary means such as suspension or expulsion, these youth should be offered customized interventions to address their specific needs. School counselors are well-positioned and trained to provide individual counseling to students who have behavioral and disciplinary problems.

It is imperative that researchers explore effective interventions using SCRCDs and provide additional resources and information pertaining to the development and implementation of such interventions. Second, and most importantly, it is essential that school officials examine better ways to allocate school counselors' time so that they can also focus on helping individual students who struggle with anger and aggression succeed both inside and outside of the classroom.

### **Conclusion**

In closing, the present study was an investigation of the effects of an intervention that filled a need for individualized, anger regulation and aggression reduction interventions in the school setting. Future studies that further investigate the ARAR program are warranted. Given the strengths and limitations of the present study, future studies can be designed to



replicate or to adopt many of the procedures used in the present study while improving upon and minimizing the limitations.

Conceivably, the greatest strength of the ARAR intervention was that all four participants found their participation to be a meaningful experience as evidenced by their high ratings on the ATT. Additionally, the key staff member also noted positive differences in three of the four participants' pre and post-intervention behaviors. Thus, the present study represents important contributions to both counseling and research and adds to an understanding of how SCRDS can be used to assess the effectiveness of individualized adolescent anger and aggression interventions within the context of the school setting.

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**APPENDICES**

## Appendix A: Attitude Toward Treatment Measure (ATT)

**Attitude Toward Treatment Measure (ATT)**

Now that you have completed the ARAR program, please complete the following questions by circling the number on the scale that is closest to how you feel.

1. How confident are you that this program will be successful in helping you?
  - 1 not at all confident
  - 2
  - 3
  - 4 somewhat confident
  - 5
  - 6
  - 7 very confident
  
2. How logical does this type of program seem to you?
  - 1 not at all logical
  - 2
  - 3
  - 4 somewhat logical
  - 5
  - 6
  - 7 very logical
  
3. Are you willing to undertake a similar program sometime in the future?
  - 1 not at all willing
  - 2
  - 3
  - 4 somewhat willing
  - 5
  - 6
  - 7 very willing
  
4. How beneficial do you think this program was for you?
  - 1 not at all beneficial
  - 2
  - 3
  - 4 somewhat beneficial
  - 5
  - 6
  - 7 very beneficial

5. How does this program compare in effectiveness with just doing nothing?
- 1 much worse than nothing
  - 2
  - 3
  - 4 the same as nothing
  - 5
  - 6
  - 7 much better than nothing
6. How does this program compare in effectiveness with teaching yourself?
- 1 much better than own attempts
  - 2
  - 3
  - 4 same as own attempts
  - 5
  - 6
  - 7 much worse than own attempts
7. How useful were the described program techniques?
- 1 not useful at all
  - 2
  - 3
  - 4 moderately useful
  - 5
  - 6
  - 7 very useful
8. How well was the program explained?
- 1 not at all well
  - 2
  - 3
  - 4 moderately well
  - 5
  - 6
  - 7 very well

9. How believable was the program?

- 1 not at all believable
- 2
- 3
- 4 moderately believable
- 5
- 6
- 7 very believable

10. How valuable is the program in treating self-defeating behaviors?

- 1 not at all valuable
- 2
- 3
- 4 moderately valuable
- 5
- 6
- 7 very valuable

11. To what degree has the program changed your idea of problems related to self-defeating behaviors?

- 1 no change at all
- 2
- 3
- 4 moderate change
- 5
- 6
- 7 very much change

12. How understandable was the explanation of the program?

- 1 not at all understandable
- 2
- 3
- 4 moderately understandable
- 5
- 6
- 7 very understandable

13. To what degree did this program help in understanding yourself?

- 1 not at all helpful
- 2
- 3
- 4 moderately helpful
- 5
- 6
- 7 very helpful

14. To what extent does the program allow for insight into yourself?

- 1 no insight at all
- 2
- 3
- 4 moderate insight
- 5
- 6
- 7 very much insight

## Appendix B: ARAR - Staff Questionnaire (ARAR-SQ)

**Anger Regulation Aggression Reduction -Pre-Staff Questionnaire**

Directions: Please complete the following questions by indicating the number on the scale that reflects your opinion of student's need for the ARAR program.

1. The student has difficulty regulating anger and aggressive behaviors in the educational setting.

Please circle only one answer.

1	2	3	4	5
<i>strongly disagree</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly agree</i>

2. The student is quick to anger in comparison to other peers.

Please circle only one answer.

1	2	3	4	5
<i>strongly disagree</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly agree</i>

3. The student behaves inappropriately when he is angry.

Please circle only one answer.

1	2	3	4	5
<i>strongly disagree</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly agree</i>

4. The student's anger and aggression has progressively escalated over time.

Please circle only one answer.

1	2	3	4	5
<i>strongly disagree</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly agree</i>

5. The student could benefit from an anger regulation and aggression reduction intervention.

Please circle only one answer.

1	2	3	4	5
<i>strongly disagree</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly agree</i>

### Anger Regulation Aggression Reduction -Post-Staff Questionnaire

Directions: Please complete the following questions by indicating the number on the scale that reflects your opinion of the student's experience in the ARAR program.

1. The student continues to have difficulty regulating anger and aggressive behaviors in the educational setting.

Please circle only one answer.

1	2	3	4	5
<i>strongly</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly</i>
<i>disagree</i>				<i>agree</i>

2. The student continues to be quick to anger in comparison to other peers.

Please circle only one answer.

1	2	3	4	5
<i>strongly</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly</i>
<i>disagree</i>				<i>agree</i>

3. The student continues to behave inappropriately when he is angry.

Please circle only one answer.

1	2	3	4	5
<i>strongly</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly</i>
<i>disagree</i>				<i>agree</i>

4. The student's anger and aggression has continued to escalate.

Please circle only one answer.

1	2	3	4	5
<i>strongly</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly</i>
<i>disagree</i>				<i>agree</i>

5. The student has benefited from an anger regulation and aggression reduction intervention.

Please circle only one answer.

1	2	3	4	5
<i>strongly</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly</i>
<i>disagree</i>				<i>agree</i>



## Appendix C: ARAR Intervention Framework

### ARAR FRAMEWORK

*Topics will be chosen based on the participant's individual and specific needs.*

#### **Session I - Identifying Anger and Aggression**

- Agenda Setting
  - Introduction
  - Description of Counseling Guidelines
  - Time, frequency, and Duration of Sessions
- Goal Setting
- Anger Profile – Affective, Cognitive, Behavioral and Aggression Response Style
- Characteristics of Anger/Aggression Defining – Affective, Cognitive, Behavioral, Aggression
- Anger and Aggression Tracking Mechanism (Behavioral Log) – Affective, Cognitive, Behavioral, Aggression
- Summary

#### **Session II – Understanding Anger and Aggression**

- The Upside to Anger -Normalizing Anger/Other Strong Emotion – Affective, Behavioral, Aggression
- Family Dynamics – Affective, Behavioral
- Internalizing and Externalizing Anger – Affective, Behavioral, Cognitive
- Understanding Aggressive Behaviors – Behavioral, Aggression
- Cultural and Systemic Triggers
- Summary

#### **Session III – Anger Dynamics**

##### Physical

- Fight Flight or Freeze Response
- Physiological Indicators of Anger – Behavioral, Aggression

##### Affective

- Feelings/Emotions
- Identifying Emotions
- Masking Emotions
- Articulating Feelings

##### Cognitive

- Observing Thoughts
- Thought Distortions
- ABCs of Anger
- Decision-making
- Summary

**Session IV – Communication and Social Information Processing**

- Perception – Affective - Behavioral, Cognitive
- Expressing Anger - Behavioral, Aggression
- Using Verbal's and Nonverbals – Behavioral, Aggression
- Assertion Versus aggression – Behavioral, Aggression
- Choices and Responses Behavioral, Cognitive, Aggression
- Coping with Conflict – Behavioral, Cognitive, Aggression
- Summary
- Discussion of closure

**Session V – Constructive Coping Mechanisms**

- Anger In (Self-Destruction) – Behavioral, Aggression
- Anger Out (Destructive Behaviors) - Behavioral, Aggression
- Summary

**Session VI – Self-Regulation and Psychological Flexibility**

- Psychological Flexibility – Cognitive, Behavioral
- Outlets Through Music, Art, Humor, Physical Activities - Behavioral
- Imagery – Affective, Cognitive, Behavioral, Aggression Relaxation – Affective, Cognitive, Behavioral, Aggression
- Soothing Skills – Cognitive, Behavioral
- Accepting Self
- Summary
- Closure

## Appendix D: ARAR Supplemental Activities

<b>ARAR SUPPLEMENTAL ACTIVITIES</b>		
Session	Activity	Date Completed
<b>Identifying Anger and Aggression</b>		
1	Setting Goals and Creating Action Plans	
1	Keeping an Anger and Aggression Log	
<b>Understanding Anger and Aggression</b>		
2	Recognizing Your Anger and Aggression Triggers	
2	Understanding Family Patterns	
2	Physical Responses to Anger	
2	Fight Flight or Freeze	
<b>Anger Dynamics (Affective, Cognitive, and Behavioral)</b>		
3	Unmasking Anger	
3	Observing Thoughts	
3	Thought Distortions	
3	Progression of Anger and Aggression Escalation	
3	The ABCs of Anger	
3	Perception	
3	More than Words – Body Language	

<b>ANGER REGULATION AND AGGRESSION REDUCTION SCHEDULE</b>		
Session	Activity	Date Completed
4	The Power of Words	
4	Filtering Responses	
4	Good Listening	
4	Criticism and Compliments	
4	Decision-making Processes	
<b>Constructive Coping Mechanisms</b>		
5	Perspective Taking	
5	Gathering Facts	
5	Anger and Positive Results	
<b>Self-Regulation and Psychological Flexibility</b>		
6	Using Humor to Deescalate Anger and Aggression	
6	Taking a Mental Vacation	
6	Releasing Anger Symbolically	
6	Relaxation Techniques	
6	Handling Anger Constructively	
<b>Closure</b>		
6	Seeing How Far You Have Come	
6	Closure and Certificate	

## Appendix E: Anger Regulation and Aggression Reduction Plan

**Individual ARAR Plans****Adam**

<b>Goals and Action Steps</b>		
<b>Goal</b>	<b>Personal and Social Goals (PSG)</b>	<b>Action Steps to Obtain Goal</b>
<b>1</b>	To learn to identify anger triggers and how anger can lead to poor choices (aggression) that can result in undesirable consequences.	<ul style="list-style-type: none"> <li>*Recognize and acknowledge how anger feels and how it affects the body.</li> <li>*Analyze behavioral reactions to anger and examine how current responses are affecting decisions.</li> </ul>
<b>2</b>	To learn to look at the pros and cons of a decision and make the best choice rather than acting on a whim; especially when around peers who are making poor choices.	<ul style="list-style-type: none"> <li>*SIP</li> <li>*Distinguishing between decisions needing to be made (e.g., decisions that are proactive, risky, and those that need more information before making).</li> <li>* Listing alternatives (pros and cons).</li> <li>* Identifying criteria for comparing options and the possible consequences of each option.</li> <li>* Assessing the probability of possible consequences.</li> <li>*Evaluating options.</li> <li>*Implementing an action plan</li> </ul>
<b>3</b>	To decrease problematic behavior with friends by learning to identify healthy relationships.	<ul style="list-style-type: none"> <li>*Using the social information processing model to help decrease problematic peer associated behaviors.</li> <li>*Applying the decision-making process to social information processing.</li> </ul>

<b>4</b>	To learn skills to cope with frustrating situations.	<p>*Using a variety of mindfulness and acceptance techniques to recognize cues to anger (e.g., relaxation, imagery, use of metaphors and role play).</p> <p>*Practice skills to differentiate self from thoughts such as (a) accepting thoughts (b) identifying values, and (c) living according to identified values. To be able to use the process of deictic framing (I-HERE-NOW versus I-THERE-THEN) to help increase psychological flexibility.</p>
<b>Goal</b>	<b>Academic Goals (A)</b>	
<b>1</b>	End the school year with all A's and B's.	*Completing 100% of all assignments and turn them in on time. Study and prepare for tests and projects. Do well on the end of grade tests.

### Intervention Components

<b>Session</b>	<b>Domains/Content</b>	<b>Learning Tasks</b>	<b>Purpose and Rationale</b>	<b>Duration</b>	<b>Goal</b>
<b>1</b>	<p><b>Identifying Anger and Aggression</b></p> <p>*Rapport Building</p> <p>*Session Structure</p> <p>*Goal Setting</p> <p>*Defining Anger and Aggression</p> <p>*Differentiating Between Proactive and Reactive Aggression</p>	<p>*Assessment Review</p> <p>*Establishment of Goals</p> <p>*Getting Information</p> <p>*Trigger Identification</p> <p>*Conversation About Anger and Aggression</p> <p>*Anger Profile</p>	<p>To develop the customized intervention framework for subsequent sessions.</p> <p>To examine the anger profile and identify specific triggers that lead to an angry behavioral response.</p>	50 min	1 PSG

2	<p><b>Understanding Anger and Aggression</b></p> <ul style="list-style-type: none"> <li>*Identifying Anger Triggers</li> <li>*Exploring Anger Response Styles</li> <li>*Examining Family Patterns</li> <li>*Assertion &amp; Aggression</li> </ul>	<ul style="list-style-type: none"> <li>*Trigger Activity</li> <li>*Family Genogram</li> <li>*Hypothetical Situations and Practicing Responses</li> <li>*Differentiating Assertion from Aggression</li> <li>*Exploring Behavioral Patterns</li> <li>*Academic Goals</li> </ul>	<p>To help the participant understand what triggers anger. To explore family dynamics and the interplay between thoughts and behavioral responses.</p> <p>To be able to understand anger response styles and differentiate between aggression and assertion.</p>	55 min	1, 2, & 4 PSG 1 & 2 A
3	<p><b>Anger Dynamics</b></p> <ul style="list-style-type: none"> <li>*Physiological Cues and Reading Anger Signs</li> <li>*Examining Anger by Identifying Emotions</li> </ul>	<ul style="list-style-type: none"> <li>*Physiological Cues</li> <li>*Brain Game</li> <li>*Fight Flight Freeze</li> <li>*Anger and the Body</li> <li>*Identify and Describe Feelings</li> <li>*Decision-making</li> <li>*Breathing Exercise</li> <li>*Academic Goals</li> </ul>	<p>To examine the emotional and physiological steps the body undergoes when anger begins to dominate the psyche.</p> <p>To understand what is happening internally when you are angry.</p> <p>To explore how stress can lead to anger and also activate the fight/flight and freeze stress response.</p> <p>To identify feelings and</p>	60 min	P 1, 2, 3 & 4 1 A

			differentiating how they feel.		
4	<p><b>Communication/ Social Information Processing</b></p> <p>*Verbal and Non-verbal Communication Skills</p> <p>*Encoding and Processing Information</p>	<p>*Decision-making – Weighing Out Options</p> <p>*Perception</p> <p>*Emotional Regulation Car (discuss how the different components of the car are reflective of decisions and actions)</p> <p>*Academic Goals</p>	<p>To learn the importance of decision-making and how to weigh out options by examining potential consequences.</p> <p>To use optical illusions and perceptual games to explore differences and the perception of right and wrong.</p> <p>To develop a tangible example of how important emotional regulation is and how we have the power to manage behaviors.</p>	60 min	<p>P 1, 2, 3 &amp; 4</p> <p>1 A</p>
5	<p><b>Constructive Coping Mechanisms</b></p> <p>*Destructive versus Constructive Responses.</p>	<p>*Role Play - Anger Provoking Scenarios</p> <p>*Perspective Taking</p> <p>*Handling Frustration and Voicing Concerns</p>	<p>To practice incorporating the skills and applying them in real situations.</p> <p>To filter situations through another</p>	55 min.	<p>1, 2 &amp; 3 P&amp;S</p> <p>1 A</p>



	<p>*Facts Before Reacting</p> <p>*Perspective Taking</p>	<p>with Power and Purpose</p> <p>*Academic Goals</p>	<p>lens and learn that people feel, see and respond to situations in different ways.</p> <p>To learn how to use your voice with power and not become aggressive or withdrawn.</p>		
6	<p><b>Self-regulation and Psychological Flexibility</b></p> <p>*Self-distancing</p> <p>*Identifying Anger Provoking Thoughts</p> <p>*Using Metaphors and Imagery Through Defusion to Distinguish Self from Thoughts and Situations.</p>	<p>*Relaxation Techniques (progressive muscle relaxation and breathing)</p> <p>*Emotional Acceptance</p> <p>*Synthesizing Material</p> <p>*Academic Goals</p>	<p>To learn tools and skills to interact differently with anger provoking thoughts.</p> <p>To learn to separate self from thoughts and allow thoughts to come and go without giving them power.</p> <p>To ride the wave not fight it.</p> <p>To summarize all material covered and bring closure to the sessions.</p>	60 min.	1, 2 & 3 P&S 1 A

## Individual ARAR Plan Jordan

<b>Goals and Action Steps</b>		
<b>Goal</b>	<b>Personal and Social Goals</b>	<b>Action Steps to Obtain Goal</b>
<b>1</b>	Learn how to appropriately express anger rather than internalizing it until “snapping”.	<ul style="list-style-type: none"> <li>*Acquire the knowledge, attitudes and interpersonal skills to help understand how environmental, societal and intrapersonal factors affect behaviors.</li> <li>*Be able to assert self with assertion and not aggression.</li> <li>*Understand the importance of emotional regulation and how to manage problematic emotions.</li> </ul>
<b>2</b>	Be able to identify when anger is escalating.	<ul style="list-style-type: none"> <li>*Be able to articulate and express emotions with words.</li> <li>*Be able to use skills to interpret non-verbal and verbal cues.</li> <li>*Be able to draw from a toolbox of mindfulness and acceptance techniques to help with relaxation, imagery, modeling, and role play.</li> </ul>
<b>3</b>	Learn and practice verbally communicating feelings of anger and frustration.	<ul style="list-style-type: none"> <li>*Learn and implement strategies to deal with frustration through communication and self-expression.</li> <li>*Use a variety of mindfulness and acceptance techniques to recognize cues to anger (e.g., relaxation, imagery, modeling, and role play).</li> <li>*Teach process of deictic framing (I-HERE-NOW versus I-THERE-THEN) and framing to help increase psychological flexibility and learn to separate self from the event.</li> <li>*Be able to interact differently with thoughts rather than harboring and suppressing them.</li> </ul>
<b>Goal</b>	<b>Academic Goals</b>	

<b>1</b>	End of the year with all A's and B's before going to high school. Professional goal to become an attorney.	*Complete 100% of all assignments and turn them in on time. Study and prepare for tests and projects and do well on the end of grade tests.			
<b>Intervention Components</b>					
Session	Domains/Content	Learning Tasks	Purpose and Rationale	Duration	Goal
<b>1</b>	<b>Identifying Anger and Aggression</b> *Rapport building, *Session Structure, *Goal Setting *Trigger Identification *Academic Goals	*Assessment Review *Establishment of Goals *Demographic Information *Trigger Identification *Academic Goals	To develop the customized intervention framework for subsequent sessions.  To examine the anger profile and identify specific triggers that lead to an angry outburst.	50 min	1&2 P&S 1 A
<b>2</b>	<b>Understanding Anger and Aggression</b> *Trigger Review  *Physiological Cues *Fight Flight Freeze  *Understanding biological mechanisms of anger	*Activity on Triggers and Fight/Flight/Freeze, Anger and the Body *Breathing Exercise *Academic Goals	To understand how the body and mind interact with anger and what events/situations lead to anger.  To work toward honor roll goal of all As and Bs.	60 min	1 & 2 P&S 1 & 2 A

3	<p><b>Anger Dynamics</b>  *Increase Awareness by Discussing Myths and Facts About Anger</p> <p>*Verbal Awareness</p> <p>*Masking Emotions</p>	<p>*Myths and Facts About Anger</p> <p>*Physiological Indicators</p> <p>*Masking Emotions Activity</p> <p>*Thoughts that Fuel Anger.</p> <p>*Academic Goals</p>	<p>To help bring awareness to the multi-facets of anger.</p> <p>To explore the other emotions that anger may be hiding.</p> <p>To examine how thoughts can contribute to anger.</p>	45 min	1, 2 3 P&S 1 A
4	<p><b>Communication/ Social Information Processing</b></p> <p>*Assertion vs. Aggression</p> <p>*Processing Information and Making an Action Plan Based on Information Received</p> <p>*Perception</p>	<p>*Role Play Skits for Handling Situations Aggressively Versus Assertively</p> <p>*Examining Different Perspectives with Optical Illusions and Brain Teasers</p> <p>*Weighing the Pros and Cons in When Making Decisions</p>	<p>To learn the importance of decision-making and how to weigh out options by examining potential consequences.</p> <p>To use optical illusions and perceptual games to explore differences and how some things in life may not be right or wrong.</p> <p>To develop a tangible</p>	55 min	1, 2 3 P&S 1 A

			example of how important emotional regulation is and how we have the power to manage our behaviors by separating self from thoughts.		
<b>5</b>	<p><b>Constructive Coping Mechanism</b></p> <p>*Destructive versus Constructive Responses</p> <p>*Learning to Get the Facts Before Lashing Out</p> <p>*The Importance of Perspective Taking.</p>	<p>*Soda Bottle Explosion</p> <p>*Learning to Release Steam</p> <p>* Practice Vocalizing Concerns Through Case Scenarios</p> <p>*Perception Activities</p> <p>*Academic Goals</p>	<p>To practice incorporating the skills into practice.</p> <p>To filter situations through another lens and learn that not everyone sees, feels or responds to situations in the same way.</p> <p>Learning how to vocalize frustration when things are not fair through the use of assertion.</p>	50 min	1, 2 3 P&S 1 A
<b>6</b>	<p><b>Self-regulation and Psychological Flexibility</b></p> <p>*Breathing</p>	<p>*Acceptance through Metaphors</p>	Relaxation techniques, through progressive	50 min	1, 2 3 P&S 1 A

	<p>*Relaxation</p> <p>*Sensory Soothing</p> <p>*Synthesizing Core Domains</p>	<p>*Complete a Treasure Box Synthesizing Session Information</p> <p>*Progressive Muscle Relaxation</p> <p>*Creating a Mental Getaway</p> <p>*Game of Tapping into 5 Senses through Object Exploration</p> <p>*Academic Goals</p>	<p>muscle relaxation and breathing.</p> <p>Create a way bottle to help teach emotional acceptance.</p> <p>Check-in on academics.</p>		
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## Individual ARAR Plan

### Devon

<b>Goals and Action Steps</b>		
<b>Goal</b>	<b>Personal and Social Goals</b>	<b>Action Steps to Obtain Goal</b>
<b>1</b>	Learn how to control and manage problematic behaviors.	<ul style="list-style-type: none"> <li>*Acquire the knowledge, attitudes and interpersonal skills to help understand how environmental, societal and intrapersonal factors affect behavior.</li> <li>*Understand the importance of a positive self-concept.</li> <li>*Understand the importance of emotional regulation and how managing emotions affect emotional and behavioral outcomes.</li> <li>*Teach how mood awareness can help decrease problematic behaviors and how to gauge social and peer-to-peer conflict by examining the situation.</li> </ul>
<b>2</b>	To learn to identify anger triggers and how impulsive decisions can lead to poor behavioral choices (aggression) that can lead to undesirable consequences.	<ul style="list-style-type: none"> <li>*Understand the interaction between triggers, physiological, emotional, thinking processes, feelings, and how behaviors are linked to anger.</li> <li>*Teach conflict resolution skills (e.g. active listening, reading non-verbal cues, using assertion rather than aggression and behavioral modeling and rehearsal to work through direct conflict).</li> </ul>
<b>3</b>	Learning and practicing communication, conflict resolution, impulse control, and decision-making skills.	<ul style="list-style-type: none"> <li>*Learn somatically, communication, problem-solving, and conflict resolution skills relevant to needs.</li> </ul>

		<p>*Use a variety of mindfulness and acceptance techniques to help recognize cues to anger (e.g., relaxation, imagery, modeling, and role play).</p> <p>*Teach process of deictic framing (I-HERE-NOW versus I-THERE-THEN) and framing to help increase psychological flexibility.</p>
<b>Goal</b>	<b>Academic Goals</b>	
<b>1</b>	End the fourth quarter with A's and B's.	*Complete 100% of all assignments and turn them in on time. Study and prepare for tests and projects and do well on the end of grade tests.

### Intervention Components

Session	Domain/Content	Learning Tasks	Purpose and Rationale	Duration	Goal
<b>1</b>	<p><b>Identifying Anger and Aggression</b></p> <p>*Rapport building</p> <p>*Session Structure</p> <p>*Goal Setting</p> <p>*Anger Profile</p> <p>*Trigger Identification</p>	<p>*Assessment Review</p> <p>*Establishment of Goals</p> <p>*Demographic Information</p> <p>*Defining Anger</p> <p>*Anger Profile</p> <p>*Trigger and How They Get Activated</p> <p>*Academic Goal</p>	<p>To develop the customized intervention framework for subsequent sessions.</p> <p>To examine the anger profile and identify triggers that lead to an anger.</p>	50 min	2
<b>2</b>	<p><b>Understanding Anger and Aggression</b></p> <p>*Trigger Review</p> <p>*Anger Response Styles</p>	<p>*Anger Response Styles</p> <p>*School Rules and Fairness. Voicing Concerns Appropriately</p>	To understand how the body and mind interact with anger and what events/	45 min	<p>1 &amp; 2 P&amp;S</p> <p>1 A</p>



	<p>*What are Rules and Are They Fair?</p> <p>*Imagery and Symbolism</p>	<p>*Impulse Control</p> <p>*Letting go of Anger and Deep Breathing</p> <p>*Academic Goals</p>	<p>situations result in anger.</p> <p>To examine ways to cope with impulsive thoughts.</p> <p>Ensure participant is working toward honor roll goal of all As and Bs.</p>		
<b>3</b>	<p><b>Anger Dynamics</b></p> <p>*Antecedents, Consequences and Behaviors</p> <p>*Examining Anger Responses</p> <p>*Inattention Versus Focus</p> <p>*Impulsivity and Consequences</p> <p>*Learning how the body responds to stress</p>	<p>*Activity on Fight/Flight/Freeze, and Anger and Body Cues</p> <p>*Concentrate and Focus (Operation)</p> <p>*Academic Goals</p>	<p>Recognize anger triggers and warning signs when activated by listening and feeling the body's response.</p> <p>Develop an understanding of what is occurring in the brain when impulsive thoughts occur.</p> <p>To learn what it feels like to focus and how to pay attention to settings like school.</p>	50 min	<p>1, 2, &amp; 3 P&amp;S</p> <p>1 A</p>

<p><b>4</b></p>	<p><b>Communication/ Social Information Processing</b></p> <p>*Interpreting Social Cues</p> <p>*Emotional-regulation</p> <p>*Decisions on a Whim</p>	<p>*Examining and Reading Social Cues</p> <p>*Emotional-Regulation (build a model car and discuss how it represents who you are and how each component plays into what you need in life.)</p> <p>Metaphorical and Tangible Applications</p> <p>*Decision-making Process</p> <p>*Academic Goals</p>	<p>To practice interpreting various communication cues both verbal and non-verbal.</p> <p>To explore how to better regulate emotions by using a metaphor with a tangible object, like a model car.</p> <p>To explore how impulsivity can lead to problematic decisions.</p>	<p>45 min</p>	<p>1, 2, &amp; 3 P&amp;S</p> <p>1 A</p>
<p><b>5</b></p>	<p>Constructive Coping Mechanism</p> <p>*Destructive versus Constructive Responses</p> <p>*Perception and Looking at Things Through Another Lens</p> <p>*Getting the Facts Before You React</p> <p>*Perspective Taking</p>	<p>*Soda Bottle Explosion</p> <p>* Decision-making Model – Weighing out Options</p> <p>*Perception</p> <p>*Experiencing Similar Events but Interpreting Them Differently.</p> <p>*Academic Goals</p>	<p>To practice incorporating the skills into practice.</p> <p>To filter situations through another lens and learn that not everyone sees, feels or responds to situations in the same way.</p> <p>Learning to vocalize frustration when things are not</p>	<p>45 min</p>	<p>1, 2, &amp; 3 P&amp;S</p> <p>1 A</p>

			fair through the use of assertion.		
<b>6</b>	<b>Self-regulation and Psychological Flexibility</b>  *Breathing *Relaxation *Sensory Soothing *Synthesizing Information	*Emotional Acceptance – Wave Bottle and Relaxation  *Progressive Muscle Relaxation  *Breathing Skills  *Tapping into the Five Senses Through Describing and Exploring Objects  *Academic Goals	*Relaxation techniques, through progressive muscle relaxation and breathing.  *Create a way bottle to help metaphorically understand emotional acceptance.  *Check-in on academic status.	50 min	1, 2, & 3 P&S  1 A

## Individual ARAR Plan

### Tyler

<b>Goals and Action Steps</b>		
<b>Goal</b>	<b>Personal and Social Goals</b>	<b>Action Steps to Obtain Goal</b>
<b>1</b>	Learn and practice verbally communicating frustrations.	<ul style="list-style-type: none"> <li>*Acquire the knowledge, attitudes and interpersonal skills to help understand how environmental, societal and intrapersonal factors affect behavior.</li> <li>*Learn alternative ways to think about and manage anger.</li> <li>*Understand the importance of emotional regulation and how managing emotions effects behavioral outcomes.</li> </ul>
<b>2</b>	Identify and reinforce the use of, more realistic positive messages when anger.	<ul style="list-style-type: none"> <li>*Learn skills to recognize distorted thoughts.</li> <li>*Identify ways to challenge irrational thinking.</li> <li>*Teach how thoughts can lead to hurtful and problematic behaviors.</li> <li>*Examine the difference between criticisms and accepting compliments.</li> </ul>
<b>3</b>	Learn and practice using skills to calm down, communicate with others, resolve conflicts without aggression.	<ul style="list-style-type: none"> <li>*Learn and implement calming strategies to better manage frustrating events.</li> <li>*Use a variety of mindfulness and acceptance techniques to recognize cues to anger (e.g., relaxation, imagery, modeling, and role play). Increase challenging scenarios so participant has an opportunity to practice skills in session.</li> <li>*Teach process of deictic framing (I-HERE-NOW versus I-THERE-THEN) and framing to</li> </ul>

			help increase psychological flexibility.		
<b>Goal</b>	<b>Academic Goals</b>				
<b>1</b>	End the fourth quarter with A's and B's.		*Complete 100% of all assignments and turn them in on time. Study and prepare for tests and projects and do well on the end of grade tests.		
<b>Intervention Components</b>					
<b>Session</b>	<b>Domain/Content</b>	<b>Learning Tasks</b>	<b>Purpose and Rationale</b>	<b>Duration</b>	<b>Goal</b>
<b>1</b>	<b>Identifying Anger and Aggression</b> *Rapport building  *Session Structure  *Goal Setting  *Trigger Identification	*Assessment Review  *Establishment of Goals  *Demographic Information  *Trigger Activators and Identification	To develop the customized intervention framework for subsequent sessions.  To examine the anger profile and identify specific triggers that lead to an angry behavioral response.	60 min	2
<b>2</b>	<b>Understanding Anger and Aggression</b>  *Trigger Review *Physiological Cues  *Fight Flight Freeze  *Biological Mechanisms and Anger	*Activity on Triggers, Fight Flight Freeze and Body Cues  *Breathing Exercise  *Academic Goals	To understand how the body and mind interact when angry and what event/situations lead to an anger episode.  To examine familial patterns of anger.	60 min	1 & 2 P&S  1 A

			Ensure participant is working toward honor roll goal of all A's and B's.		
3	<p><b>Anger Dynamics</b></p> <ul style="list-style-type: none"> <li>* Focusing and Concentrating on a Given Situation</li> <li>*Looking for Patterns in Behaviors</li> <li>*Examining what Triggers Emotional Responses</li> <li>*Explore Anger and Aggression</li> </ul>	<ul style="list-style-type: none"> <li>*Anger and the Body (Operation game)</li> <li>*Identifying Strengths to Build Self-confidence</li> <li>*Unhealthy Thoughts Can Feed Anger</li> <li>*The Power of the Human Brain</li> <li>*Academic Goals</li> </ul>	<p>To explore skills and talents and identify things that bring a sense of fulfillment.</p> <p>To examine insecurities and how those play into thoughts and behaviors.</p> <p>To learn how anger can affect your well-being.</p>	60 min	<p>1, 2 &amp; 3 P&amp;S</p> <p>1 A</p>
4	<p><b>Communication/ Social Information Processing</b></p> <ul style="list-style-type: none"> <li>*Interpreting, Encoding, and Processing Cues</li> <li>*Decisional Balancing</li> <li>*Verbal and Nonverbal Cues</li> </ul>	<ul style="list-style-type: none"> <li>*Emotional Well-being (Built a car and discussed how each component is attached to our well-being)</li> <li>*Discussed the Importance of Verbal and Non-verbal Self-expression</li> </ul>	<p>To examine the role of self-care and how to manage feelings and emotions.</p> <p>To explore the art of communication using both nonverbal and verbal cues.</p>	60 min.	<p>1, 2 &amp; 3 P&amp;S</p> <p>1 A</p>

		*Academic Goals			
<b>5</b>	<p><b>Constructive Coping Mechanisms</b></p> <p>*Aggression Versus Assertion</p> <p>*The Power of Perception</p> <p>*Constructive Versus Destructive Behaviors</p>	<p>*Components of Communication (through use of an electronic circuit board)</p> <p>*Perspective Taking to Understand the Other's Points of View</p> <p>*Academic Goals</p>	<p>To practice incorporating the skills into practice.</p> <p>To filter situations through another lens and learn that not everyone sees, feels or responds to situations in the same way.</p> <p>To learn how to use your voice with power and not become aggressive.</p>	60 min.	1, 2 & 3 P&S 1 A
<b>6</b>	<p><b>Self-regulation and Psychological Flexibility</b></p> <p>*Emotional Acceptance</p> <p>*Relaxation</p> <p>*Sensory Soothing</p> <p>*Synthesizing Core Domains</p>	<p>*Relaxation Techniques - Using Progressive Muscle Relaxation and Breathing (blowing bubbles)</p> <p>*Emotional Acceptance (creating a wave bottle)</p> <p>*Synthesizing Sessions</p> <p>*Academic Goals</p>	<p>To learn tools to calm down and relax.</p> <p>Through the use of mindfulness skills were incorporated to promote psychological flexibility by stepping back and distancing self from situations that create frustration and anger.</p>	60 min.	1, 2 & 3 P&S 1 A

			<p>To examine all material covered in the final session and bring closure to the sessions by using popsicle sticks and writing core concepts learned on them then placing them in the treasure box.</p>		
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## Appendix F: Recruitment Materials

**Research Title:** The Effects of a Customized School-based Anger Regulation and Aggression Reduction Intervention

**Principal Investigator:** Raychelle Cassada Lohmann    **Faculty Sponsor:** Dr. Stanley Baker

### Oral Recruitment Script for Program Personnel

Hello, I want to let you know about an opportunity that we are able to offer some of our students. Our program will be participating in a research study conducted by counselor education doctoral student, Raychelle Lohmann from NC State University. As part of her dissertation, Raychelle will be conducting a study on adolescent anger and aggression. Her goal is to help youth learn how to manage and express their anger in healthier ways. The program and its materials are completely free and if you and your child choose to participate it will not cost you anything.

**About the Counselor/Investigator:**

Mrs. Lohmann has been working with teens and practicing counseling for over 20 years. She holds a Master of Science in Counselor Education from NC State University and is a National Board Certified Counselor, a Licensed Professional Counselor Supervisor in the state of NC and a Licensed School Counselor in NC. In addition to her counseling experience, Mrs. Lohmann is an international author and has written specifically on the topic of teen anger and aggression. For years, she has worked with youth who struggle with anger and aggression as well as conducted national training to those who work with them. Many of her materials have been used at various agencies, organizations, and schools across the nation, For her doctoral research project, she has joined forces with our program to work with a select group of individuals to help them better manage their anger and aggression.

**Learn More:**

Mrs. Lohmann would like to personally invite you to learn more about her research project and explore the prospects of your child’s participation. All the meetings will occur here on site, so you do not have to travel to participate. Attached is a flyer explaining more about the program. If you would like to meet or speak with Mrs. Lohmann, please place your name and a good point of contact the on this piece of paper and I will give it to her. She will reach out to you to set up a convenient time to meet or discuss the project in more detail. Thank you for your time.

Interested in Learning More:

First Name Only: \_\_\_\_\_

Phone Number: \_\_\_\_\_

## You Are Invited to Participate In a Research Study on Teen Anger and Aggression

**Counselor and Investigator** Raychelle Cassada Lohmann are coming to (Insert Facility Name) to conduct her research as part of completing her doctorate degree at NC State University and she would like to invite you to be a part of her study! Read on to learn more about this opportunity.

### **The Anger Regulation and Aggression Reduction (ARAR) Program**

**Facilitated by Mrs. Raychelle Lohmann, NCSU Doctoral Student**

*Mrs. Lohmann is a Licensed Professional Counselor Supervisor, Speaker and International Author with over 20 years of experience in working with angry teens. She is inviting you to participate in her no cost program as part of her doctoral research for NCSU.*

Hello! I am Raychelle Lohmann and I am excited to bring this opportunity to your program. My research focuses on adolescent male students ages 13-17 who would like to learn how to get a grip on their anger. Anger is a perfectly normal emotion, but sometimes when it is not managed it can lead to big problems in your home, at your school and in your personal life. My program will help you notice what makes you angry, learn how to handle frustrating situations without getting angry, effectively communicate your feelings, all while providing you with the skills you need to constructively handle your anger. The program will include two-weeks of assessments, taking only 10 minutes of your time each week to complete, followed by six personalized sessions that are about an hour long, which are driven by you to focus on your goals as they pertain to anger and aggression. During the final two-weeks, you will be taking the assessments, like the first two weeks, which will only take about 10 minutes of your time each week to complete. During the intervention, you will be an active participant in the ARAR process. You will be driving force behind how we structure the sessions and the skills that we work on. This will be a program completely tailored to fit your individual needs. I will be as flexible as possible in meeting you at the program at a time that it is convenient for you. By participating you will receive a \$30.00 gift card, plus all the supplies and materials needed for the program. All you have to do is show up, participate, and take advantage of this opportunity!

**Research Title:** The Effects of a Customized School-based Anger Regulation and Aggression Reduction Intervention

**Principal Investigator:** Raychelle Cassada Lohmann **Faculty Sponsor (if applicable):** Dr. Stanley Baker

## **Oral Recruitment Script for Counselor/Investigator Meeting with Parent and Participant**

### **Talking Points**

#### **Introduction:**

Hello and welcome, my name is Raychelle Cassada Lohmann and I am a doctoral candidate at North Carolina State University.

First, I would like to thank you for your willingness to learn more about my research. You and your child are being asked to take part in a study pertaining to adolescent anger and aggression. You were invited to participate because the staff thought your child would benefit from an anger management program. The staff did not share any information with me regarding your circumstance. They only reached out to you to see if you were interested in participating. Again, I truly appreciate your willingness to learn more about my research on teen anger and aggression.

I would like to begin by sharing with you a little about my background and interest, information about the study itself, and then end by answering any questions that you may have. Feel free to stop me at any time if you have a question or need clarification on something.

#### **About Me**

- My educational background
- My interest in anger and aggression
- My counseling experience with anger and aggression
- My work outside of counseling with anger and aggression
- Questions?

#### **About the Study**

- The purpose of the study - is to help youth learn how to manage their anger and aggressive behaviors in healthier ways.
- The layout of the study – review the timeline and bullet points on the consent forms for first two-weeks, six-weeks of sessions (intervention), and last two-weeks
- Share information about assessments Multidimensional Anger School Anger Inventory, and the Reactive Proactive Questionnaire and how they will be taken electronically via a provided link.

- Explain anonymity and arbitrary number assignment that will only be known the participant and the investigator.
- Explain how the ATT will be administered via a staff member at the program following the intervention. Tell them they will have not put any identifying information on the form except for their assigned number.
- Show a copy of the Anger Workbook for Teens so they can see some of the information that will be covered. Explain that the workbook only provides a framework as the intervention will be personalized to the individual.
- Review the time commitment of the study – for the first two weeks it will be 20 minutes in total.
- Skills addressed will be designed specifically for the participant based on identified needs.
- Answer questions.

### **Voluntary Consent**

- Participation in this study is completely voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. You will not be required to answer any questions you believe are risky and/or makes you feel uncomfortable. You do not have to participate in any session and are free to withdraw from the study at any point in time without penalty.
- Questions?

### **Risks**

- Your risks include not improving the ability to effectively deal with anger, initial hypersensitivity to anger, as the emotion is being brought to the forefront. Note: Over a short amount of time, the hypersensitivity should subside. There may also be other possible side effects of participating in this anger management program that is not yet known.
- As a Licensed Professional Counselor, these are the measures I am taking to mitigate those risks I am only focusing on social emotional skills development and not using clinical mental health protocol. Social and emotional development skills are the types of skills taught in schools during classroom guidance, groups or in individual sessions with a professional school counselor. As a result, the likelihood of the risk occurring is low and the magnitude of harm that could come to participants is minimal.
- There is a risk the intervention will not work, and behavior will not improve. If this is the case, then I will meet with you and your child to provide resources for additional assistance. I will take all the necessary precautions to make sure that your child feels comfortable

during the intervention. As this intervention will be personalized, your child and I will work closely to meet his desired goals and make sure that they are attainable.

- In the event more clinical-based counseling is warranted, I will meet with you and your child to share outside counseling resources and if you would like, help with the referral process.
- Questions?

### **Benefits**

- Potential direct benefits to be gained by your child's participation is that he will gain a better understanding of how his anger and aggression affects his performance. It is anticipated that your child will gain a better understanding of how to control anger and use effective strategies to regulate emotions that may result in fewer behavioral problems that occur at school, with friends, and at home. Your child may also learn skills to improve communication with parents, peers, and adults. The social emotional skills that will be taught are skills that your child can choose to take with him and use in various situations throughout the course of his life.
- Questions?

### **Confidentiality**

- I will adhere to the ethical and legal guidelines of the State of NC, and the American Counseling Association. As a mandated reporter, I am legally required to report any suspected abuse or neglect to any minor. Additionally, if I am concerned that a child is hurting himself or someone, I am required to report this information to you, and if need be proper authorities. As a visitor to the agency, I am also required to follow the afterschool program's protocol and share the information with the program director.
- The information in the study including assessments and notes will be kept confidential to the full extent allowed by law. Data will be stored securely in a locked site. No reference will be made in oral or written reports that could link your child to the study. Your child's name will not be shared or put on any final written reports.
- Questions?

### **Compensation**

- Your child will receive a \$30 gift card for participating throughout the entire study. If your child misses their weekly session, there will be a makeup session provided within 7 days of the missed session. Due to the time frame of the research study, if the make-up session does not occur within one week, then your child is no longer eligible to participate. If your child does not complete the entire study the gift card will be pro-rated based on the time that he participated in the study.

- Questions?

### **Your Rights**

- If you have questions at any time about the study or the procedures, you may contact the counselor/investigator, Raychelle Cassada Lohmann.
- If you feel you or your child have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the NC State IRB office.
- Questions?

*If you are interested in participating I have the consent forms available. If you would like to think it over and get back with me, here is my card. I will need to know by (Insert date) if you are interested. Thank you for your time and I hope to work with your child soon.*

## Appendix G: Consent and Assent Forms

**PARENT/GUARDIAN INFORMED CONSENT FORM**

**Research Title:** The Effects of a Customized School-based Anger Regulation and Aggression Reduction Intervention

**Principal Investigator:** Raychelle Cassada Lohmann **Faculty Sponsor:** Dr. Stanley Baker

**What are some general things I should know about the current research study?**

Your child is being invited to take part in a research study on adolescent anger and aggression. Your child was selected to participate because the staff at your child's afterschool program thought he could benefit from an anger management program. The staff did not share any information with me regarding your child's circumstance but delivered the flyer and information to you in the event you were interested in your child participating. I appreciate your willingness to learn more about the study.

**Who is the counselor/investigator?**

I am a practicing counselor in the field and the primary investigator for the present study. This study is a part of my requirement toward completing my doctoral degree at North Carolina State University. I hold a Master of Science in Counselor Education from NC State and have been practicing in the field for over 20 years. I am also National Board Certified Counselor, a Licensed Professional Counselor in the state of SC, a Licensed Professional Counselor Supervisor in the state of NC and a Licensed school counselor in NC. In addition to my experience, I am an author who has written several books for adolescents as well as for the professionals working with them. Many of my materials have been used nationally and internationally. For this project, I have joined forces with your child's afterschool program and designed a program entitled the Anger Regulation and Aggression Reduction (ARAR) Intervention.

**What is the purpose of the present study?**

The purpose of the present study is to help adolescents learn how to better regulate anger and reduce aggressive behaviors through a personalized counseling intervention designed specifically for your child's individual's needs. This intervention may help your child learn to better control his feelings of anger as well as learn skills to help him build emotional and social skills that may increase his academic performance and his overall well-being.

**What will happen if my child volunteers to take part in the study?**

If you agree to let your child participate in the present study, he will be asked to engage in a six-session intervention program at the program facility with the investigator during a scheduled time based on your child's availability. The appointment time will not interfere with any of the activities that the program was going on at the time.

The investigator will serve as the counselor in the intervention program and will provide the customized ARAR interventions to the student during designated appointment times that will be coordinated with the program director. The time frame and commitment of the study are as follow:

- If your child participates he will take an assessment twice a week for two weeks that measures his levels of anger and aggression. He will be given a link to take the assessment on an electronic device. If he does not have a device there will be one available at the afterschool facility. Each assessment will take about five minutes to complete, so it will take about 10 minutes of his total time each week.
- After the two weeks, he will begin to meet with me for six sessions. Each session will last about an hour.
  - In our first meeting, we will set goals and review the results of the anger and aggression measures. Together, we will come up with a plan to address the areas that need additional attention.
  - He will continue to take the measures twice a week during the treatment period. This will help us monitor any behavioral changes.
  - During each meeting, we will work on activities designed just for him based on his needs.
  - He will be asked to do some work in the “The Anger Workbook for Teens” between meetings that will also help achieve his goals. This book is his to keep, I will not be taking anything out of the book, but we will refer to it during our time together.
  - For the final two weeks, he will go back to doing what he did before the sessions and take the measures, on his device or a center’s device, twice a week for two more weeks and then the study is over.
  - If he agrees to be in the study, I will give him a calendar noting the times he will need to take the measures and we will set up times to meet, he will also receive reminders via the *Remind* app.

### **What are the risks?**

- Your risks include your child not improving the ability to effectively deal with anger, initial hypersensitivity to anger, as the emotion is being brought to the forefront. Note: Over a short amount of time, the hypersensitivity should subside. There may also be other possible side effects of participating in this anger management program that is not yet known. As a Licensed Professional Counselor, these are the measures I am taking to mitigate those risks I am only focusing on social emotional skills development and not using clinical mental health protocol. Social and emotional development skills are the types of skills taught in schools during classroom guidance, groups or in individual sessions with a professional school counselor. As a result, the likelihood of the risk occurring is low and the magnitude of harm that could come to your child is minimal.
- There is a risk the intervention will not work, and the behavior will not improve. If this is the case, then I will meet with you and your child to provide resources for additional assistance. I will take all the necessary precautions to make sure that your child feels comfortable during the intervention. As this intervention will be personalized, your child



and I will work closely to meet his desired goals and make sure that they are attainable. In the event more clinical-based counseling is warranted, I will meet with you and your child to share outside counseling resources and if you would like, help with the referral process. I am aware of many resources and programs in the area to assist you and your child.

### **What are the benefits?**

- Potential direct benefits to be gained by your child's participation is that he will gain a better understanding of how his anger and aggression affects his performance. It is anticipated that your child will gain a better understanding of how to control anger and use effective strategies to regulate emotions that may result in fewer behavioral problems that occur at school, with friends, and at home. Your child may also learn skills to improve communication with you, peers and other adults. The social emotional skills that will be taught are skills that your child can choose to take with him and use in various situations throughout the course of his life.

### **What about confidentiality?**

- I will adhere to the ethical and legal guidelines of the State of NC, and the American Counseling Association. As a mandated reporter, I am legally required to report any suspected abuse or neglect to any minor. Additionally, if I am concerned that a child is hurting himself or someone, I am required to report this information to you, and if need be proper authorities. As a visitor to the agency, I am also required to follow the afterschool program's protocol and share the information with the program director.
- The information in the study including assessments and notes will be kept confidential to the full extent allowed by law. Data will be securely stored in a locked site. No reference will be made in oral or written reports that could link your child to the study. Your child's name will not be shared or put on any final written reports.

### **Will there be compensation for participating?**

Your child will receive a \$30 gift card for participating throughout the entire study. If your child misses their weekly session, there will be a makeup session provided within 7 days of the missed session. Due to the time frame of the research study, if the make-up session does not occur within one week, then your child is no longer eligible to participate. If your child does not complete the entire study the gift card will be pro-rated based on the time that he participated in the study.

### **Will my consent be voluntary?**

Your child's participation in this study is completely voluntary. He has the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. Your child will not be required to answer any questions that he believes are risky and/or makes him feel

uncomfortable. Any participant who appears upset will be reminded that he has the right to not participate and is free to withdraw from the study at any point in time without penalty. You also have the right to withdraw your child from the study at any point in time.

**What if I have questions about the present study?**

If you have questions at any time about the study or the procedures, you may contact the counselor/investigator, Raychelle Cassada Lohmann.

**What if I have questions about my rights as a research participant?**

If you feel you or your child have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the NC State IRB office.

**Guardian Consent to Allow Your Child to Participate**

“I have read and understood the above information. I have received a copy of this form. I agree to let my child participate in this study with the understanding that I may choose to stop my child from participating at any time without penalty or loss of benefits to which I am, or my child is otherwise entitled.”

**Guardian’s signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**Investigator's signature** \_\_\_\_\_ **Date** \_\_\_\_\_

*A copy of this form will be provided to you to take with you.*

## **PARTICIPANT ASSENT FORM**

**Research Title:** The Effects of a Customized School-based Anger Regulation and Aggression Reduction Intervention

**Principal Investigator:** Raychelle Cassada Lohmann    **Faculty Sponsor:** Dr. Stanley Baker

**I am inviting you to be in a research study.** This study is to learn how to help teens manage anger and aggression.

**Here is how I am setting up the study:**

- During the first two weeks, you will just report how angry and aggressive you are. You will take some measures twice a week that look at your anger and aggression. These measures take about five minutes to complete. You will be given a link to take these assessments on your own device or one at the center.
- After the two weeks, you will meet with me for six sessions that are about an hour long. You will also continue to take the measures twice a week. This will help us look at changes in your behaviors.
  - In our first meeting, we will work together to set goals. We will also come up with a plan to help you reach your goals.
  - During each meeting, we will work on activities designed just for you based on your anger needs.
  - You will be asked to do some work in the workbook that I give you. This book is yours to keep.
  - The last two weeks you only take the measures twice a week and then the study is over.

**Voluntary Consent**

Being in this study is completely voluntary. You have the right to stop being in the study at any time. You will not be asked to answer any questions that make you feel uncomfortable.

**Privacy**

It is important that you know, the things you say, the answers you give, the measures you take, and the activities will be kept private, and your name will not be used on any papers. You will be given an ID number to use on the measures that only you and I know.

Also, what you share with me during our time together is confidential. While I will make every effort to keep what you share private, there are two exceptions: (1) If I become aware of abuse, or neglect, to you or any other child, I must report it to child protective services because it is the law. (2) If I am concerned that you may hurt yourself or someone else, I am required to report it to the program director, to get help for you and for anyone else that might get hurt.

If you agree to be in the study, I will be the person working with you. If you have any questions, feel free to ask me. If you do not wish to be in the study, you can stop at any time.

**Payment**

By participating in the study, you will receive a \$30 gift card. If you miss a session, we will do a makeup session within 7 days of the missed one. If the make-up session is missed then you will not be able to complete the study and will not be able to participate. If you leave the study at any time the \$30 gift card will be pro-rated.

**Agreement**

I have been told about the study, and what I will be asked to do. I also know that I do not have to be in the study and can stop at any time. If I have questions, I can ask Raychelle Cassada Lohmann.

PLEASE SIGN BELOW IF YOU AGREE TO BE IN THIS STUDY:

Student's name: \_\_\_\_\_ Date: \_\_\_\_\_

Investigator's name: \_\_\_\_\_ Date: \_\_\_\_\_

*You will also get a copy of this form.*

## PERSONNEL INFORMED CONSENT FORM

**Research Title:** The Effects of a Customized School-based Anger Regulation and Aggression Reduction Intervention

**Principal Investigator:** Raychelle Cassada Lohmann **Faculty Sponsor:** Dr. Stanley Baker

### **What are some general things I should know about the current research study?**

This study will examine the effects of an intervention aimed at helping participants effectively manage and express anger. Participation should take approximately 2½ to 3 hours of your time. Please understand your **participation is entirely on a voluntary basis** and you have the right to withdraw your consent or **discontinue participation at any time without penalty**. A copy of this consent form will be provided to you. If at any time you have questions please, do not hesitate to contact the counselor/investigator named above.

### **What is the purpose of the present study?**

The purpose is to help male adolescents learn how to better regulate anger and reduce aggressive behaviors through a set of customized individual counseling interventions. These counseling interventions are designed to fit the individual needs of each adolescent and will help them regulate anger and reduce aggression. The goal is that participants will experience fewer behavioral disruptions and optimize opportunities for academic success.

### **What will happen if I take part in the present study?**

You will be an instrumental player in identifying the youth who need this program the most. This information will be based on your personal knowledge of working closely with the school, parents, and students. You will distribute a flyer that will be provided to you about the program and verbally shares a written script that will also be provided with the parent/guardian and participant. If both parties are interested in learning more about the intervention you will have them sign-up for an appointment time with you and the counselor/investigator or just the counselor/investigator, depending on the parent/guardian's and participant's desires. You will not need to share any personal information with me regarding the participants.

At the beginning of the study, you will complete a brief paper questionnaire that will take about five minutes per participant of your time to complete. This questionnaire will have a number on it and the counselor/investigator will verbally tell you the name of the participant that is attached to the number.

At the conclusion of the study, you will repeat this process with a post-intervention questionnaire about your observations of the student's behaviors. There will be a total of eight questionnaires to complete. Your responses will be kept strictly confidential and used as a factor in examining the intervention's effect. Participation in the entire study should take approximately 2½ to 3 hours of your time.

**What are the risks?**

Risks include students being upset with you for referring them to the program. To mitigate this risk, I will stress to both parents and students that participation is completely voluntary. Another risk includes students being mad at you for participating in the meeting with me and a parent. To mitigate this risk, I will gain verbal permission from both students and parents prior to having you in the session. There is a risk that students will become upset that you are completing the pre-post questionnaire, and me knowing your responses. To mitigate this risk, I will assure students that the data are kept strictly confidential and the answers are only intended to assess the effects of the intervention. I will also show them the form you will fill out, so they can see the 5 Likert-type questions. That way they know up front what is being asked and can see that you will not be writing anything pertaining to them. Ultimately, there are social risks in altering the relationships that you have with these students, including embarrassment, and loss of respect. I will mitigate these risks by reminding students all information is kept confidential.

**What are the benefits?**

The benefit to the program and staff: Include members with less behavioral disruptions, an improvement in academic performance, and better social/emotional skills as evidenced by making better choices and being able to articulate thoughts and feelings more appropriately. All of these potential benefits align with your program's overall mission and objective. Also, a benefit of the intervention not working would include that the findings may help practitioners and researchers better understand what does not work with angry and aggressive teens.

**What about confidentiality?**

The information obtained in the present study will be kept confidential to the full extent allowed by law. Data will be securely stored in a locked site. No reference will be made in oral or written reports that could link you or your student to the study. Your name will not be shared or put on any final written reports.

**Will I be compensated?**

You will receive a \$30 gift card for participating in the pre- post-questionnaire, helping identify participants and participating in the initial meeting. By no means does this small monetary gift card make up for the time that you will devote to helping with the study. It is only a small token of gratitude for your assistance to the counselor/investigator and to the field of counseling.

**What if I have questions about the present study?**

If you have questions at any time about the study or the procedures, you may contact the counselor/investigator, Raychelle Cassada Lohmann.

**What if I have questions about my rights as a research participant?**

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, the NC State IRB Office.

**Consent to Participate**

“I have read and understood the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose to stop at any time without penalty or loss of benefits to which I am, otherwise entitled.”

**Evaluator's signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**Investigator's signature** \_\_\_\_\_ **Date** \_\_\_\_\_

*A copy of this form will be provided to you to take with you.*