

Anger & Aggression Management In Young Adolescents: An Experimental Validation of the SCARE Program

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Abstract

This study examined the internal validity of the SCARE program; an eclectic anger and aggression management program that was developed in collaboration with high school students. Young adolescents at-risk for anger and aggression related problems were randomly assigned into treatment conditions (experimental versus control). Pre and post measures were collected across multiple modalities, and were assessed by way of a multivariate experimental design. Individual's exposed to the SCARE program reflected significantly lower levels of anger and aggression, and a slightly (although not significantly) higher level of anger control. 1 year follow-up data showed that students exposed to SCARE continued to reflect significantly lower scores on a measure of aggressive and violent attitudes. These results support the efficacy of the SCARE program, suggesting it is a useful prevention and intervention tool for addressing violence and aggression in young people.



Over the last several decades violence has steadily *increased* among our nation's youth despite recent reports suggesting the opposite. While it is true that the overall rate of violent crime in the U.S. has declined in recent years (United States Department of Justice [USDJO], 2001), and crime in U.S. schools has consistently dropped over the last 7 years (United States Department of Education [USDOE], 2000); the trend regarding juvenile violence *over the past several decades* tells a dramatically different story. Despite the highly publicized recent reductions, the arrest rate for violent

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juvenile crime between 1967 and 1997 actually increased by 143 percent (USDOJ, 1998). Additionally, from 1960 through 1991 the U.S. population increased by only 40 percent, yet during this time period violent crime increased by 500 percent; murders by 170 percent, and aggravated assaults by 600 percent (Grossman and DeGaetano, 1999). Much like analyzing the stock market, one must step back and analyze the global trends rather than the temporal fluctuations if one is to gain a true understanding of a phenomena under consideration.

In addition to statistical figures, today one has to look no further than a local edition of a community newspaper to realize the extent to which violence has infiltrated our children's lives, and consequently the public and private schools they attend. The mass student killings at Columbine High School in Littleton, Colorado have been reported as the deadliest school massacre in our nation's history. Additionally, in 1998 alone, five separate and highly publicized violent incidents occurred on school campuses in Jonesboro, Arkansas; Edinboro, Pennsylvania; Springfield, Oregon; Pearl, Mississippi; and Paducah, Kentucky. A report from the National School Safety Center (2001) provides even more grim evidence, reporting that 321 school-associated violent deaths occurred in the United States from 1992 through 2001. Thus, while a certain degree of comfort can be found in the fact that crime and violence have indeed decreased in recent years (USDOE, 2000; USDOJ, 2001), considerable evidence remains suggesting that juvenile violence and aggression remain pervasive societal problems.

The SCARE Program

In response to a growing national concern regarding youth violence, a variety of strategies have been developed which attempt to stem the tide of violent and aggressive acts (Conduct Problems Prevention Research Group, 1992; Corder, Whiteside, & Haizlip, 1986; Hains & Ellmann, 1994; Tremblay, Masse, Pagani & Vitaro, 1996; Wilcox & Dowrick, 1992). Fewer programs, however, have been directed at the roots of aggressive, antisocial and violent behavior beginning in late childhood and early adolescence. One exception is the Student Created Aggression Replacement Education (SCARE) program (Herrmann & McWhirter, 1994, 2001). The SCARE program was developed to focus exclusively on violence and aggression beginning in late childhood and early adolescence because a growing body of literature has consistently indicated that these years can be critical to a young person's social development. For example, boys who start criminal careers in early adolescence or late childhood have been found to be at greatest risk for becoming chronic offenders (Farrington, 1983; Loeber, 1982), and boys first arrested between 10 and 12 years of age average twice as many convictions in later life as those who are first arrested at more advanced ages (Farrington, Gallagher, Morley, St. Ledger, & West,

1986). Additionally, almost half of all violent crimes are committed by young males, who make up only 8% of the population (Steiner and Stone, 1999). Because early adolescence is potentially one of the best times for prevention and intervention programs targeting at-risk youth, the *SCARE* program was constructed specifically with this age group in mind. Additionally, because a review of the literature revealed a lack of aggression replacement and anger management packages available to teachers, counselors, psychologists and other youth workers for this age group (McWhirter, Herrmann, Jefferys, & Quinn, 1997), the *SCARE* program was constructed for broad scale implementation by such individuals.

Of importance, a critical distinction that sets the *SCARE* program apart from other prevention and intervention efforts is that the *SCARE* program was developed in conjunction with advice and suggestions offered by students themselves whose lives have increasingly become affected by violence. In short, most people would agree that students represent the central focus of the educational system in the United States, and that students themselves can be an important source for helping schools meet their various objectives (McWhirter, McWhirter, McWhirter & McWhirter, 1998). Unlike educators and administrators, however, students are different kinds of experts within school settings. They observe different behaviors and realities than their teachers and other adults because they themselves are involved in formal and informal interactions as witnesses, initiators or targets. Asking students how to reduce violence in their schools can therefore be an important diagnostic tool in finding possible solutions to the problem of school violence. Thus, in the spring of 1994, Phoenix area high school students were specifically asked to focus on the question "How can we decrease violence in our schools?" as part of a city-wide essay contest. Prudential Securities thereafter provided a grant to the City of Phoenix, and subsequently to Arizona State University, to develop and disseminate a violence reduction program that was based in part on these student essays. A university based research team was thus constructed in order to content analyze student essays, and to identify any causes or potential solutions to violence offered by the students. Content analysis specifically sought to identify not only common themes that frequently reemerged across student essays, but also to identify novel ideas or insights that appeared in isolation. While special attention was paid to the 14 prize winning essays (which were independently judged and awarded by school district officials), all submitted essays were reviewed and analyzed by the university research team. Although some of the solutions offered by students were not applicable for a variety of reasons, many were concrete and useful, and all were thought provoking. This unique "needs assessment" was thus utilized as the basis from which to construct an original prevention and intervention program which subsequently became known as the *SCARE* program.

While the SCARE program was developed in conjunction with the advice and suggestions offered by students, it was not developed solely from student input alone. Rather, the SCARE program was developed as a blended approach that combines student input with what an empirical literature review revealed are "best practices" for reducing violence and aggression in children (McWhirter et al., 1997). Specifically, where content analysis of student essays revealed a specific cause or solution to violence that was judged to have merit, the research team turned to the "best practices" literature to determine if a particular therapeutic technique or method existed for addressing the identified area. In those cases where no therapeutic techniques or method existed for addressing an identified area, the research team sought to develop one. Readers interested in learning more details about the early development of the SCARE program are directed to McWhirter et al. (1997), and Herrmann and McWhirter (2001).

Theoretical Position

Attribution theorists propose that negative actions perceived as intentional often elicit anger, and anger in turn functions as a motivator of hostile behavior (Graham, Hudley, & Williams, 1992). Consistent with this notion, the SCARE program adopts the perspective that the reattribution of perceived offenses and the control and management of resulting anger are of prime importance in preventing violent and aggressive acts from occurring (Lore & Schultz, 1993). In recent years empirical evidence has linked high levels of anger to a number of negative social consequences, including an increased propensity to cause physical damage to oneself and others, increased psychological problems, and school related problems (Deffenbacher, Lynch, Oetting, & Kemper, 1996; Leonard & Blane, 1992; Pan, Neidig, & O'leary, 1994). Because the literature has also indicated anger can be effectively reduced through therapeutic intervention (Achmon, Granek, Golomb, & Hart, 1989; Deffenbacher, McNamara, Stark, & Sabadell, 1990; Moon & Eisler, 1983; Novoco, 1975; Schlichter & Horan, 1981), the SCARE program was constructed as a meta-theoretical treatment package focusing on anger management and coping skills for adolescents and young adults. Primary objectives embraced by the SCARE program include (a) teaching young people about emotions, including aggression and anger, (b) helping young people recognize alternatives to violent behavior and aggressive responses, and (c) encouraging young people to make good decisions in response to provocative situations. The program involves a total of 15 different sessions which are clustered into 3 distinct yet related sections: (a) *Recognizing anger and violence in the community*, (b) *Managing and reducing self-expressions of anger*, and (c) *Defusing anger and violence in others*.

In *Recognizing anger and violence in the community*, primary objectives

include (a) providing a clear definition of anger and violence, and (b) introducing the topic of anger and violence in such a way that promotes intrigue and interest for acquiring anger management and coping skills. Pedagogical observation suggests that learning is facilitated among youth who have cultivated an interest for a particular subject, and who feel that the material presented to them is relevant to their lives. By combining national statistics with descriptive images obtained from popular media resources, this section aims to stimulate motivation for learning anger reduction skills, and cultivates an awareness that such skills are vitally important to *all* adolescents.

The second section, *Managing and reducing anger in the self*, was developed to inform at-risk youth about effective prosocial strategies for managing their own aggressive impulses and feelings of anger. This section is based on Novaco's (1975, 1979) adaptation of Michenbaum's (1972) stress inoculation model, which refers to the therapeutic process of learning to manage and respond to stressful life events *before* a significant stressful event is encountered, and typically consists of three separate phases: (a) education and cognitive preparation, (b) skill acquisition, and (c) application training. Education and cognitive preparation provides youths with information about the cognitive, physiological, and behavioral interactions of anger arousal. They learn about internal triggers that can provoke anger, and steps they can take to effectively manage their expression of anger. Skill acquisition consists of training adolescents in cognitive-behavioral coping skills to effectively manage situations involving anger and aggression. Application training consists of practicing newly acquired skills within the context of experiential group sessions or role plays until such skills are mastered. In studies assessing the efficacy of this model, Novaco (1975, 1979) reports evidence in support of stress inoculation training for reducing anger, while others have reported the effectiveness of this model with adolescent populations (Hains & Ellmann, 1994; Schlichter and Horan, 1981; Wilcox & Dowrick, 1992).

Finally, the third section, *Defusing anger and violence in others* draws upon an eclectic model involving skills and techniques for (a) preventing situations involving anger and violence from developing, and (b) promoting peaceful resolutions to hostile situations which have developed. This section was specifically developed to give students who are not routinely at-risk for violence and aggression a set of tools that will enable them to manage and defuse the hostile intentions of others. In reviewing student essays regarding violence prevention, our research team quickly discovered that many students did not feel that they themselves had a problem with anger or violence, but rather these students still felt at-risk because of the violent temperament of one of their classmates. Thus, in order to help these students defuse potentially hostile situations in as many different ways as possible, this section is not grounded in any one theoretical orien-

tation, but rather is eclectic in nature and combines techniques from different schools of thought. In a review of the treatment literature, Greenwood (1994) notes that multi-modal approaches that combine several treatment modalities (e.g., cognitive skills, relaxation skills, social skills training) are usually more efficacious than unimodal approaches. Corder, Whitehead, and Haizlip (1986) additionally report that multi-modal approaches are of special value when treating behaviorally disordered and "acting-out" youth. As such, several sessions have been developed in the *Defusing anger and violence in others* section that draw upon diverse yet complementary theoretical approaches, including sessions on verbal and paraverbal techniques, body language training (proxemics and kinesics), identifying creative alternatives to violence, diversity appreciation training, and no-violence contracting. (See Table 1 for a brief description of each of the 15 SCARE sessions).

Table 1
The SCARE Program

| | |
|--|---|
| Recognizing Anger and Violence in the Community | |
| Ongoing | Anger Journal |
| Lesson # 1: | Recognizing Anger and Violence |
| Lesson # 2: | Family/Friend Tree |
| Managing and Reducing Anger in the Self | |
| Lesson # 3: | Internal Responses to Anger |
| Lesson # 4: | Reducing Arousal Through Positive Self-Statements |
| Lesson # 5: | Systematic Deep Breathing |
| Lesson # 6: | Progressive Relaxation |
| Lesson # 7: | Exercise |
| Defusing Anger and Violence in Others | |
| Lesson # 8: | Creative Alternatives to Violence |
| Lesson # 9: | Paraverbal Techniques |
| Lesson # 10: | "I" Instead of "You" |
| Lesson # 11: | Reflections |
| Lesson # 12: | Proxemics (Personal Space) |
| Lesson # 13: | Kinesics (Body Language) |
| Lesson # 14: | Appreciating Diversity (The Hand Clasp Exercise) |
| Lesson # 15: | No Violence Contracting |

Purpose of the Study

While reports gathered from teachers, administrators, counselors, and psychologists who have used the SCARE program have been uniformly positive and enthusiastic, controlled and scientific outcome research is necessary before the effectiveness of any program can be established and validated. As such, various research studies and initiatives have been designed and employed to empirically scrutinize the SCARE program, to determine its ability to reduce anger and aggression in young people, and to determine if the program helps children and adolescents make healthy choices in response to hostile and provocative situations.

While space limitations prevent us from summarizing the body of relevant research which has examined the SCARE program's effectiveness, the present study highlights one of the most comprehensive investigations to date which has explored the relative merits of the SCARE program in an applied educational setting involving at-risk students. The general empirical question addressed in this investigation was:

"In what ways do adolescents who have completed the SCARE program differ from other adolescents in terms of anger and aggression levels?"

Method

Participants

A sample of seventh, eighth, and ninth grade students who were identified as academically and behaviorally at-risk participated in this study during the 1999-2000 academic year. Participants were recruited from two "alternative" middle schools in central Arizona. Both schools were comprised exclusively of students with various histories of academic, behavioral and disciplinary problems, and both school sites were considered "last chance" options for students who were not succeeding in their traditional school setting. By virtue of their enrollment in these non-traditional schools, all participants could be identified as "at-risk" according to Sugai, Sprague, Horner and Walker's (2000) continuum of violent and destructive behaviors (see Figure 1). As noted by these authors, at-risk students on their continuum are thought to represent approximately 5 to 15% of all school-aged students, are known to be susceptible to behavioral and disciplinary problems, but do not yet meet the criteria for chronic or intensive problem behavior. At-risk students are also thought to be in need of secondary prevention efforts that attempt to prevent the development and escalation of problem behavior, while those with more intensive and chronic difficulties are thought to require more specialized and individu-

alized interventions (Sugai et al., 2000). Because the SCARE program was specifically developed with the at-risk adolescent in mind, students from these two school sites were specifically recruited to represent an at-risk sample for the present study. Accordingly, 207 students (149 males and 58 females) were randomly selected from these two schools for participation in this study. There were 58 seventh graders, 106 eighth graders, and 43 ninth graders. While specific information regarding the ethnic composition of the sample was not available through school district resources, the sample was roughly comprised of 50% Hispanic, 40% Anglo, 5% African-American, and 5% other ethnic background students. Special education students and monolingual Spanish speaking students were not included in this investigation due to limited program resources.

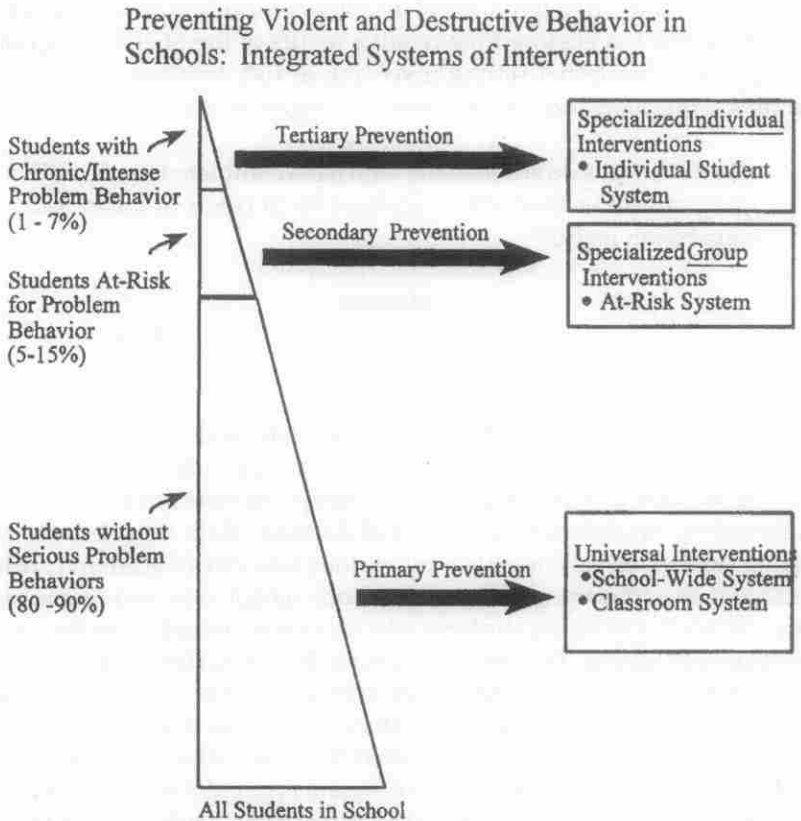


Figure 1. From "Preventing school violence: The use of office discipline referrals to assess and monitor school wide discipline interventions", by G. Sugai, J. R. Sprague, R. H. Horner, and H. M. Walker, 2000, *Journal of Emotional and Behavioral Disorders*, 8 (2), p. 94-101. Copyright (2000) by PRO-ED, Inc. Reprinted with permission.

Trainers

Twenty-four graduate students from the Counseling (masters) and Counseling Psychology (doctoral) programs at a local university participated as trainers. Twelve trainers were assigned to teach the SCARE curriculum (experimental group), while 12 were assigned to teach the *Enter Here* vocational education curriculum (control group). To facilitate program administration, clusters of 2 to 3 trainers were assigned to work with each group of 10 to 25 students. Attempts were made to balance both male and female trainers across conditions, but due to scheduling constraints the experimental condition was disproportionately represented by female trainers.

Measures

The measures used in this study are clustered into two distinct yet theoretically related categories: anger and aggression. To thoroughly evaluate each of these constructs, multiple modalities of assessment were utilized where possible, including measures of self-report, global ratings by others, and behavioral assessment techniques. See Table 2 for a summary of the various anger and aggression measures used in this study, as well as the type of modality assessed by each.

Table 2
Dependent Measures

| ANGER MEASURES | | | | |
|---------------------|-------------------|-------------------|-----------------------------|--------------------------|
| | <i>Name</i> | <i># of items</i> | <i>Source</i> | <i>Modality Assessed</i> |
| 1) | State-Anger | 10 | STAXI | Self-Report |
| 2) | Trait-Anger | 20 | STAXI | Self-Report |
| 3) | Anger-Control | 8 | STAXI | Self-Report |
| AGGRESSION MEASURES | | | | |
| | <i>Name</i> | <i># of items</i> | <i>Source</i> | <i>Modality Assessed</i> |
| 1) | Peer Relations-C | 5 | MPRI | Self-Report |
| 2) | Peer Relations-P | 5 | MPRI | Parent-Report |
| 3) | AGVQ | 8 | AGVQ | Self-Report |
| 4) | Detention Records | Sum total | Behavioral (Teacher Report) | |

Note. STAXI = State-Trait Anger Expression Inventory (Spielberger, 1991); MPRI = Missouri Peer Relations Inventory (Borduin, Blaske, Treloar, & Mann, 1989); AGVQ = Attitude Towards Guns & Violence (Shapiro, Dorman, Burkey, Welker, & Clough, 1997).

*State-Trait Anger Expression**Inventory (STAXI)*

The *STAXI* (Speilberger, 1996a) is a self-report measure assessing the experience and expression of anger which is conceptualized as having two major components; State-Anger and Trait-Anger. State-Anger refers to subjective feelings of anger that can vary in intensity over time. Trait-Anger, on the other hand, is defined as dispositional anger to a wide array of annoying or frustrating situations. The overall *STAXI* consists of 44 items which form six specific scales. For the purpose of this study, three scales were deemed pertinent: State-Anger (the intensity of anger at a given time - 10 items), Trait-Anger (how chronically or dispositionally angry the individual is - 20 items), and Anger-Control (the frequency to which an individual attempts to control the expression of anger - 8 items). In responding to individual test items, individuals rate themselves on a four-point continuum that assesses either the intensity of their angry feelings or the frequency that anger is experienced, expressed, or controlled. The *STAXI* is designed to measure anger experience and expressions for individuals ranging from adolescent to adult, with a minimum fifth-grade reading ability required to complete the instrument. Raw scores for the various *STAXI* subscales are converted to standard scores, with higher scores generally reflecting more intense anger expressions or experiences (with the exception of the Anger-Control scale, with higher scores reflecting greater control of anger). With regard to reliability and validity, alpha coefficients have been reported for both sexes at .87 and .93 for State and Trait-Anger, respectively. Validity has been estimated by correlating the *STAXI* with the *Buss-Durke Hostility Inventory* (Buss & Durke, 1957) and the hostility and overt hostility scales of the *Minnesota Multiphasic Personality Inventory* (Hathaway & McKinley, 1942). Significant correlations ranged from .27 to .71. Significant correlations have also been reported between the Anger-Expression scale (composite index) of the *STAXI* and other anger and personality measures (Speilberger, 1996b), providing additional evidence of its validity. In a recent review of the instrument, Feindler (1995) describes the *STAXI* as a "short and easy-to-use instrument", and noted that it is a "good choice, especially for adolescents" (p. 179).

Missouri Peer Relations Inventory (MPRI)

The Aggression subscale of the *MPRI* (Borduin, Blaske, Treloar, & Mann, 1989) assesses parental, teacher, and youth perceptions of aggression in adolescent peer relationships. Form C of the *MPRI* is intended to be completed by the adolescent or child, while Form P/T is designed to be completed by either a parent or teacher. Both forms of the *MPRI* were adopted

for use in the present study, with form P/T being completed by parent(s), and form C being completed by the child. Both versions of the *MPRI* Aggressive subscale include five items that require respondents to rate adolescent social behaviors and characteristics along a 5-point Likert-type scale. Total scores can range from 5 to 25 (one item is reverse scored), with higher scores reflecting more aggressive peer relations.

The *MPRI* was validated on 212 adolescents, their mothers, and teachers; and factor analysis confirmed the theoretical dimensions of the instrument. With regard to reliability, Cronbach alphas for the Aggression subscale have been reported at .65 and .69 for mother and teacher ratings over a two week period respectively (Blaske et al., 1989). Test-retest reliability coefficients for the Aggression subscale has been reported at .76 and .72 for mother and teacher ratings respectively (Blaske et al., 1989). With regard to construct validity, the *MPRI* has found moderate support for its constructs in studies involving juvenile offenders and delinquents (Blaske et al., 1989; Lyon, Henggeler, & Hall, 1992) as well as hearing-impaired adolescents (Henggeler, Watson, & Whelan, 1990). While the *MPRI* instrument appears to hold promise as a research scale and clinical instrument, it should be noted that this scale has only a limited amount of reliability and validity data supporting its claims at the present time. As such, this instrument should only be viewed as an experimental scale in the present study.

Attitude Towards Guns & Violence Questionnaire (AGVQ)

The *AGVQ* (Shapiro, Dorman, Burkey, Welker, & Clough, 1997) is a measure of aggression and violence-related attitudes for youths aged 8 to 18, and is designed specifically to assess how young people feel about guns and violence. Principal component factor analysis performed by the authors revealed four major factors: (a) Excitement, (b) Power/Safety; (c) Comfort with Aggression, and (d) Aggressive Response to Shame (Shapiro et al., 1997). Only the "Aggressive Response to Shame" subscale was selected for use in the present study because it was judged as having the most salience for our population of students. That is, this subscale was selected because it assesses a two part dynamic of (a) sensitivity to disrespect from others, and (b) the belief that violence repairs damage to self esteem. Individuals with high scores on this subscale have been found to believe that fighting is either the best or only way to recover pride following the experience of shame (Shapiro, 2000). Similar descriptions in thinking have been found in men incarcerated for violent crimes (Katz, 1988) as well as men with a history of spouse battering (Gelles & Straus, 1988). Because such thinking represents a core belief that the *SCARE* program attempts to undo, the Aggressive Response to Shame subscale was judged as being highly pertinent for the purpose of this study.

While the total *AGVQ* consists of 61 items, the Aggressive Response to Shame Subscale includes only 8 items, with each being a statement related to some aspect of violence. The response format is a 3-point Likert-type scale with anchors of 0 for "disagree", 1 for "not sure", and 2 for "agree" (some items are reverse scored). Given that there are only 8 scale items in the Aggressive Response to Shame subscale, total possible scores range from 0 to 16.

Regarding reliability and validity, the *AGVQ* was developed on the basis of research with over 2,000 demographically diverse adolescents. Whole-part correlations calculated between each of the 61 original items and total scores on the instrument revealed correlations equal to or greater than .20 ($p < .0001$). Such was interpreted by the authors as indicating a "highly satisfactory" level of internal consistency for the instrument (Shapiro et al., 1997, p. 314).

As previously mentioned, principal components factor analysis performed on the instrument identified four main factors, together which accounted for 46% of the variance (Shapiro et al, 1997). The Aggressive Response to Shame factor alone accounted for 23% of the variance.

With regard to criterion validity, self-reported gun ownership was viewed by the authors as a useful variable by which to assess the *AGVQ*'s validity performance. That is, because gun ownership is seen as a violence related behavior that is highly associated with lethality, and also because gun ownership tends to reflect a broader tendency towards violence proneness; the propensity of owning a gun was viewed by the authors as a useful validity benchmark by which to judge the *AGVQ*. Analysis performed (Shapiro et al, 1997) revealed that there were significant relations between factor scores of the *AGVQ* and self-reported gun ownership: For Aggressive Response to Shame $t(1156) = 6.36, p < .0001$; for Comfort with Aggression, $t = 7.58, p < .0001$; for Excitement, $t = 6.86, p < .0001$; and for Power/Safety, $t = 3.77, p < .0005$. Moreover, gun owners as a whole were found to have a higher average *AGVQ* score ($M = 25.89$) compared to nonowners of guns ($M = 13.15$) (Shapiro et al., 1997). These findings were offered together by the authors as support of *AGVQ*'s criterion related validity. However, while this instrument also appears promising as a research scale and clinical instrument, it should only be viewed as an experimental scale at the present time because of limited reliability and validity information.

Behavioral Measure of Aggression

Disciplinary records maintained by the school sites where this study was conducted constituted this study's behavioral measure of aggression. Such detention / referral records reflected the adolescent's name, specific reason for referral (e.g., fighting, threats, noncompliance, etc), date of oc-

currence, sanctions imposed, and other specific information. Such records were thought to provide a good source of unobtrusive behavioral measurement that is not subject to reactivity on the part of either the adolescent or referring agent (i.e., teachers or staff). As such, individual disciplinary records were analyzed and summed for each adolescent both pre and post-treatment for 40 school-days. Only records of aggressive behavior were included in this summary; disciplinary records for non-aggressive acts (e.g., tardies, uniform violations, etc.) were not included in summed totals. Higher frequency totals were viewed as reflecting greater levels of aggression.

Procedure

Design

This study employed a pre-post multivariate experimental design with students being randomly assigned (at the school level) into treatment conditions. Treatment (SCARE curriculum versus the *Enter Here* curriculum) constituted manipulation of the independent variable. Three distinct yet conceptually related measures constituted this study's dependent measures of anger (STAXI State-Anger, STAXI Trait-Anger, and STAXI Anger-Control). Four additionally distinct yet conceptually related measures constituted this study's dependent measures of aggression (MPRI-C, MPRI-P, AGVQ, and School Detention / Referral Records). Long-term follow-up assessment was also conducted at one-year following treatment to determine if treatment effects were maintained over time.

Control Condition. The *Enter Here* (1996) curriculum, a sixteen session video based vocational education program (including instructor led group discussions) was selected as this study's nonspecific treatment control condition. Specifically, each *Enter Here* video shown included a host of age appropriate material regarding vocational development within a particular occupation. Each selected video was previously screened to have no therapeutic relevance regarding anger management or aggression control, and was additionally judged to be void of emotionally stimulating content. Each video lasted approximately 15 to 20 minutes, followed by a 30-40 minute structured group discussion. The total length of each video / discussion session did not exceed 60 minutes – the maximum time allotted to complete one session of the SCARE program.

Treatment Integrity

To ensure the integrity of both the experimental and control treatments and to prevent a "loose protocol effect" (Barber, 1976), several steps were taken. First, training sessions were utilized to ensure that all trainers in

both conditions were equally proficient in administration procedure and ability. Training consisted of brief overviews for each of the *SCARE* or *Enter Here* sessions, mock session administrations, and treatment instruction. Second, written training protocols were furnished to both experimental and control treatment facilitators. Third, independent observers knowledgeable of the experimental and control treatment procedures conducted random spot checks during actual program implementation on approximately 33% of the total sessions to ensure uniformity of procedures and adherence to the treatment protocols.

Process

A complete battery of pretest measures was collected from students at each of the two school sites. Self-report measures were collected from students, and child assessment measures were mailed to their parents. Detention and disciplinary records were also assessed and summed for each student during an 8 week period (40 school days) immediately preceding program administration.

Following pretest assessment, all students ($N = 216$) were randomly assigned at the school level into either the experimental condition (i.e., the *SCARE* curriculum) or the control condition (i.e., the *Enter Here* curriculum). Program implementation thereafter ensued for an 8-week period during which time adolescents received either the experimental or control treatment twice weekly for approximately 1 hour each day. At the end of the 8th week a complete battery of post test measures was collected from all students, and child assessment measures were again mailed out to parents. Detention and disciplinary records were again assessed for the 8-week period (40 school days) following treatment. Reassessment also took place one-year following treatment, but child assessment forms were not mailed out to parents at this time because of poor response rate received from earlier mailings. Additionally, because of inconsistencies in the way each school site was found to maintain their student records, disciplinary records were not included in the long-term follow-up assessment.

Results

Exploratory Data Analysis

Exploratory Data Analysis (EDA) refers to a collection of techniques proposed by Tukey (1977) intended to let the analyst explore the data set while making only minimal assumptions about it. Behrens and Smith (1996) describe EDA as an "essential step prior to, and in parallel with, confirmatory procedures" (p. 26), and note that "data exploration is an important part of any data analysis." (p. 52). As such, different EDA techniques and

visual displays were utilized in the present study to explore sampling distributions, to ferret out anomalies, to assess for differential attrition across conditions, and to ensure that statistical assumptions were met prior to performing confirmatory analyses. The different EDA techniques performed in this study and their intended purpose(s) are briefly described under each topic heading below:

Missing Data

Missing data has been reported as one of the most pervasive problems in data analysis (Tabachnick & Fidell, 1996), and can be particularly vexing when it obscures true differences that exist between groups. In the present study, there was a fairly substantial amount of missing data because the student population in this study was highly transitory and attrition was great. Consequently, we observed a large number of cases where pre-test data had been collected, but was not accompanied with post test data, and vice-versa. Missing data in the present study was dealt with in two phases. First, the entire data set was assessed by way of frequency distributions and visual spreadsheet analysis to determine the extent to which missing data plagued the data set. Because inclusion of such data could severely skew results and prove highly misleading, our initial "data cleaning" procedures involved purging all cases that were not accompanied with both pre and post test data. As such, our original sample ($N = 207$) was reduced considerably ($N = 129$).

The second method employed for handling missing data involved analyzing each dependent variable across subjects to assess for missing values within variable sets. As a whole, missing data was scattered evenly across variables and treatment conditions, with no apparent patterns or clusters emerging (however, there were large amounts of data missing from the *MPRI-Parent* variable because of low response rates). To manage the missing data scattered evenly across variables and treatment conditions, the methodology suggested by Cohen and Cohen (1983) of inserting variable averages was employed. Specifically, in this method means were calculated from available data within each variable and were used to replace missing values prior to analysis. Tabachnick & Fidell (1996) describe this as a generally conservative procedure for managing missing data, but note that it can considerably reduce variance if employed with large amounts of missing data. Nevertheless, because missing data was scattered evenly across variables and treatment conditions in the present study, variance was generally not significantly compromised (with the exception of *MPRI-P* variable).

Additional Deletions

The deletion of additional cases was also warranted in some cases in order to preserve treatment integrity. Specifically, during random spot checks of treatment groups, one of the SCARE classrooms ($n = 18$) was found to have significantly and consistently deviated from the prescribed treatment protocol, and as such was excluded from the analysis. Additionally, only those students who participated in 10 or more (approximately two-thirds) of the 16 program sessions, ($n = 107$), were retained in the final data set in order to prevent the treatment groups from becoming "watered down". In other words, we felt that exposure to at least two-thirds of the program lessons was the minimum number necessary for students in the treatment groups to have an adequate representation of the program(s), and thus selected this as our cut-off point. Thus, after these final two exclusions to the data set were made, 67 males and 22 females ($N = 89$) remained. While not nearly as robust as the original data set, this number of subjects was still deemed sufficient to provide adequate power for our planned comparisons. In fact, post-hoc power analysis for our planned multivariate comparisons of treatment effects ranged from .63 to .72. Generally, power of .70 to .80 is considered ideal for planned comparisons (Stevens, 1996).

Multivariate Normality

Significance tests for MANCOVA and other multivariate techniques are based upon the assumption of multivariate normality which assumes that sampling distributions of means for the dependent variables are normally distributed. To assess for such normality, each of this study's dependent measures were assessed by way of constructing histograms and normal probability plots, and by way of assessing the kurtosis and skewness values associated with each distribution. With the exception of two variables (*MPRI-P* and the *Detention Records*), all ranges were within acceptable limits. However, because of the high number of missing cases in the *MPRI-P* variable, the substitution of mean score values for missing data (Cohen & Cohen, 1983) resulted in a distribution with very little variance that was highly leptokurtic. As such, this variable was excluded from our planned multivariate analysis and was instead independently analyzed by way of a separate univariate design. While the *Detention Record* variable also deviated from normality somewhat, its positive skew was not so much out of alignment that it also warranted exclusion from our design. Mardia (1971) has shown that

MANOVA is robust to modest violations of normality if the violation is created by skewness. As such, no additional steps were taken with this only moderately skewed dependant measure.

Multicollinearity, Singularity and Linearity

Finally, multicollinearity and singularity refer to the assumption that dependent variables are expected to be only weakly or moderately associated with one another so as to not contribute redundant information. Redundancy was determined by way of assessing the degree of relationship between variables and by reviewing within cell correlation matrices. R2 values approaching .90 are thought to reflect redundancy (Tabichnick & Fidell, 1996). Correlation values for the dependent anger measures ranged from -.26 to .60, and from .23 to .57 for the dependent aggression measures. As such, no r2 value came close to exceeding the .90 cut-off, with observed values suggesting only weak to moderate correlations between each set of measures. With regard to linearity, scatter plots were examined among each cluster of dependent measures, and no significant deviations or curvilinear relationships were noted.

Confirmatory Data Analysis

Having met the various burdens imposed by EDA, we thereafter proceeded to perform our planned confirmatory analyses. Specifically, to assess for main effects by treatment and gender, MANCOVA was utilized as an initial test of differences. Rosenthal and Rosnow (1991) define MANCOVA as "analysis of covariance for the situation of multiple dependent variables" (p. 563), and endorse its use as a preliminary multivariate test of differences. In discussing MANOVA and MANCOVA procedures, Stevens (1996) cautions against grouping all dependent variables into a single analysis because variables included on an experimental or heuristic basis may obscure true differences that exist along other variables. Additionally, because multivariate test statistics are highly sensitive to error in a system, separate multivariate analyses are preferred when dependent variables naturally cluster into theoretically related groups. Because the dependent variables in the present study did cluster into two distinct yet related groups (i.e. anger measures and aggression measures) and because many of the aggression variables were being tested on a heuristic basis, two separate MANCOVA procedures were performed.

Anger Measures MANCOVA

A 2 X 2 between subjects multivariate analysis of covariance was performed on three dependent variables associated with anger: STAXI State-Anger, Trait-Anger, and Anger-Control. Pre-test scores on each of these measures were input as model covariates. Independent variables were treatment condition (SCARE and Enter Here) and gender (male and female).

"Gender" was included as an independent variable in this model in order to enhance statistical power, and was not associated with a particular research question of interest. Order of entry of independent variables was gender, then treatment condition. Total N was 89.

Wilk's criterion revealed a significant multivariate effect for treatment condition, $F(3, 80) = 2.96, p = .04$, with an effect size reported at .10. Such findings indicate that the model of combined dependent anger measures was significantly different across *SCARE* and *Enter Here* groups, but the overall size of this effect should be considered small (Cohen, 1977).

Because significance was achieved at the $p < .05$ level, MANCOVA was followed by univariate ANCOVA's as post hoc tests of differences to determine exactly where the differences lie. Rosenthal and Rosnow (1991) describe ANCOVA as essentially an analysis of variance performed on a dependent variable that has been corrected for some other variable (a covariate) that correlates substantially with the dependent variable. Crowl (1993) recommends the use of ANCOVA for pre-post designs that employ groups which may not be initially comparable with respect to the dependent variable. Such univariate analysis investigating where such differences lie revealed that both *STAXI* State-Anger, $F(1, 82) = 6.92, p = .01$ ($\eta^2 = .07$), and *STAXI* Trait-Anger $F(1, 82) = 4.96, p = .03$ ($\eta^2 = .06$), were significantly different across treatment conditions. That is, at post test *STAXI* State-Anger was significantly lower in the *SCARE* group ($M = 53.12$) compared to the *Enter Here* group ($M = 56.11$), and *STAXI* Trait-Anger was also significantly lower in the *SCARE* group ($M = 45.35$) compared to the *Enter Here* group ($M = 48.68$), although the overall effect sizes for both of these differences (η^2) should still be considered small. While the *SCARE* group did marginally increase their level of Anger-Control from pre to post test, and the *Enter Here* group did experience a slight decrease in Anger-Control, the differences between groups along this anger dimension were found to be non-significant, $F(1, 82) = 1.11, p = .29$.

Aggression Measures MANCOVA

A 2 X 2 between subjects multivariate analysis of covariance was performed on three dependent variables associated with aggression: the Missouri Peer Relations Inventory-Child (*MPRI-C*), the Attitude Towards Guns & Violence Questionnaire (*AGVQ*), and the School Detention/Referral Records. Pre-test scores on each of these measures were input as model covariates. Independent variables were treatment condition (*SCARE* and *Enter Here*) and gender (male and female). "Gender" was again included as an independent variable in this model in order to enhance statistical power, and was not associated with a particular research question of interest. Order of entry of independent variables was gender, then treatment condition. Total N was 89. Wilk's criterion revealed a significant multi-

variate effect for treatment condition, $F(3, 80) = 3.90, p = .01$. The multivariate effect size for treatment condition was .13. Such a finding indicates that the model of combined dependent aggression measures was significantly different across *SCARE* and *Enter Here* groups, but also that the effect size was small.

Univariate analysis was again utilized to investigate where such differences lie, and in this case revealed that the *AGVQ* variable was significantly different across treatment groups at post test, $F(1, 82) = 10.90, p = .00$ ($\eta^2 = .12$). Specifically, at post test *AGVQ* was found to be significantly lower in the *SCARE* group ($M = 4.37$) compared to the *Enter Here* group ($M = 7.36$). As indicated by η^2 , the effect size for this difference was small, however. Neither the *MPRI-C* variable ($F(1, 82) = .70, p = .40$ [$\eta^2 = .01$]) nor the Detention/Referral Records variable ($F(1, 82) = .42, p = .51$ [$\eta^2 = .01$]) were found to differ significantly across treatment conditions.

Other Analyses

To account for the variable which was excluded from our planned comparison because it did not meet various statistical assumptions, a separate analysis was conducted for the *MPRI-P* variable. Specifically, a 2X2 between subjects ANCOVA was performed, with pre-test scores on the *MPRI-P* constituting a covariate. Independent variables were treatment condition (*SCARE* and *Enter Here*) and gender (male and female). Total N was 89.

In short, main effects were reported as non-significant for treatment category, $F(1, 83) = 00.01, p > .05$, indicating that the parental surveys assessing student aggression levels did not significantly differ with regard to treatment condition. However, in interpreting these findings it is important to note that the low parental response rates on these mailed questionnaires may have greatly affected ANCOVA's ability to detect important differences between groups.

Delayed Follow-Up Analyses

Lastly, to assess for the maintenance of treatment effects, follow-up data was collected at one-year following treatment, and was analyzed by way of additional graphical and statistical procedures. Due to the highly itinerant and at-risk nature of the students who participated in this study, only 34 students remained at delayed follow-up. Because of this notable attrition rate, the previously described method proposed by Cohen and Cohen (1983) of inserting variable averages to account for missing data was employed. Thereafter, graphical bar charts were constructed from pre-test, post test, and follow-up data, and were visually analyzed for each dependant variable previously found to be significantly different accord-

ing to treatment conditions at post test. Such charts are shown in Figures 2 through 4, and allowed for the visual inspection of data patterning across variables and time.

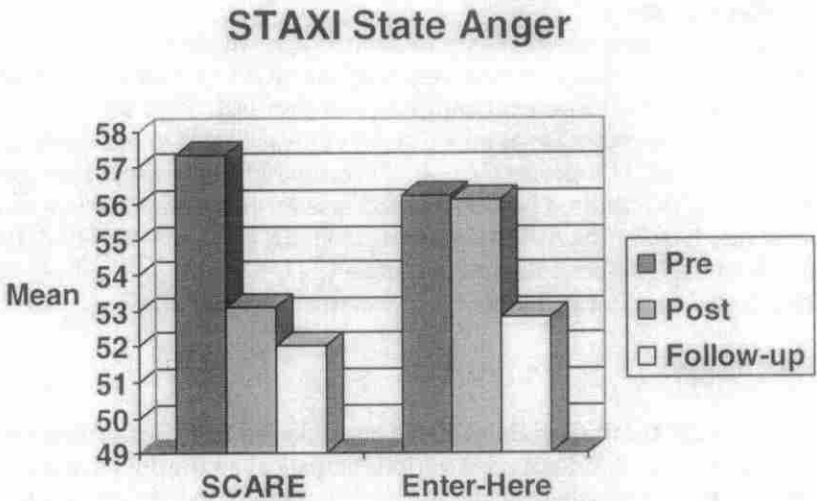


Figure 2. Mean level of state (situational) anger across time and by treatment group.

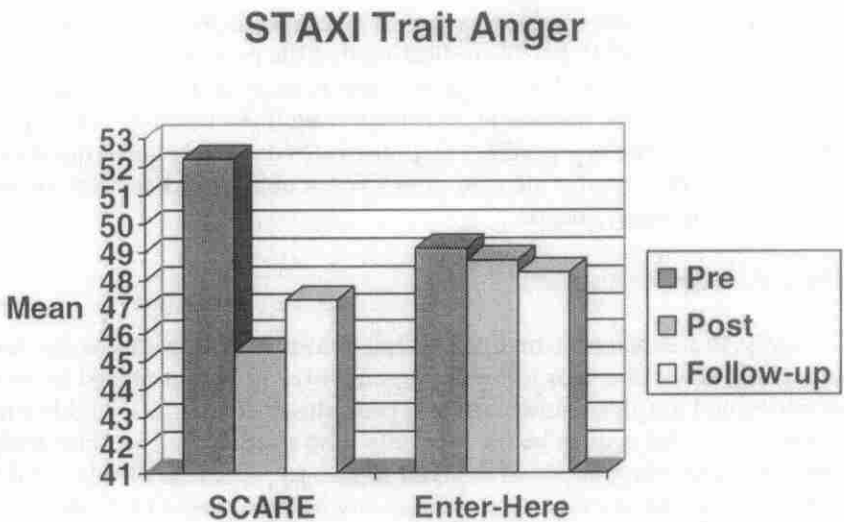


Figure 3. Mean level of trait (dispositional) anger across time by treatment group.

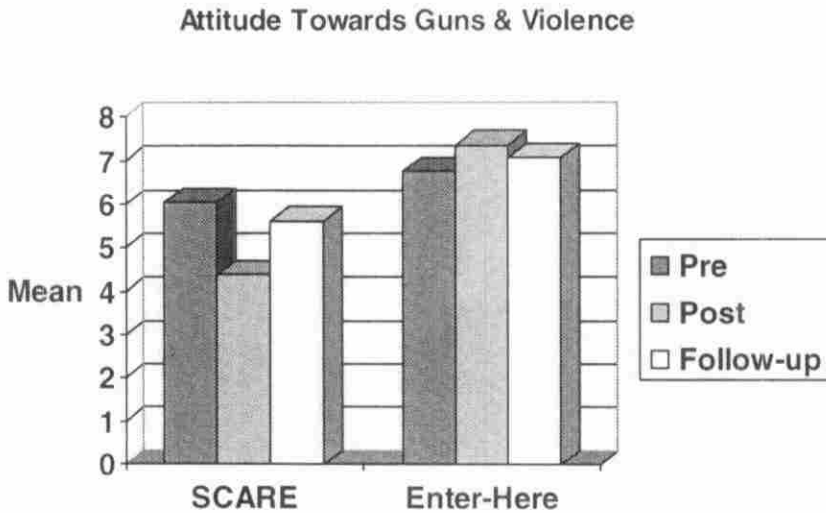


Figure 4. Mean level of aggressive and violent attitudes across time and by treatment group.

To statistically test for between group differences at one-year following treatment, a separate MANCOVA was conducted for the anger variables in the manner previously described, but with follow-up scores representing the dependent variable. The omnibus multivariate test of differences at one-year following treatment was found to be non-significant ($F [3, 82] = 2.05, p > .05$), indicating that in the absence of booster sessions or follow-up treatment, between group differences on anger measures evaporated over time.

With regard to aggression, a separate ANOVA procedure was run to test if groups were significantly different on the *AGVQ* variable after 1 year following treatment. ANOVA revealed that the *AGVQ* variable continued to be significantly different across treatment conditions ($F [1, 88] = 4.59, p = .04 [2=.05]$). Specifically, the *SCARE* group was found to be still significantly lower on the *AGVQ* variable ($M = 5.61$) compared to the *Enter Here* Group ($M = 7.07$). In short, the significant difference across treatment conditions reflect that *SCARE* students continued to be significantly less likely to endorse methods of violence and aggression as a means of settling their conflicts. However, because the other aggression variables in this study were subsequently dropped due to poor psychometric performance at post test, further investigation and analyses regarding how other dependent measures of aggression may have fluctuated over time was not possible.

Table 3
Group Means, Standard Deviations, and Number of Cases By Dependent Variable

| SCARE GROUP | | | | |
|----------------------|-------|-------|-------------|---------------------------|
| Variable | Mean | S.D. | Valid Cases | N (avg for missing cases) |
| ATGV(pre) | 6.04 | 3.61 | 41 | 42 |
| ATGV(post) | 4.37 | 3.39 | 41 | 42 |
| ATGV(1 year post) | 5.61 | 2.63 | 14 | 42 |
| Trait(pre) | 52.26 | 11.47 | 42 | 42 |
| Trait(post) | 45.36 | 11.58 | 42 | 42 |
| Trait(1 year post) | 47.25 | 6.06 | 14 | 42 |
| State(pre) | 57.36 | 9.72 | 42 | 42 |
| State(post) | 53.11 | 6.42 | 42 | 42 |
| State(1year post) | 52.03 | 3.64 | 14 | 42 |
| Peer Rel-C (pre) | 12.07 | 3.35 | 42 | 42 |
| Peer Rel-C (post) | 12.26 | 3.15 | 41 | 42 |
| Peer Rel-P (pre) | 12.90 | 2.47 | 13 | 42 |
| Peer Rel-P (post) | 12.70 | 2.47 | 6 | 42 |
| Detention Rec.(pre) | .38 | .82 | 42 | 42 |
| Detention Rec.(post) | .40 | .86 | 42 | 42 |
| ENTER HERE GROUP | | | | |
| Variable | Mean | S.D. | Valid Cases | N (avg for missing cases) |
| ATGV(pre) | 6.74 | 3.91 | 47 | 47 |
| ATGV(post) | 7.36 | 4.39 | 47 | 47 |
| ATGV(1 year post) | 7.07 | 3.32 | 20 | 47 |
| Trait(pre) | 49.09 | 11.64 | 47 | 47 |
| Trait(post) | 48.68 | 10.46 | 47 | 47 |
| Trait(1 year post) | 48.22 | 8.08 | 20 | 47 |
| State(pre) | 56.19 | 7.26 | 46 | 47 |
| State(post) | 56.11 | 8.23 | 47 | 47 |
| State(1year post) | 52.81 | 5.31 | 20 | 47 |
| Peer Rel-C (pre) | 12.89 | 3.52 | 47 | 47 |
| Peer Rel-C (post) | 13.19 | 3.41 | 47 | 47 |
| Peer Rel-P (pre) | 13.06 | 2.35 | 12 | 47 |
| Peer Rel-P (post) | 12.90 | 1.41 | 9 | 47 |
| Detention Rec.(pre) | .51 | .74 | 39 | 47 |
| Detention Rec.(post) | .38 | .69 | 39 | 47 |

Discussion

While violent crime in the United States has experienced an overall *decrease* in recent years, the arrest rate for violent juvenile crime has increased 143 percent since 1967 (USDJ, 1998). Additionally, the National School Safety Center's (2001) report on school associated violent deaths reports that "interpersonal disputes" represented the single greatest factor accounting for the most student deaths from 1992 through 2001. Clearly, many school-aged children in America could benefit from instruction regarding ways to better manage aggressive impulses, control hostilities, and defuse potentially hostile situations.

In response to a growing national concern regarding youth violence, the SCARE program (Herrmann & McWhirter, 1994, 2001) has been developed as a tool to help stem the tide of further aggressive acts. This program is an eclectic treatment package developed in conjunction with student advice, and specifically focuses on anger management, coping skills, and de-escalation strategies as ways to reduce violence among young people. To date, the majority of school programs currently in use across the United States aimed at reducing youth violence remain completely untested (Hoagwood, 2000). While the SCARE program has been well received by administrators, teachers, counselors and psychologists who have used this program, the experimental validity of the SCARE program has not been previously established in a controlled and scientific manner. As such, the purpose of the present study was to subject the SCARE program to the scrutiny of empirical investigation in order to determine its relative merits for use in an applied educational setting.

In short, this study found that at-risk students exposed to the SCARE program had a significantly lower level of STAXI State-Anger and Trait-Anger at post test when compared to control students. This finding is important because one of the major tenants of the SCARE program is aimed at helping adolescents reduce their overall levels and maladaptive expressions of anger. Observed reductions in STAXI State-Anger reflect that after completing the SCARE program students judged themselves to be considerably less angry in the present moment and in response to situationally determined life events than control group peers. Moreover, reductions in the STAXI Trait-Anger factor also indicate that SCARE students were able to make adjustments to their dispositional anger management styles and the way they typically manage their angry and hostile emotions. In other words, the observed reduction in STAXI Trait-Anger specifically suggests that SCARE students were able to reduce the frequency with which they experience feelings of anger towards others, and were also able to reduce their levels of frustration which often accompanies anger expressions (Speilberger, 1996b). While students exposed to

the SCARE program were not found to maintain their anger-related treatment gains after one year had elapsed since treatment, it should be noted that students in this study were not subjected to periodic booster sessions and follow-up lessons that have become standard practice in prevention and intervention protocols. Booster sessions, which are intended to reacquaint students with key program components, help solidify previous learning that has taken place. Had booster sessions and/or periodic refresher lessons been provided to students, it is reasonable to conclude that their anger related treatment gains may have been maintained over longer periods of time. This hypothesis should be investigated further by future researchers examining the effectiveness of the SCARE program.

Regarding aggression, however, students exposed to the SCARE program were found to have significantly less aggressive attitudes at post test and delayed follow-up as reflected by their AGVQ scores. Such reflects that the SCARE students continued to judge themselves as considerably less aggressive than control students, and that they were also less likely to embrace violence as a way of expressing their frustration. Lower scores on the AGVQ variable also suggest that SCARE students were less likely to believe that the shame resulting from being insulted can only be undone by means of aggression (Shapiro et al., 1997). Because significant differences were found between groups at delayed follow-up, the SCARE program appears able to help students make meaningful and enduring changes by influencing them to become more adaptable in the way they respond to potentially hostile situations. While the overall differences between treatment groups were consistently small, it is also reasonable to conclude that periodic booster sessions may have resulted in even more pronounced treatment effects here as well.

Limitations and Directions for Future Research

While the integrity and methodology of this study were not compromised in any significant way, certain methodological limitations and challenges were present that deserve special mention.

Measurement Limitations

Overall, most measures used in this study performed adequately, but there were two notable exceptions. Namely, the Missouri Peer Relations Inventory [MPRI] and the Detention/Referral Records variable clearly did not perform up to standards. While the MPRI variable is explicitly labeled as an experimental scale by the instrument's authors, a persistent pattern of response difficulty noted across our subjects strongly suggests that this instrument's limitations exist above and beyond that which has been previously described by the authors (see Blaske et al., 1989). Additionally,

with regard to the Detention/Referral Records variable, our poor results on this dependent measure appear to have been due to the low incidence of detention/referrals reported in our study. Of the 89 subjects who remained in our subject pool at post test, the overwhelming majority went through the entire duration of the study without receiving either a referral or a detention, and those which did occur were disproportionately scattered across only a few specific students in both treatment conditions. In contrast, Sugai et al. (2000) reported approximately half of the middle school students in their multi-site study of office discipline referrals received at least one discipline referral, and the schools in their study reported receiving an average of 8.6 discipline referrals per school day. Thus, the Referral/Detention record variable in our study did not discriminate student behavior nearly as well as it seemed to discriminate which teachers were either likely or unlikely to make student discipline referrals at all. As noted by Sugai et al. (2000), an important limitation of using office discipline referrals in studies like this lies in the unique manner in which each school or teacher applies referral procedures. Future investigations would therefore do well to incorporate other behavioral assessment methods that have been found to more reliably discriminate problem behavior.

Methodological Limitations

Another possible limitation of the present study was the large reduction of our subject pool from pre-test to follow-up. Because of attrition and other reductions made to the data set, our original sample ($N = 207$) was considerably reduced at post test ($N = 89$). Additionally, the number of subjects who were successfully tracked over the course of a year following treatment ($N = 34$) was also attenuated. The primary reason for this high attrition rate was the at-risk and itinerate nature of the student population who participated in this study. In addition to their previously noted fragility and proneness to academic and behavioral problems, the greater majority of these students came from socio-economically marginalized backgrounds as well. As such, a large percentage of them found it necessary to relocate to other cities with their families during some part of the school year, or to discontinue going to school for other reasons. Often, these students left no forwarding information with school personnel, making it impossible to track them during and beyond program implementation. Such resulted in a high degree of student attrition. While it can be argued that students such as these are the very ones who stand to benefit the most from an intervention such as the SCARE program, the tradeoff is that such students do pose certain limitations on the experimental aspects of program administration.

Effect Size

Finally, while this study found conclusive evidence supporting the SCARE program's ability to lower levels of anger and aggressive attitudes in student populations, the reported effect sizes for all treatment gains were interpreted as small according to Cohen's effect size index (Rosenthal and Rosnow, 1991, p. 444), and Green, Salkind, & Akey's (2000) interpretative schema for estimating the size of effects. However, in interpreting the practical meaning of small effects, Cohen and others have noted that small to medium effects are *very* common in social science evaluations, and should *not* be routinely dismissed as having little or no clinical significance. Additionally, Light and Pillimer (1984) have noted that most evaluations in social science and education report *only* small effect sizes. Rosenthal and Rosnow (1991) have also emphasized that "even statistically small effects may be of considerable practical importance" (p. 42), and cite several cases in support of this contention, including the small effect of aspirin on reducing the risk of heart attacks ($r = .03$), and for Vietnam military service and alcohol consumption ($r = .07$). While the effects reported in the present study could only be described as small based upon conventional standards, in many instances they actually exceeded those of several well established and clinically important relationships such as those noted above. The effect sizes from the present study were also in-line with other program effects found to be "modest", such as those recently reported for the FAST TRACK Program out of Duke University (Crawford, 2002).

Conclusions

With some of our most thoughtfully constructed prevention programs such as Drug Abuse Resistance Education (D.A.R.E.) (1983 / 1993) receiving unprecedented scrutiny for producing only minimal or absent treatment effects (Dukes, Stein, & Ullman, 1997), and other intervention programs being found to produce possibly harmful effects in the children they intend to protect (Dishion, McCord & Poulin, 1999); the SCARE program seems to represent a welcome addition to the available treatment options. Possibly because the SCARE program focuses on all students caught in the web of violence rather than just those at the upper end of the violence continuum, or possibly because the program is rooted in actual advice and suggestions offered by students themselves; the SCARE program seems able to make meaningful inroads where others have failed.

On the whole, results of this study demonstrate that the SCARE program is a promising prevention/intervention tool that targets maladaptive anger and aggressive attitudes in young people. Empirical evidence supports the efficacy of this program which can be administered as a school-wide prevention effort, a component of a classroom's life skills or health

education curricula, or an individually administered treatment program delivered to students in one-on-one counseling sessions. The SCARE program provides teachers, counselors, and psychologists with an easy to follow protocol that makes it possible to administer the program in a number of different contexts. While there are no panaceas in the field of prevention and intervention that will miraculously solve all the problems associated with juvenile violence and aggression, there are vital pieces to the puzzle that have gradually begun to emerge. With this analogy in mind, possibly the SCARE program represents one of the corner pieces to the puzzle – a pivotal piece from which other segments can be added to and expanded upon.

Note: In 2001, the United States Department of Education designated SCARE as a “promising program”, and the USDE Expert Panel on Safe, Disciplined and Drug-Free Schools recognized SCARE for its quality, usefulness and educational significance. Readers interested in obtaining a copy of the SCARE program should contact the lead author of this study at donher@juvenile.maricopa.gov.

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