

**AN ASSESSMENT OF THE EFFECTS OF INTERVENTION
IN HIGH RISK ELEMENTARY SCHOOL CHILDREN**

by

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An Assessment of the Effects of Intervention in

High Risk Elementary School Children

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ABSTRACT

Seventy-five elementary school students were identified by teachers as being high risk for manifesting conduct-behavioral and socialization problems believed to be interfering with academic progress, and/or low intellectual achievement as a probable consequence of psychological problems. From this initial group, a subset of thirty-two were randomly selected for a direct intervention situation by students from the local high school. One eleventh and six twelfth graders administered behavioral and cognitive-behavior therapeutic programs. Various behavioral and achievement measures were employed on a pretest and posttest design covering a period of approximately five and one-half months. Experimental results indicated a positive influence for the high risk treatment group as a result of mediation by the high school students.

DEDICATION

This thesis is dedicated with gratitude, respect, and affection to my grandfather, Howard Itsuo Inouye, for his love and support over the years, especially with respect to pursuing my own dreams.

It is also dedicated to the memory of my cherished Koko, whose love and devotion will never be forgotten.

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INTRODUCTION

There is no other public institution that has as pervasive a role in society as the education system (Bardon, 1968). North American children from preschool age through late adolescence, commit approximately 25% to 40% of their waking time to educational institutions, including the related activities of homework and extra-curricular functions. In addition to academic duties, schools serve as a socializing agent for children. Although schools are not held primarily responsible for the psychological health of students, it is difficult to escape recognition of the tremendous impact they exert on the individual (Morse, 1975). Therefore, if it could be demonstrated that early detection and intervention are effective in mediating current difficulties in students, the process may subsequently serve as a positive influence for later development. The current study has sought to accomplish this by evaluating the effects of providing attention by high school students on elementary school children identified as "high risk". High risk was specified for use by teachers as children manifesting behavioral-conduct problems and/or socialization inadequacies believed to be interfering with academic and social progress, low intellectual achievement, or combinations thereof. The inquiry was particularly designed to examine the efficacy of an intervention scheme that commences with teacher identification of the referred student cohort.

Historical Background

The conventional delivery of community mental health services focused attention on those who asked for assistance. Rappaport and Chinsky (1974) regarded this style of mental health servicing as the "waiting mode" since the professional waited until he or she was contacted by a patient. In contrast to the waiting mode, they also recognized the "seeking mode". Rappaport and Chinsky believed that the latter expression is what actually represented the appropriate role for community mental health. The seeking mode often called upon the professional to operate within a community as a creator and evaluator of programs to meet the concerns of the specific location in question. But service delivery has not been limited to professionals. Nonprofessionals have also been involved, especially those trained by professionals or qualified individuals. An advantage of the seeking mode is that it involved placing a professional in a an unorthodox position of conceiving and assessing programs to deal with a community problem or problems.

The attention to the mental health of elementary school-aged children was essentially an outgrowth of the early activities of community psychology during the 1960's (Patterson, 1971). Behar (1981) suggested that consultations by community mental health centers could be effectively employed for the training of teachers and/or for the preliminary assessment of those students believed to be psychologically troubled. The intrinsic purpose was to prevent the development of more serious problems.

Unfortunately, defining concepts in prevention research has been difficult. The differentiation between remediation and prevention has been a source of confusion that severely hampered progress in prevention research, especially in the school systems. Kessler and Albee (1975) reported that definitions of prevention have been inconsistently applied across studies. Furthermore, although prevention-type studies date back to the

research of Bullis (1941) dealing with "shy and recessive" seventh and eighth grade Canadian school children, it wasn't until Caplan's book in 1964 that an explicit attempt was made to clarify the term "prevention". Caplan proposed the concept of prevention be divided into three categories - primary prevention, secondary prevention, and tertiary prevention. Using the medical model, which pervaded the "helping professions" at that time, primary prevention was conceptualized as action undertaken to prevent the occurrence of a disease, secondary prevention was conceptualized as the initial stages in the process of remediation, treating the disease once it has occurred, and tertiary prevention was conceptualized as the effort expended to mitigate the long-term effects of the disease.

In contrast to the influence of the medical model, the community psychology model argued against focusing attention on curing the illness in the physician-patient paradigm. It was proposed that more attention be devoted to teaching and building on the strengths of individuals in order to develop the necessary skills to dispense with the dilemmas posed by life (Adelson & Kallis, 1970). Goodyear (1976) suggested that an equivalent amount of professional and financial resources could be used more efficiently by "helping" more clients prior to the onset of "illness". Hence, Goodyear redefined Caplan's tripartite description of prevention by eliminating references to the medical model. Caplan's conception of primary prevention was modified to preventing dysfunction by teaching life skills and altering the environment. Secondary prevention in Goodyear's model was directed toward individuals experiencing mild disorders and/or crises. This offered two areas for intervention. The first accentuated early detection, while the second stressed a more developmental approach of working with children in order to alleviate or avert nascent or unequivocal psychological problems. Lastly, tertiary prevention, which

Goodyear believed extended beyond the boundaries of what he would consider prevention, was directed toward alleviating the consequences of severe and chronic problems.

An added advantage of Goodyear's model was that it focused attention on delivery modes. The design provided two fundamental methods of delivering the necessary services embodied in the tripartite classification of prevention (Baker & Shaw, 1987). The first represented the more traditional method of providing services directly to children, otherwise known as the direct delivery mode. The second involved an indirect delivery mode, providing services to teachers and parents, those engrossed in primary responsibility relationships with children.

This conceptualized difference produced by the distinction between direct and indirect service delivery modes had other philosophical implications. If one adopted the primary prevention stance and provided service directly to a child presenting a problem, then the assumption was made that it was the child who must change, and that the environmental situation was either unchangeable or did not need to be altered. Conversely, the variable of situation became crucial when providing services to children who had not been previously identified as manifesting problems. Some researchers (Hersch, 1972; Rappaport, Davidson, Wilson, & Mitchell, 1975) have suggested that the former condition may be the consequence of implicating the victim as the target of intervention, rather than contending with the factors believed responsible for influencing an individual's behavior. The problem of this choice was that it bypassed considerations of environmental influences which may have offered a more realistic and effective approach to mediation.

The indirect service delivery mode highlighted the importance that the environment played in the developmental processes of the child. Another advantage of an indirect service delivery procedure was its efficient return on financial investment. Baker and Shaw (1987) stressed the cost-effectiveness perspective in that it represented the one way in which a limited number of helping professionals could effectively reach large numbers of children. Primary prevention posed potential benefits for all children, while remediation/therapy (secondary and tertiary) prevention programs were necessary for only a smaller proportion of the student population. Hence, primary prevention included those children who were considered "normal", that is, those not considered to be in need of intervention.

With respect to the tripartite classification of prevention (primary, secondary, and tertiary) being integrated with the two modes of service delivery (direct and indirect), six program types could then be delineated. Nonetheless, there were still other complications concerning the application of program designations. According to Shaw and Goodyear (1984), there was no consensus on who should be the recipients of primary prevention services, what should serve as the target of intervention, and when it should be provided. Shaw and Goodyear found some researchers suggesting that primary prevention services be limited only to mental health considerations, whereas others asserted that they may be appropriately applied in dealing with learning problems. Some have even offered strategies that combined both of the previous separate schemes. Zax and Cowen (1972) believed anything that may be done to "improve the lot" of the individual should be contrived as appropriate for primary prevention. Roberts (1970) proposed that there were three critical elements to prevention - eradication of the problem, increases in resistance to the problem-producing agent, and prevention of the contact between individual and

problem-producing agent. The most recent controversy in the literature was whether primary prevention should solely concern those individuals assessed as high risk, or also include those individuals having no perceivable problems. This dispute was primarily a result of the immense claims for mental health resources with respect to the limited amount of service providers. Primary prevention protocols were difficult to implement considering the work-load demands on mental health professionals (Wicks & Parsons, 1984). Unlike secondary and tertiary strategies, primary prevention required a greater commitment of financial, political, and social support. Furthermore, intervention on individuals without perceivable problems may be unnecessary and wasteful of already scarce resources. The possibility that children may outgrow their problems represented another important consideration.

The controversy imposed by the failure to reach a common understanding on a precise definition of prevention was an extremely significant one. It impeded research progress (Shaw & Goodyear, 1984) as well as raising concerns about the medical model (Kessler & Albee, 1975). What had previously been understood as primary prevention, has often been usurped to mean prevention as expressing any one, or all three categorical types. Cowen (1982) appears to have best summarized this predicament with his statement that "an author's decision to call something primary prevention may be the single most important determinant of whether it is so classified and cited" (p.134).

For the purposes of this investigation, prevention was defined as those processes enlisted in the direct services mode of Goodyear's (1976) conceptualization of secondary and tertiary prevention. This necessarily precluded servicing nonreferred individuals and focused attention on those previously identified as high risk. The definition was also intended to encompass the transition between secondary and tertiary prevention which

has often been difficult to clearly establish, and for which the presence of severe and chronic problems were frequently a very formidable task to determine at early ages in human development. Furthermore, the current study was technically free of direct professional assistance. While the therapists or counselors were trained high school students, the teachers were enlisted only for the purposes of identifying the high risk subjects, and indicating the in-class behaviors and academic progress for both referred high risk subjects and randomly selected nonreferred students. It was believed that imposing upon teachers the additional assignment of determining whether a child should be subject to tertiary prevention was probably far beyond their evaluative capabilities, much less in accord with ethical standards.

There was also some empirical support for restricting the definition of prevention in the current study. The implied meaning of primary prevention does not endorse the position that primary prevention services may be administered reactively, whereas the remedial intent of both secondary and tertiary prevention is underscored by a reactionary scenario. It also was not meant to imply that the treatment group is solely responsible for targeted change, but merely that the focus of remediation was narrowed to the greater exclusion of potential contributing environmental factors, which may have been beyond significant alteration in the first place. This accommodated a plausible explanation for those situations that were recalcitrant to change, such as entrenched educational institutions and/or personnel, uninvolved or uninterested parents, a dysfunctional home-life situation, etc.

Historically, the intent of most prevention strategies in the schools has been of the reactionary kind. According to Baker and Shaw (1987), this probably was the result of the passage of PL 94-142 (Public Law) in the United States - the Education for All

Handicapped Children Act. The beginnings of prevention services, however, have been ascribed to that of Bullis's (1941) work assisting Canadian school children in interacting more effectively with others. In 1955, Ojemann, Levitt, Lyle, and Whiteside revealed the findings of a direct services approach in which teachers were charged with instilling in their students the concept that behavior was purposeful. Teachers taught that behavior occurred pursuant to a cause and effect relationship. This resulted in improved interpersonal relationships between the elementary school students. Perhaps more significantly, the study resulted in the development of curricula for all elementary school grade levels, a continuation of the investigation over a period of several years, and recognition of the approach as being preventative in nature.

Although Caplan (1964) did not associate his tripartite classification to the education system, especially since it presented a vigorous relationship to the medical model via connections to mental health, he did focus awareness on the specific issue of prevention services. It therefore, became an important fixture in psychiatry. However, it also caught the attention of community psychology. According to Adelson and Kallis (1970), community psychology quickly adopted prevention services as a crucial focus of attention that extended beyond the community setting into the school systems.

The Primary Mental Health Project

The Primary Mental Health Project (hereafter referred to as the PMHP) represented the prototype of community psychology's venture into the schools (Cowen, Trost, Izzo, Lorion, Dorr, & Isaacson, 1975). Operating continuously since 1958, it was developed as a secondary prevention service to detect and remedy maladaptation and emotional problems in the schools based on similar work done previously by Klein and

Lindemann (1964). As a preliminary justification for the PMHP, Cowen (1971) cited the report by Glidewell and Swallow (1969) which determined that approximately 30% of all children experienced moderate to severe adaptation problems to school. For Cowen, this meant that in 1971, 13,000 of more than 40,000 students in the city of Rochester, New York, may have needed assistance in order to derive maximal benefits from their education. Up to one-half of a teacher's in-class time was believed to have been occupied by maladapting children, which foreshadowed an inauspicious atmosphere for not only those children and the teacher, but also for the non-maladapting students.

Additionally, an examination of school records indicated that many intermediate school children identified as maladjusted, manifested academic difficulties. Zax, Cowen, Rappaport, Beach, and Laird (1968) could not empirically explain this observation, but Rappaport (1977) proposed that it may have been a result of negative expectations associated with the maladjustment labeling, or children presenting deficits beyond the therapeutic capabilities of any type of mediation. These speculations provided further support for PMHP. However, with respect to this study, Rappaport's latter explanation implied that intervention success may be inconsequential irregardless of treatment method. Whereas the former alternative was an experimental bias that required attenuation in order to minimize its hypothetical influence. And it did represent a significant concern for this investigation since labeling of high risk elementary school children was an integral procedural aspect.

There were other reasons that justified research substantiating the effectiveness of PMHP's secondary prevention services. Cowen et al. (1975) reiterated Albee's (1959) conclusion that future mental health personnel needs predicted forbidding deficiencies in all areas, and that the increasing demand for mental health services was straining already

limited resources. In 1961, Albee's enunciations were further amplified in the United States when the Joint Commission on Mental Illness and Health issued a report recommending the utilization of suitably trained and competent mental health workers for the purposes of performing "general, short term psychotherapy" in meeting the shortage of mental health service providers. Schofield (1964) went so far as to suggest that while thousands of individuals solicited mental health services, the actual underlying need should really be tabulated in the millions.

Concern for the inadequacy to substantially meet mental health demands prompted many projects, such as the pioneering study by Umbarger, Dalsimer, Morrison, and Breggin (1962) employing college students as mental health workers with chronic schizophrenics. A related study to the PMHP was the Institute of Mental Health investigation that trained housewives thirty-two hours a week for two years to become psychotherapists. The efficacy of the training process was verified when these women scored higher on the Psychiatric Board Examination than psychiatry residents (Rioch, Elkes, Flint, Usdansky, Newman, & Silber, 1963). Consequently, Cowen et al. (1975) foresaw the opportunity of expanding the delivery of mental health programs through the use of nonprofessionals. These antecedent examples of mental health servicing by nonprofessionals represent a fundamental basis of support to the current study. The primary difference is that mediation was conducted by high school students.

Also vital to the progress of research and events leading up to, and including the Primary Mental Health Project, were other developments which highlighted the importance of researching the efficacy of mental health prevention services with children. In 1965, Stennett discovered that school children characterized as emotionally handicapped, generally functioned at a significantly lower level over time than others not identified as

such. But in their review of earlier studies, AllinSmith and Goethals (1962) argued against the permanence of childhood disorders if left untreated. Hence, Zax et al. (1968) believed that a longitudinal examination of intervention with childhood disorders was necessary since it would assist in determining the structure of secondary prevention programs. If early childhood disturbances posed enduring consequences, then early identification and prevention would be warranted. Conversely, if early childhood disturbances were transitory, then early intervention efforts should be delayed until an age where intervention would be prudent, since the lack of mediation would probably manifest itself via a mental health problem.

It has also been suggested that all children would benefit from personal attention (Cowen et al., 1975). This certainly would be the desired outcome from a primary prevention approach that intervened with both maladjusted and nonmaladjusted children. Only a longitudinal research protocol could accurately discern the comparative extent of gain. Such an examination would yield data concerning the relative merits of intervention between those children believed not in need of assistance, and those in need of assistance.

Phases of the PMHP

There were two phases to the PMHP. The first phase involved the 1958 to 1963 period. Its primary purpose was to identify school maladjustment in first grade students at an elementary school, and secondarily, to prevent further maladjustment. According to Bloom (1984), the results of this phase were quite modest. Comparisons of first grade students in the treatment school, and first grade students in two control schools when the children reached the third and seventh grades, suggested only partial success for the

intervention. Fourteen of forty-six comparison measures indicated significant differences, such as lower grades, underachievement, and lower attendance rates for the experimental group children. But results were not consistent, and the appropriateness of the follow-up studies were questionable because of high student attrition from the three schools involved. However, Zax and Specter (cited in Bloom, 1984) proposed that besides the high attrition rate, inadequacies within the program may have also played a significant role. Rather than offering the more traditional patient (or client) - therapist clinical relationship, the school psychologist and social worker concentrated most of their efforts toward a more educative and consulting service orientation for teachers, school nurses, administrators, and parents. Direct service delivery to groups of ten students for one hour a week during a twenty week period was provided after school. The purpose of this group therapy was to offer a meaningful interpersonal experience within an informal setting through activities ranging from woodworking to baking. The second phase of the project began in 1973, partially as a result of the ambiguous results.

Substantial changes were incorporated into the second phase of the study. The most important was the emphasis on providing direct intervention service to those children identified as vulnerable. Aides were trained to initially assist teachers in the classroom for a half of a day, five days a week, with children who required more attention than the teacher alone could provide. Initially, teachers were free to use the aides in whatever capacity they believed most helpful, but more importantly, the aides were free to interact with the children in ways that they felt most comfortable, provided it coincided with the project's goal of assisting children educationally and interpersonally. However, conflicts soon arose in the structured class setting between teachers and aides. Teachers generally saw the classroom behavior of the aides as disruptive, especially to their authority and

teaching plans, while aides became confused and frustrated as to the purpose of their presence. Hence, the duties of the aides were later modified so that they eventually offered supplementary experiences away from the classroom for certain children, usually on an individual basis. Finally, as a supplement, volunteer college undergraduates were procured to staff and operate an after school day care program for the purpose of providing attention to children referred because of acting out, poor socialization, underachievement, or combinations thereof. This use of aides and college students was similar to the emphasis in the current study of retaining high school students for intervention.

The analysis of data for the second phase yielded encouraging indications of accomplishment. Evaluations of the aide and volunteer undergraduate day care programs by the teachers indicated that both endeavors resulted in significant improvements in the behavior of the referred children. Consequently, since 1969, the initial program has been expanded to cover 30 schools in the Rochester area, as well as being introduced into approximately 300 schools representing 40 school districts around the United States (Cowen, Gesten, & Wilson, 1979). Unfortunately, there has been essentially nothing written on the efficacy of these "offspring" programs. One reason for this was that school mental health officials tended to adapt parts of the original project phases to their programs, thereby complicating direct comparisons. Another reason was due to the relatively scarce numbers of mental health professionals (Cowen, 1971). As a result, mental health professionals must often limit their time to consulting as a means of reaching the most individuals. This usually resulted in research being deferred, and teachers held responsible for primary assessment and delivery of mental health services. Also, individual therapy by a professional was generally reserved for individuals believed most in need,

with these cases usually being referred to private sources or another agency. Perhaps the most telling reason was the general lack of funds to staff mental health professionals in the schools, although if funding did become available, the system that produced these specialists would necessarily require drastic revision in order to meet the high demands. In 1981, Behar observed that there were probably not enough professionals for staffing purposes, should everyone in the various mental health fields have affixed their attention on the schools.

Behar also stressed that it has become increasingly important to document the effectiveness of programs. Programs found to be efficacious should ostensibly serve as models for replication. But even those programs found to be unsuccessful have a purpose. For accountability reasons alone, it is important to separate efficacious procedures from inefficacious ones.

The latest evaluation of the Primary Mental Health Project was conducted in 1975-1976. Utilizing teacher and aide ratings of problems and competencies of the children, and the evaluations of the children's improvements from mental health professionals, Cowen et al. (1979) found that the referred experimental group significantly improved on all dependent measures. The researchers concluded that the project effectively remediated the maladaptation problems of school children.

Indirect Primary Prevention Services

In spite of the relative paucity of research concerning similar studies to that of the Primary Mental Health Project entailing a direct services delivery mode for secondary prevention, there has been an abundance of investigations concerning the indirect service delivery condition with respect to primary prevention. The most recent trend appeared to

be the application of indirect primary prevention services (Baker & Shaw, 1987). The fundamental incentive for this was that it allowed a small number of mental health specialists to reach a proportionately larger number of students, therefore it was thought to be more cost-effective. However, Cobb and Richards (1983) devised a direct service-secondary prevention study which they believed met the requirement of accountability. In their study, group counseling sessions led by the school counselor and teachers, were employed with the anticipation of decreasing behavioral problems of selected conduct-disordered fourth and fifth grade children. There were eight 30 minute sessions conducted by the school counselor, and sixteen 30 minute twice-weekly sessions led by the teacher. Results indicated that intervention significantly reduced the problem behaviors of the treatment group. Unfortunately, the control group for this study was only represented by selected conduct-disordered children not assigned to treatment. No specific provisions were made to study the effects of nonconduct-disordered children in and out of treatment.

For treatment programs offering a secondary prevention service, early identification of vulnerable or high risk children was viewed as being extremely critical. Rappaport (1977) observed that criteria employed to distinguish these children, as well as the ensuing interventions, were notably diverse. But while guidelines used for classification purposes may have varied intensely, there was ample documentation sustaining the reality that there were children in need of assistance (Cowen et al., 1975).

Project Cope

The present study (Project Cope) at Blaine Elementary School in Blaine, Washington, was undertaken to examine the efficacy of intervention by nonprofessionals. The design followed a direct service secondary and tertiary prevention mode. Although

primary prevention is important, and may be more cost-effective in the long run, it was believed unfeasible to ignore secondary and tertiary prevention services unless a clear need did not exist. Furthermore, the direct services application was not meant to imply that the child was solely responsible for change, only that remediation was being focused upon them because they represented what was believed to be most accessible; dealing with a problem that required intervention with family members, altering the classroom environment, etc., would have been beyond the scope of this study.

A one-on-one high school student to referred elementary school student approach was employed for intervention. None of the previously cited studies have solely relied upon this direct protocol. For example, Cobb and Richards (1983) used group sessions entirely, while the Primary Mental Health Project intermingled both individual and multiple persons-group contacts.

In conclusion, by contrasting high risk students receiving treatment to those not receiving treatment (including nonreferred students), it was hoped that individuals identified as high risk would indicate improvement as a result of intervention. Four subject groups were employed in the study: 1) referred (high risk) treatment, 2) referred (high risk) no-treatment (results for this group were not reported due to the extremely limited number of subjects), 3) nonreferred treatment, and 4) nonreferred no-treatment. Four dependent measures evaluated prior to (pretest) and after (posttest) intervention were used to evaluate the efficacy of treatment. The measures were the Achenbach Child Behavior Checklist, absences, grade point average, and the Metropolitan Achievement Test.

More specifically, the following hypotheses were addressed in this study:

1. That individuals in the nonreferred group differed from those in the referred groups at the pre-period assessments. In comparison to the nonreferred group, referred group scores from the Achenbach Child Behavior Checklist and absences were expected to be higher, while grade point averages and Metropolitan Achievement Test scores were anticipated to be lower.

2. That individuals in the nonreferred and referred nontreatment groups would not show any alterations in post-period assessment scores from the pre-period, thereby indicating an absence of benefits from nonintervention. All four posttest dependent measures would show essentially no change from pretest scores. Conversely, individuals in the referred treatment group were expected to show an alteration in post-period assessment scores from the pre-period examination, thereby indicating the influence of intervention. Posttest scores from the Achenbach Child Behavior Checklist and absences were expected to decline from pretest levels. Posttest scores for grade point average and the Metropolitan Achievement Test were anticipated to increase over the pretest figures. Overall, the referred treatment group's posttest score should show movement in the direction of those figures exhibited by the nonreferred subjects.

METHOD

General Information

Blaine Elementary School in the city of Blaine, Washington, served as the site for this study. Three school divisions - Elementary School (grades kindergarten through fourth), Middle School (grades fifth through eighth), and High School (grades nine through twelfth), were situated in adjacent facilities. The elementary school had approximately 500 pupils, and served a predominantly caucasian, lower-middle to middle class community. Enrollment was estimated to be increasing at about 7% per year.

Design

The design of the study called for one treatment group consisting of referred high risk elementary school students (RTX) and a second treatment control group consisting of nonreferred elementary school students. The nonreferred treatment cohort represented the first of three control groups employed in the study. However, because the number of subjects receiving treatment was strictly limited by the number of participating high school students, analysis of the data for this group consisting of three children was not undertaken in order to maximize the number of students in the referred cohort receiving treatment. The inclusion of the three subjects as a treated nonreferred group was principally intended to obviate the possible effects of negative labeling that may have been accorded to the treated referred high risk students. Two other control groups were employed, neither receiving treatment or any attention by the high school students, except for an early administration of one of the measures used in the study (The Coopersmith Self-esteem Inventory; as explained later, this measure was eventually abandoned.). The first group consisted of referred high risk wait-list controls (RNTX), while the second

represented nonreferred controls (NR). The length of the study spanned approximately seven and one-half months. Program evaluation was conducted on a pretest-posttest comparison basis.

The High School Students

Direct intervention on the referred treatment cohort was carried out by one female eleventh grade high school student along with two male and four female twelfth grade high school students from Blaine High School registered in a course on counseling. (A male and female high school student withdrew from the class and study prior to introduction to their elementary school subjects because of personal reasons. Another female high school student withdrew during the first week of introduction, because of a family relocation. However, another female high school student was immediately substituted and fully qualified with respect to the training curricula by the high school principal.) They were trained on a daily basis (Monday through Friday) over a three week period by the Blaine Elementary School Principal, the elementary school psychologist, special education teacher, and other teachers, with regard to various topics appropriate to psychological intervention approaches for elementary school age students. Class time amounted to 55 minutes per day, and was supplemented by related homework assignments during the three week period. Examples of topics covered included issues of abuse, behaviorism, child development, and counseling.

Because the interventions essentially occurred during the last school period of the day, the high school students usually assembled in a conference room for brief messages from the elementary school Principal prior to meeting with their assigned children. There were also approximately fifteen days during the intervention period when they met only

with the elementary school Principal during the last period to discuss their cases, research topics, etc; many of these classes coincided with special situations such as a parent-teacher week. Private appointments between the elementary school Principal and high school students also occurred.

One major course assignment for the high school students concerned writing a research paper on one or more of the major psychological schools and their respective proponents such as Freud, Watson, Skinner, Piaget, etc. Another requirement concerned completing a "hands-on" observation project applying general psychological principles. Furthermore, it should be stressed that because the high students were enrolled in a bonafide course, and receiving a regular full credit toward graduation, they were provided with numerous readings concerning topics in developmental psychology, the major schools of psychology and associated theorists, and theories on counselling.

Each high school student was assigned five elementary school students. They were expected to meet with their assigned child once per week. However, because there were school weeks which did not hold classes the standard five work or school days, the high school students were only expected to meet with their subjects for a period of 17 total sessions.

The specific agenda for the three week "training" period consisted of the following issues:

- Day 1 - Child Abuse
- Day 2 - Counseling Issues Related to Child Abuse
- Day 3 - Dysfunctional Families
- Day 4 - Aspects of Behavioral Dysfunction
- Days 5 & 6 - Principles of Behavioral Intervention

- Day 7 - Class Discussion of Behavioral Intervention Issues
- Day 8 - Basic Principles of Developmental Psychology
- Days 9 & 10 - Age Level Appropriateness with Respect to Psychological Methods of Intervention
- Day 12 - Basic Principles of Counseling
- Day 11 - Counseling Young Children (Kindergartners and First Graders)
- Day 13 - Counseling Skills
- Day 14 - The Effects of Counseling
- Day 15 - Class Discussion of Counseling Issues

Elementary School Subjects

Referrals (see Appendix A) based on the description of high risk were invited from the teachers of Blaine Elementary School for all grade levels (kindergarten through fourth grade); the forms represented the sole mode of instructions for referral into the study. As mentioned earlier, the definition of high risk pertained to any student who displayed behavioral-conduct problems and/or socialization inadequacies believed to be interfering with the academic and social progress of the child, low intellectual achievement, or combinations thereof. It is very similar to the general definition of "red tag" that was employed in the Primary Mental Health Project (Cowen et al., 1975), designating "children who already showed moderate to severe problems of school maladaptation or seemed likely to show such problems in the near future" (p. 61). Students identified as manifesting

problems of an organic basis were excluded from the study. There was a separate established program meeting the needs of these children.

From the referrals, a treatment group and a treatment waitlist control group were randomly selected. Because each of the seven high school students were randomly assigned five subjects, this meant that a maximum of 35 high risk elementary school students could be allocated to the treatment group. However, three spaces of the treatment cohort were randomly selected from the nonreferred general population of elementary school students as nonreferred treatment controls, leaving the remaining 32 openings for referred high risk subjects. This therefore placed 43 students out of the total high risk referral group of 75 (mean grade level = 1.97, where scores ranged from "0" for kindergartners, "1" for first graders, "2" for second graders, "3" for third graders, and "4" for fourth graders; $SD = 1.37$) into the treatment waitlist control group, with 32 assigned to the high risk treatment group. (Originally, the total high risk referral group was 79 students, but the parents of one child did not wish participation in the study, one child moved away before the pretest administration of the Teacher's Report Form of the Achenbach Child Behavior Checklist eight weeks into the school year, and two children from the referred treatment group were replaced. One of these children moved away during the sixth week of the intervention period. The other was replaced during the eighth week of intervention because the designated high school student did not believe the assignment was suitable. Both replacements were made with students from the waitlist. Unfortunately, because the term of treatment was shorter than the total number of required sessions, their data were deleted from the study.)

In addition, a second nontreatment control group comprising 75 randomly selected (Blocked on classrooms and sex of subjects with respect to number of referrals; the blocking on sex was made to reduce the possibility of gender effects which were not a planned aspect of this study.) nonreferred students was chosen. (There were initially 79 nonreferred students chosen as a result of the blocking selection procedures, but four were deleted when their referred cohort counterparts withdrew.)

Permission for participation of individuals in the two treatment groups and the waitlist control subjects was obtained through parental or guardian consent. Parents of referred children were mailed an implied consent letter from the Principal of the elementary school which stated that consent was provisionally rendered unless objections were indicated to school officials (see Appendix B). Because a self-esteem inventory had initially been used for the pre-period assessment, the parents of nonreferred children were also mailed an implied consent letter from the Principal of the elementary school (see Appendix C). Additionally, phone calls by the Principal were also made to at least one parent or guardian of each child to be certain that they understood the implications of the letter, and to answer any questions that arose. It was especially stressed in communications to the parents that complete confidence would be maintained, that they were free to withdraw their child (or children) from the study at any time, and that data would be destroyed in the event of withdrawal. In addition, although the purpose of the study was not explicitly provided to the children unless asked, they were also free to withdraw from the study at any time if they so desired.

An "Ethics Checklist for the Student Investigator" required by the Department of Psychology at Simon Fraser University to remind investigators of their ethical obligations, was completed prior to the inception of the investigation.

Procedure

Each high school student met with their randomly assigned elementary school children one day per week for approximately 35 to 40 minutes. The intervention sessions were conducted over an approximately five and one-half month period. However, as mentioned earlier, because there were weeks during the school year that were not the standard five days, the high school students were informed that they were expected to meet with their children for at least 17 total sessions. Consequently, the completion dates for therapeutic intervention differed among the treatment subjects. Absences on the part of the elementary school children and/or the high school students did affect the treatment schedule, and were made up as much as possible.

It is important to stress that experimental procedures for this study were not conducted to secure teacher blindness with respect to subject participation. A situation of complete blindness was not possible since teachers initiated all referrals, as well as being the only appropriate assessors for two of the measures used in this study - the Teacher's Report Form of the Achenbach Child Behavior Checklist, and report card grades.

Assessment Measures

The assessment instruments were administered on a pretest-posttest basis to indicate the possible effects of change resulting from the intervention period. Subjects missing scores from either one of the time periods were excluded from analysis for the respective instrument. (Scores were missing when the child was not present for either the pretest or posttest administration of the measure.) Five assessment instruments were initially used in this investigation. However, the Coopersmith Self-esteem Inventory was

discontinued after the pretest administration because of the high number of invalid profiles generated by the students in grade three and below. The measures used were:

1. Teacher's Report Form of the Achenbach Child Behavior Checklist (CBCL).

This measure was intended to record the behavioral competencies and emotional problems of children from four to sixteen years of age. Hence, it was applicable to every child in the study. The teachers of all children involved in the investigation were responsible for completing the 118 behavior problem items that were scored according to a 3-point scale. The test was composed of 118 problem items, with one of the items including 2 supplemental spaces for additional observations not previously indicated. One of these spaces allowed the user to indicate additional physical problems, while the other was provided to identify any other problems not described by the CBCL. It was therefore possible to obtain scores ranging from 0 to 240 points. The CBCL scores were used as a global indicator of behavior for each child vis-a-vis computing a score from the behavior problem items.

Achenbach and Edelbrock (1986) computed stability coefficients for the 118 behavior problem items on teacher's rankings of 21 six to eleven year-old boys at the middle of the school year, 2 months later, and 4 months later. They obtained a median correlation of .74 for the 2 month interval, and a median correlation of .68 for the 4 month interval. Boyle and Jones (1985) observed that the CBCL represents the finest of a very small number of measures available with respect to reliability, validity, applicability, and procedural adequacy.

The manual accompanying the CBCL (Achenbach & Edelbrock, 1986) also permitted scoring the 118 items according to eight identified syndromes or behavior

problem scales in addition to a general "other problems" category. This was not found to be practical for Project Cope as classifying an already limited sample of subjects into multiple discrete clusters would complicate overall analysis. Furthermore, classification of subjects according to T scores contrived by Achenbach and Edelbrock (1983) indicating clinical significance was also omitted.

Pretest administration of the CBCL occurred 2 months after the inception of the school year. This was in accord with the recommended minimum time frame stipulated by the authors of the measure allowing users to become acquainted with the intended subjects (Achenbach & Edelbrock, 1986). The posttest administration of the CBCL was held during the third week of April (the second week of April was a holiday period for the children). Only subjects with complete pretest and posttest CBCL information were used for data analysis of this measure.

2. Absences (ABS).

This measure was intended to evaluate the possible relationship between frequency of absences and the high risk student. It presupposed an association between the problems of high risk individuals and absence rate. Because the number of days absent were reported on report cards, it was only examined for the first and fourth quarters of the school year. This included the inception and end of the intervention period. However, kindergartners were excluded from this analysis because their absences were reported on a semiannual school year basis. Only subjects with complete pretest and posttest absence information were used for the ABS data analysis.

3. Grade Point Average (GPA).

This measure was intended to assess the possible effects of intervention on scholastic achievement, and presupposed a relationship between high risk children and deficient report card evaluations. It also provided an appraisal of in-class behavior besides academic concerns. This was possible because the report card is comprised of elements entailing in-class behavioral appraisals, as well as academic concerns.

Similar to absences, GPA was monitored for the first and fourth quarters of the school year. Unfortunately, because the report cards for kindergartners were very different in format from the other grade levels, they were also excluded from this analysis.

The calculation of GPA was made on a four point scale. A score of 4.0 was credited to an "excellent" rating, 3.0 to a "satisfactory progress" rating, 2.0 to a "needs more work" rating, and 1.0 to an "unsatisfactory" rating. Only subjects with complete pretest and posttest academic marks were used for the GPA data analysis.

All grade point averages were calculated on whatever items teachers endorsed. It was not possible to precisely standardize the calculations of grades simply because each grade level used a report card coordinated to academic and behavioral performance believed to be developmentally appropriate for that grade level. Overall categories were similar, such as mathematics, social studies, language arts, etc. However, the specific items within each category differed according to grade level.

As previously indicated, grade point averages offered an opportunity to study the academic and behavioral achievements of the children. Hence, for the purposes of this study, each student had two GPA calculations. One reflected only behavioral elements on the report card, while the other represented academic constituents.

4. Metropolitan Achievement Test (MAT).

This measure was intended to indicate the possible effects of intervention on scholastic achievement. It presupposed a linkage between the problems of high risk individuals and deficient standardized test scores. Unfortunately, because kindergartners were administered a different standardized test battery (Kindergarten Proficiency Test) from grades one through four (MAT) they were again excluded from the study for this measure. And because the administration of the MAT occurs annually in April of the school year, there were no pretest results for first graders, so they were also excluded from this analysis. Only subjects with complete pretest and posttest MAT information were used for data analysis of this measure. Hence, a pretest-posttest examination of MAT results was only conducted on second through fourth graders; pretest scores were obtained from April of the previous school year, with posttest scores derived from April of the current school year or grade level.

The reported MAT scores represented national percentile rank scores for the respective grade level based on the "Total Basic Battery". This in turn reflected a composite figure derived from the total math, total reading, and total language components. Unlike the "Total Composite Battery" which is both more comprehensive and contingent to grade level, the components comprising data for the Total Basic Battery were identical for grades one through four.

The technical manual associated with the MAT (Prescott, Balow, Hogan, & Farr, 1988) reported KR-20 (Kuder-Richardson Formula #20) coefficients of .95, .97, .97, and .98, for the first, second, third, and fourth grades, respectively. The SE_m was 5.1, 6.2, 6.1, and 6.4, for the first, second, third, and fourth graders, respectively. Criterion-related validity coefficients between the MAT and the Otis-Lennon School Ability Test was .66, .68, .71, and .86, for the first, second, third, and fourth graders, respectively.

5. Coopersmith Self-esteem Inventory.

This measure was developed to gauge evaluative attitudes toward the self. It was formulated in conjunction with Coopersmith's (1967) research on the construct of self-esteem in children. Before abandoning continued use as a measure, this study applied the School Form, consisting of 58 items.

With respect to reliability of the School Form on a test-retest basis, Fullerton (cited in Coopersmith, 1987) administered the Inventory to 104 fifth and sixth graders on a 12 month interval, and reported a stability coefficient of .64.

Therapeutic Plan

Stage 1. Two weeks prior to inception of the minimum 17 week session.

This served as a referral period for teachers. It should be noted that this two week period was predated by approximately five weeks of classes, so that the teachers had a period of time with which they could familiarize themselves with their pupils.

Stage 2. Sessions one through three - acquaintance period.

The high school students used this time to become acquainted with their respective elementary school students, for their children to become comfortable with them, and to complete the Coopersmith self-esteem measurement. Explicit intervention was not promoted during this time. Teachers were also requested to complete the Teacher's Report Form of the Achenbach Child Behavioral Checklists on program participants; forms were distributed such that two months had elapsed since the commencement of the school year.

Stage 3. Sessions six and seven - therapeutic plan development.

The high school students met with teachers of their respective children and devised a therapeutic plan with regard to the referral problem in question. The plans were reviewed by both teachers of the respective students and the investigator of this study. During this time the acquaintance period was continued along with preliminary interventions devised by the high school students according to the original referral forms completed by the teachers.

The treatment plans were composed of behavioral and cognitive-behavior formats. The behavioral programs primarily consisted of positive reinforcement schemes whereby the children received rewards such as food and verbal praise for appropriate actions, or privileges to play time. Cognitive-behavior formats included aspects of the behavioral program, as well as attempts to restructure thought and/or a mental recognition of process and outcome.

Stage 4. Sessions eight through seventeen - minimum therapeutic intervention period.

(The high school students were encouraged to continue with the interventions after completion of this minimum time period.)

Intervention according to devised plans continued with periodic reviews. The final week of sessions were conducted in the first week of April, 1990. The high school students were instructed to focus their last two sessions with each client for the primary purpose of termination. During the first meeting, the high school students introduced the subject of termination, and how the children felt about that eventuality. Further exploration of the elementary school children's feelings toward termination, exchanges of small tokens of friendship (poems, drawings, etc.) created during the intervention period, and farewells were reserved for the last session.

RESULTS

The 79 referred high risk students represented 15.7% of the general Blaine Elementary school population of 503 present when the teacher referrals were solicited. Participation by teachers in the study amounted to 68% of the school's total staff. The attrition rate for subjects differed according to the time span of the assessment instrument (see Table 1).

Insert Table 1 about here

Intervention Sessions

Of 35 subjects in the treatment cohort (RTX), 3 were deleted from analysis since they were nonreferred subjects included primarily to counter the possibility of negative labeling that may have been ascribed to the remaining high risk referrals. Another 3 children were lost as a result of family relocations. One of the 3 losses occurred early in the study, thereby allowing replacement by a student from the referred waitlist such that the minimum 17 sessions were fulfilled. This left a final total of 30 referred students that received the minimum of 17 intervention sessions. The actual mean number of sessions for the 30 children was 19.3 (SD = .84).

The therapeutic treatment plans devised for weeks eight through seventeen (and beyond), consisted of 23 behavioral programs, and 7 cognitive-behavior regimens. The

cognitive-behavior programs were used for children in the second, third, and fourth grades. More specifically, the basic framework of these interventions were as follows:

Behavioral protocol - Seventeen of the children were subjected to this protocol to reduce the frequency of their negatively perceived conduct. Contracts between the high school students and their subjects were formulated. Rewards were provided with respect to improvement in behavior. These rewards included earning access to play time, earning credits to obtain toys, food treats, "badges" of accomplishment (such as stars or check marks on a goal table), and verbal compliments.

The remaining six children were referred primarily because of socialization difficulties. It must be noted that this group consisted of 4 kindergartners, 1 first grader, and 1 second grader. All of these children were encouraged to participate in appropriate social transactions with others, especially their assigned high school students. Various intervention methods were used, ranging from role playing and play acting (dolls and puppets), to "natural" interactions with their assigned high school students in various situations. Contractual rewards entailing food treats, earning credits to obtain toys, "badges" of accomplishment, and verbal compliments were provided.

Cognitive-behavior protocol - Seven children were subjected to this general type of intervention. All of the children were referred because of prominent conduct-behavioral difficulties, but five also manifested socialization difficulties of a less pronounced nature. Furthermore, referrals by the respective teachers indicated that all seven manifested varying levels of diminished self-esteem.

The intervention protocol focused on eradicating the children's negative self-cognitions for positive ones. Contractual rewards were provided when

positive self-statements were made. However, negative self-statements resulted in the withholding of rewards, as well as an immediate correction by the high school student to the contrary. There were three types of rewards used. These consisted of earning access to play time, "badges" of accomplishment, and verbal compliments.

Additionally, the intervention plans of the seven children required their participation in varying situations. These situations primarily involved role playing and "natural" interactions with their assigned high school students. But, modeling of appropriate social interactions and displays of positive self-esteem on the part of high school students were also extensively used.

Assessment Data

Data from the four assessment measures were initially subjected to a 3 x 2 (Group x Time Period) analysis of variance (ANOVA) to determine the presence of overall main effects exerted by the grouping and time elements, and the possible interaction between them. Upon an indication of significance, two-group t tests were applied for a priori comparisons between groups. A 1 x 2 (Group x Time Period) ANOVA was also employed to evaluate the within group changes due to time.

CBCL Data. Descriptive analyses (means and standard deviation) were derived for each group (see Table 2).

Insert Table 2 about here

A 3 x 2 (Group x Time Period) ANOVA was conducted for the preCBCL and postCBCL data. The ANOVA revealed significant main effects for group, $F(2, 139) = 37.90, p < .05$, and time, $F(1, 139) = 7.14, p < .05$, and significant interaction effects between group and time, $F(2, 139) = 19.47, p < .05$.

Planned two-group t -tests were conducted to compare the groups within the preCBCL condition and groups within the postCBCL condition. With respect to the preCBCL groups, the NR group indicated scores below both the RTX, $t(40.2) = -7.21, p < .05$; with the Satterthwaite (1946) correction for degrees of freedom¹, and RNTX groups $t(60.5) = -8.11, p < .05$. There was no apparent difference between the referred groups.

The results of the t -test analyses for the postCBCL groups indicated the NR group displayed scores below both the RTX group, $t(41.1) = -3.36, p < .05$, and the RNTX group, $t(49.5) = -5.93, p < .05$, while the RTX group was lower than the RNTX group, $t(69) = -2.58, p < .05$.

The results of the within groups ANOVA revealed only the pretest and posttest scores for RTX effectively changed over time, $F(1, 29) = 57.97, p < .05$ (see Figure 1).

¹ The Satterthwaite correction for degrees of freedom accounts for heteroscedasticity as revealed by Levene's F (for variances). It was used for all t -tests.

Insert Figure 1 about here

ABS Data. Descriptive analyses were derived for each group concerning mean and standard deviation for the number of days absent (see Table 3).

Insert Table 3 about here

A 3 x 2 (Group x Time Period) ANOVA was conducted for the preABS and postABS data. The ANOVA revealed a significant main effect for time, $F(1, 103) = 4.12$, $p < .05$.

Planned two-group t -tests were conducted to compare the groups within the preABS condition and groups within the postABS condition. Neither conditions indicated significant differences.

The results of the within groups ANOVA revealed no effective change over time (see Figure 2).

Insert Figure 2 about here

GPA Data. Identical analyses were performed for preGPA and postGPA scores derived as a result of separating academic and behavioral components. The ANOVA concerning only elements constituting academic GPA revealed significant main effects for group, $F(2, 103) = 16.60, p < .05$, and time, $F(1, 103) = 31.08, p < .05$ (see Table 4).

Insert Table 4 about here

Two-group t -tests for only the academic elements were conducted to compare the groups within the preGPA condition and groups within the postGPA condition. With respect to the preGPA groups, the NR group indicated scores above both the RTX, $t(75) = 3.52, p < .05$, and RNTX cohorts, $t(83) = 5.40, p < .05$. There was no apparent difference between the referred groups.

The results of the t -test analyses for the postGPA groups indicated the NR group was higher than the RNTX cohort, $t(83) = 5.18, p < .05$. However, the NR and RTX comparison became ambiguous, in addition to no apparent difference between referred groups.

The results of the within groups ANOVA revealed the pretest and posttest scores effectively changed over time for NR, $F(1, 55) = 13.74, p < .05$, RTX, $F(1, 20) = 11.66, p < .05$, and RNTX, $F(1, 28) = 7.22, p < .05$ (see Figure 3).

Insert Figure 3 about here

The ANOVA concerning only elements constituting behavioral GPA revealed significant main effects for group, $F(2, 103) = 17.87, p < .05$, time, $F(1, 103) = 27.21, p < .05$, and the interaction between group and time, $F(2, 103) = 4.57, p < .05$ (see Table 5).

Insert Table 5 about here

Two-group t -tests for only the behavioral elements were conducted to compare the groups within the preGPA condition and groups within the postGPA condition. With respect to the preGPA groups, the NR group indicated scores above both the RTX, $t(75) = 3.86, p < .05$, and RNTX cohorts, $t(83) = 4.42, p < .05$. There was no apparent difference between the referred groups.

The results of the t -test analyses for the postGPA groups indicated the NR subjects continued to display scores above RNTX, $t(83) = 5.61, p < .05$, while the comparison between NR and RTX became ambiguous. But, a new situation arose when RTX displayed scores above RNTX, $t(48) = 3.26, p < .05$.

The results of the within groups ANOVA revealed only the pretest and posttest scores for NR, $F(1,55) = 9.79, p < .05$, and RTX, $F(1,20) = 31.89, p < .05$, effectively changed over time (see Figure 4).

Insert Figure 4 about here

MATS Data. Descriptive analyses were derived for each group concerning mean and standard deviation of national percentile rank scores (see Table 6).

Insert Table 6 about here

A 3 x 2 (Group x Time Period) ANOVA was conducted for the preMATS and postMATS data. The ANOVA revealed a significant main effect for group, $F(2, 87) = 15.11$, $p < .05$.

Planned two-group t -tests were conducted to compare the groups within the preMATS condition and groups within the postMATS condition. With respect to the preMATS groups, the NR group indicated scores above both the RTX, $t(62) = 4.18$, $p < .05$, and RNTX groups, $t(69) = 5.05$, $p < .05$. There was no apparent difference between the referred groups.

The results of the t -test analyses for the postMATS groups indicated the NR group continued to display scores above both the RTX, $t(62) = 3.50$, $p < .05$, and RNTX groups, $t(69) = 4.82$, $p < .05$. There continued to be no apparent difference between the referred groups.

The results of the within groups ANOVA revealed no effective change over time (see Figure 5).

Insert Figure 5 about here

Coopersmith Self-esteem Inventory Data. The results indicated referred students from kindergarten through grade two were unable to fully comprehend the test items, therefore yielding invalid profiles. This coincides with the recommendation that the school form be limited to children from eight through fifteen years of age (Coopersmith, 1987). However, only 18 of the remaining 35 referred third and fourth graders yielded valid profiles. With respect to nonreferred students, although administration of the inventory to all members of the group was incomplete, the 23 tested kindergartners and first graders yielded invalid results. Only 1 of 12 tested second graders furnished a valid profile, while 7 of 15 third and fourth graders provided legitimate test results. Because of the limited numbers for statistical analysis, this measure was abandoned.

DISCUSSION

The results of Project Cope provisionally supported the prediction that intervention by trained high school students with identified high risk elementary school children offer significant and positive benefits.

The expected pre-period measurement data were hypothesized to indicate the nonreferred group (NR) as being distinct from both referred groups (TX and RNTX), and that neither referred groups differed from each other. The rationale for this belief was that teachers were anticipated to refer only those students comprising the extreme segment of the total student population.

Achenbach Child Behavior Checklist scores for both referred groups were not only equivalent to each other, but higher than the nonreferred cohort. Metropolitan Achievement Test scores also disclosed the nonreferred group as possessing higher test scores, while the referred groups were at a lower and comparatively similar level.

The outcome of intervention revealed by the post-period assessment measures suggested a significant change for the RTX group, but not for the RNTX and NR groups. The post-period characteristics of the latter two groups were expected to impart measurement data similar to the pre-period. This was observed in data provided by the Achenbach Child Behavior Checklist and the Metropolitan Achievement Test. Change by the RTX subjects anticipated to occur in the direction of the NR cohort, were observed in results from the Achenbach Child Behavior Checklist.

Child Behavioral Checklist Measure

The similarity of the mean preCBCL scores for both referred groups disclosed the effects of randomized selection for the RTX group was representative, and provided behavioral substantiation of the hypothesized difference between referred and nonreferred subjects. Furthermore, mean scores for the NR and RNTX groups at the post-period indicated little change from the pre-period measures. This suggested that as far as behavior was concerned, there was essentially no improvement accrued from the developmental passage of time. Moreover, the lack of posttest improvement by the RNTX group provided refutation toward the significant presence of a regression to the mean phenomenon occurring for treated subjects.

The noticeable difference occurred for the RTX cohort. The decrease in the CBCL average at the post-period evaluation inferred a therapeutic benefit arising out of intervention, and supported the hypothesis that treated subjects would derive benefits from intervention. However, this change appeared to be of an intermediary nature since the RTX subjects exhibited mean CBCL scores lying somewhat between the NR and RNTX groups, though with a slight bias toward the NR subjects. Further improvement of RTX subject scores toward that of the NR cohort may be indicative of the need for a more extended intervention period. Or the RTX data may also be influenced by differing degrees of therapeutic efficacy. Although the RTX sample size was rather nominal at 30 subjects, thereby precluding a comprehensive analysis of intervention methods, 11 RTX group members furnished postCBCL scores at or below the mean for the NR cohort. This was in contrast to 5 out of 41 RNTX subjects having postCBCL scores at or below the mean for the NR cohort.

Conversely, only 2 out of the 30 treated subjects had postCBCL figures exceeding their pre-period CBCL scores as opposed to 14 out of 41 for the RNTX group. This failure to change the behavior of the two RTX subjects was probably a result of unsuitable treatment schemes devised on their behalf. Both children were treated with a cognitive-behavior approach. Reinforcement for appropriate thoughts and behaviors were confined to positive commendations by the high school student instead of more tangible rewards (the other five subjects receiving the cognitive behavior approach received combinations of physical and verbal reinforcement). Hence, the lack of therapeutic progress may have been caused by a myriad of factors, such as an inappropriate intervention approach, an inadequate reward system, inconsistencies in the treatment administration, etc.

Absence Measure

It was expected that the preABS scores would indicate a difference between the NR and referred groups. The postABS scores were hypothesized to show the RTX group approaching or even approximating those of the NR cohort. Both the NR and RNTX postABS figures were anticipated to remain similar to their respective preABS numbers.

In actuality, the post-period scores for all three groups actually increased over their respective pre-period assessments. And there was no indication that the preABS and postABS scores evinced the hypothesized differences between the two referral and single nonreferred groups. Data for the first and fourth quarters essentially showed the 3 groups as being similar to each other. Hence, this measure was not a proficient measure for indicating differences between NR, RTX, and RNTX groups.

An explanation for this outcome was not easily apparent. It may very well be that absence rate is not contingent to behavioral change. Or the association may be "hidden"

by other factors more robust. For example, a plausible reason for the difference in pre-period and post-period absence rates may be ascribed to the more inclement weather conditions that existed during the fourth quarter as opposed to the first quarter. There appeared to be more elementary school children beleaguered by colds and influenza at the end of the school's calendar year. The extent of this one situation may have been sufficient to cause an overall rise in absence rates for the elementary school children.

Grade Point Average Measure

Because it was possible to separate the contribution of academic versus behavioral elements in the report card, the results of such an undertaking indicated interesting similarities and contrasts. First of all, the preGPA data derived from academic items in addition to those calculated from behavioral components, indicated that the randomized selection of the RTX cohort was representative of the entire sample of referred subjects. Secondly, the NR subjects possessed higher academic ratings and displayed more exemplary behavior when compared to the RTX and RNTX subjects. However, differences in group postGPA scores was evident between those calculated from only academic items versus those from only behavior components. The results of postGPA scores calculated from only academic items indicated that NR remained different from RNTX, RTX remained indistinguishable from RNTX, while the difference between NR and RTX became ambiguous. But the postGPA results calculated on behavioral items showed an improvement of RTX subjects, such that they could be distinguished from the RNTX cohort. This provides support to the belief that academic changes associated with intervention may require more time to evolve, as opposed to behavioral changes. However, this assumption may remain unclear without more research, since the within-

group analyses indicated that all three cohorts actually improved their academically derived grade point averages over time.

The postGPA data derived from only behavioral items was not without its own complication. This predicament was caused by the expectation that it should have provided similar results to the postCBCL findings, especially since the elemental composition of the CBCL is behavioral in nature. Additionally, the within-group analyses for grade point averages derived from only behavioral components provided more ambiguity like that found for the pre-period within-group analyses for only academic items. Results indicated RTX subjects were unable to improve upon their scores as seen in the postCBCL scores. It was very probable that the inability of behavioral postGPA scores to duplicate the results obtained for the postCBCL assessment, may have been a consequence of the lack of precision on the part of the measure. The CBCL consisted of 118 items, whereas behavioral items on the report cards amounted to only 11 or 12 items. The apparent deficiency in discerning capability with respect to report cards proposes an ostensible explanation for not definitively articulating behavioral problems. Hence, report cards probably depicted only a crude estimation of behavioral assessment, with its principal benefit as an academic assessment tool.

Metropolitan Achievement Test Measure

This measure offered an assessment based solely on academic characteristics. It also provided a level of standardization not offered by report card grade point averages since schools may use diverse reporting formats (Cowen et al., 1975). (Moreover, as previously mentioned, there was even some variability between grade levels as Blaine

Elementary employs report cards that assess skills believed to be developmentally appropriate.)

The similarity of the mean preMATS scores for both referred groups again indicated that randomized selection of the RTX group from the aggregate referred sample was sufficiently representative. It also offered supplemental substantiation of the hypothesized difference between referred and nonreferred cohorts.

However, postMATS results did not complement the postGPA findings from academic elements. Pre-period and post-period scores not only remained similar, but the NR group continued to remain higher than RTX scores. Contrasting academic GPA with the MATS scores indicated that the direction of preGPA findings were similar to preMATS results. The nonreferred group continued to differ from the referred groups, which in turn, could not be distinguished from each other. In contrast, while the postMATS difference between NR and RNTX persisted, the postGPA data did not correspond to the postMATS difference between NR and RTX. This discrepancy may have been a complication borne out of the attempt to compare two measures believed similar, that in actuality contained at least some disparate elements. As previously mentioned, the MATS score used for this investigation was based only on the total math, total reading, and total language components, whereas the academic grade point averages included other factors such as science, social studies, penmanship, etc. These differences may have sufficiently disqualified equivalent comparisons between the instruments. Furthermore, the sample size for the GPA and MATS measures were diminished when compared to the CBCL instrument. (For example, 21 subjects, 19 subjects, and 30 subjects in the RTX group, respectively.) The smaller sample sizes may have been very influential in diminishing the power of statistical analysis.

Perhaps most important of all, as initially speculated for GPA, academic alterations arising from intervention may have been sluggish and/or more difficult to affect than behavioral changes. Indeed, it is possible that academic adjustment was predicated by the extent and timing of behavioral change.

In addition to those comments already offered, there are other major factors which may have influenced the study results. Teachers may have inadvertently affected the investigation in two prominent ways. First of all, they may have provided extra attention to students involved with the study. Although teachers had been requested not to initiate anything out of the ordinary with Project Cope students, this may have been more easily said than done. Consequently, in spite of the fact that constant reminders may have produced teacher created effects as much as not reminding teachers to "perform in the classroom normally", they were still provided in the hope that the possibility of unplanned and extraordinary teacher influences was held to a minimum.

Secondly, because teachers were not blind to those students receiving treatment, that procedural characteristic may have resulted in biased evaluations on the Achenbach Child Behavior Checklist and report cards. But unless the two activities of referral and assessment could have been performed by different individuals, experimental blindness was not a viable prospect. The most that could have been done was to introduce experimental blindness for the referred cohort. This would be achieved by having a randomly selected number of referred subjects meet with the high school students in a presumably nontherapeutic relationship (for example, assistance in course work).

Inclusion of such an attention placebo control group would have also yielded data on whether the provision of "plain old" attention results in therapeutic benefits. This should subsequently disclose whether nonspecific treatment effects participated in the current

results. (If this course of action were undertaken, it would also necessitate the accompaniment of another control group consisting of nonreferred subjects receiving attention.)

Another alternative to relying on the exclusive use of teacher's providing behavioral evaluations may be to incorporate assessments by the high school students as a further verification step. Although exposure to their respective subjects is not analogous to that of the teachers, thereby invalidating equivalent comparisons, especially with respect to the procedural requirements of the Achenbach Child Behavior Checklist, they do represent a valuable appraisal resource. For example, comparing outcomes of the intervention protocols to the Achenbach Child Behavioral Checklist and behavioral grade point average offers another possible method of validation.

Outside forces such as the home environment may have differentially impacted upon the study results. A possible aftermath of this is that the efficacy of therapeutic intervention was diminished or nullified. Future efforts may be able to assess these prospects.

As alluded to previously, the rather small sample size of the RTX, and to a lesser extent, the RNTX group, may not have provided an authentic representation of the results for the population in question. Compounded by differential attrition, crucial power for deriving robust statistical conclusions may have been lost. Hopefully, future efforts may expand upon this initial data base, and likewise provide data concerning the fourth cohort that was not researched in this study due to their extremely low sample size - the referred treated cohort.

Gender represents another possible factor. An examination of gender effects was not a planned aspect of this study. However, it is possible that the gender of the elementary school subject with respect to the gender of the high school student differentially influenced therapeutic efficacy.

The age of the subjects may also be important. This study compared referred versus nonreferred students by grade levels rather than age because of the blocked selection procedure of the nonreferred group. A primary reason for this decision was due to the desire to evaluate students by an educational based yardstick of development. While all of the referred students (and nonreferred) were promoted to the next grade level at the end of the school year, there may still have been a vital effect as a result of age variation.

Lastly, the effects of intervention may be transitory. Efficacy of intervention may depend on the therapeutic scheme, which in turn raises further prominent issues. The type of intervention may not have been the most effective approach for the referral. Only behavioral and cognitive-behavior procedures were used. It is possible that another approach would have yielded superior results.

The degree of treatment efficacy may have even been affected by the different skill/capability levels of the high school students. A longitudinal study is critical for complete evaluation purposes. This however, raises the additional problem of an ever diminishing sample size as a result of attrition.

Each of the above concerns represent prominent factors that could have individually impacted upon the experimental results, and are by no means exhaustive of the potential variety of intrusions upon the study. It is also possible that they may have interacted in combinations that are exceedingly difficult to unravel, much less detect.

However, some were beyond the planned scope and control of this study, while others could only be confronted when the situation arose, or prevented through constant vigilance.

Nevertheless, it appears that the effects of intervention by high school students on referred high risk elementary school students were sufficiently robust with respect to behavior changes. The results also suggested that behavioral adjustments require less time to effect than academic changes.

These conclusions portend substantial implications. A continuation of Project Cope for referred treatment subjects would be expected to reveal further improvements; the Achenbach Child Behavior scores should continue their descent, while behavioral and academic grade point averages and Metropolitan Achievement Test scores increase. Academic GPA and MATS scores may particularly reflect sizable increases if the postulation that academic change requires a lengthier period of intervention was true.

The addition of subject numbers may also enable an examination of mediation efficacy between behavioral and cognitive-behavior intervention schemes. Although not addressed in this study, it appeared that behavioral programs produced more efficacious results with young children over cognitive-behavior schemes. This may have either been a consequence of their more relative ease of implementation, or reflected the unreadiness of children for cognitive interventions.

Likewise, the type of intervention may have very well indicated competency differences of grade levels as a consequence of subject maturity, or as previously alluded to, according to the varying mediation proficiencies of the high school students. The former situation may best be evaluated via an examination of age based criteria, with the outcome indicating that programs utilizing cognitive schemes produce incremental change and/or a more enduring influence because of increasing mental capabilities of the child.

Since the mediation skills of the high school students may have varied substantially, inconsistent effects as a result of varying intervention proficiencies may be attenuated by an increase in the training period. This process could also incorporate a test indicating their respective intervention abilities. The final week or weeks of an extended training period could be spent on eliminating mediation weaknesses such that each high school student would then possess a minimal level of proficiency. This should then offer effects in only one direction for the behavioral and academic measures on the referred treatment group subjects: the Achenbach Child Behavioral Checklist scores should decline, while behavioral and academic grade point averages and Metropolitan Achievement Test scores increase.

The implications discussed to this point are significant. But there is a final one that may be the most important. This is the proposition that high risk elementary school children could be identified by teachers, and that intervention by trained nonprofessionals may succeed in attenuating the continuation of, or the development of more serious behavioral and perhaps, academic difficulties. Pursuing such a preventative approach offers the additional advantage of possibly reducing what may later be a greater cost to society of more serious problems that could have been "corrected" earlier. At the very least, it represents an appropriate response from a "gentler and kinder" civilization.

Project Cope appeared to represent an effective means of mediating behavioral problems in high risk elementary school students. In spite of the current lack of data supporting significant academic change, there was still an indication that the referred treatment subjects experienced some improvement on this dimension.

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APPENDIX A

Referral Request Form to Teachers

Project Cope Referral Form

Please use this form to refer any child that you believe is manifesting behavioral-conduct problems and/or socialization inadequacies interfering with academic and social progress, low academic achievement as a probable result of psychological problems, or combinations thereof.

Name of Child _____ Grade _____

Teacher's Name _____

Reason for Referral:

APPENDIX B

Letter for Parental Consent to Participation of Referred Children

Date

Dear Parents,

This year we are undertaking a research project in conjunction with Simon Fraser University. We intend to measure what effect a cross-age counselor has on elementary school children.

The way the project works is that we have seven high school students in grades eleven and twelve who will act as a type of big brother/big sister to children in grades K-4. I have been working with these high school students since the beginning of the school year and feel that they are excellent models and will work very well with young children. The high school students will teach appropriate life skills and how to get along in our elementary school environment.

We are researching across the entire spectrum of students here at the elementary school. We have selected students at random; your child is one of those we have initially selected for this project. Here is how the system works, your youngster will be involved with one of the high school students approximately thirty minutes one day per week for the next several months. We intend to meet the last part of the day in order to minimize the loss of academic time to the children. We are looking for the amount of change that has

occurred as a result of the elementary school children having a close association with a young adult.

The study is strictly voluntary. You may withdraw your child now or at any time during the project if you so desire. If you have any concern with what is happening here at school please give me a call or stop by any time. You may also contact Dr. Roger Blackman, Chairman, Department of Psychology, Simon Fraser University, Burnaby, British Columbia.

We would be happy to share the results of this study with you if you should wish it.

Sincerely yours,

E. Warren Aller
Principal
Blaine Elementary School

APPENDIX C

Letter for Parental Consent to Participation of Nonreferred Children

Date

Dear Parents,

This year we are undertaking a research project in conjunction with Simon Fraser University. We are measuring what effect a cross-age counselor has on elementary school children. Some children here at school have been selected at random to work with several high school juniors and seniors in a social skills program. Your child is not one of them; however, we would like to compare his/her growth with those children who are dealing with the young adults on a regular basis. To do this we will administer a self-esteem inventory.

This program is strictly voluntary. If you wish, you may withdraw your child now or at any time during the project this year. If you have concerns with this, please give me a call or stop by at any time. You may also contact Dr. Roger Blackman, Chairman, Department of Psychology, Simon Fraser University, Burnaby, British Columbia, if you so desire.

Sincerely yours,

E. Warren Aller
Principal
Blaine Elementary School

TABLE 1

Mean Attrition Rates Per Measure

	NR	RTX	RNTX	Combined Referred (RTX + RNTX)/2
CBCL Data*	5.3%	6.3%	4.7%	5.3%
ABS Data*	25.3%	34.4%	32.6%	33.3%
GPA Data*	25.3%	34.4%	32.6%	33.3%
MATS Data**	40.0%	40.6%	39.5%	40.0%

* These figures include only those subjects missing posttest scores.

** These figures include those subjects who are missing pretest scores with subjects who are missing posttest scores.

TABLE 2

Group Means and Standard Deviations for Child Behavior Checklist Data

	NR Subjects (N = 71)		RTX Subjects (N = 30)		RNTX Subjects (N = 41)	
	Pre	Post	Pre	Post	Pre	Post
<u>M</u>	10.24	10.62	39.20	23.80	38.93	40.05
<u>SD</u>	13.38	13.50	20.20	19.59	20.25	30.07

TABLE 3

Group Means and Standard Deviations for Absence Data

	NR Subjects (N = 56)		RTX Subjects (N = 21)		RNTX Subjects (N = 29)	
	Pre	Post	Pre	Post	Pre	Post
<u>M</u>	2.04	2.68	1.38	2.76	1.90	2.59
<u>SD</u>	4.16	2.88	2.06	2.95	2.16	3.20

TABLE 4

Group Means and Standard Deviations for Academic Elements of Grade
Point Average Data

	NR Subjects (N = 56)		RTX Subjects (N = 21)		RNTX Subjects (N = 29)	
	Pre	Post	Pre	Post	Pre	Post
<u>M</u>	3.46	3.57	3.20	3.39	3.12	3.23
<u>SD</u>	.26	.30	.34	.33	.29	.27

TABLE 5

Group Means and Standard Deviations for Behavioral Elements of Grade
Point Average Data

	NR Subjects (N = 56)		RTX Subjects (N = 21)		RNTX Subjects (N = 29)	
	Pre	Post	Pre	Post	Pre	Post
<u>M</u>	3.38	3.53	3.00	3.36	2.97	3.04
<u>SD</u>	.41	.39	.32	.35	.39	.35

TABLE 6

Group Means and Standard Deviations for
Metropolitan Achievement Test Data

	NR Subjects (N = 56)		RTX Subjects (N = 21)		RNTX Subjects (N = 29)	
	Pre	Post	Pre	Post	Pre	Post
<u>M</u>	71.81	70.79	37.37	43.27	36.16	38.02
<u>SD</u>	29.92	28.33	30.65	29.61	26.27	26.26

FIGURE 1

Child Behavior Checklist Mean Group Data

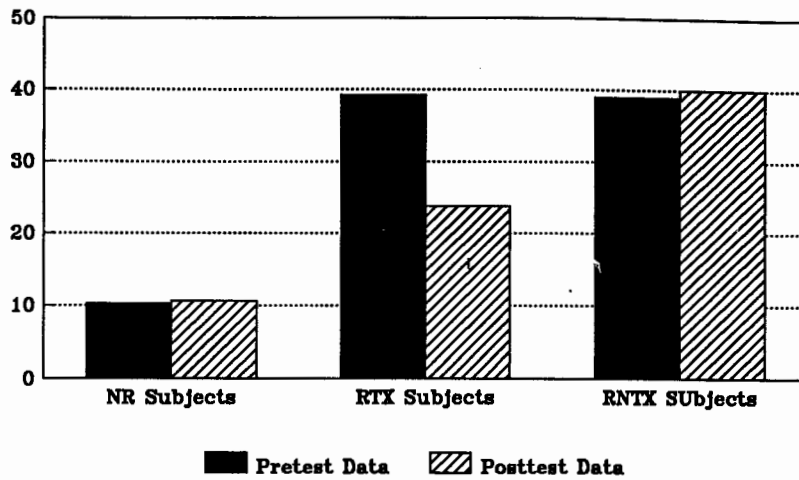


FIGURE 2

Absences

Mean Group Data

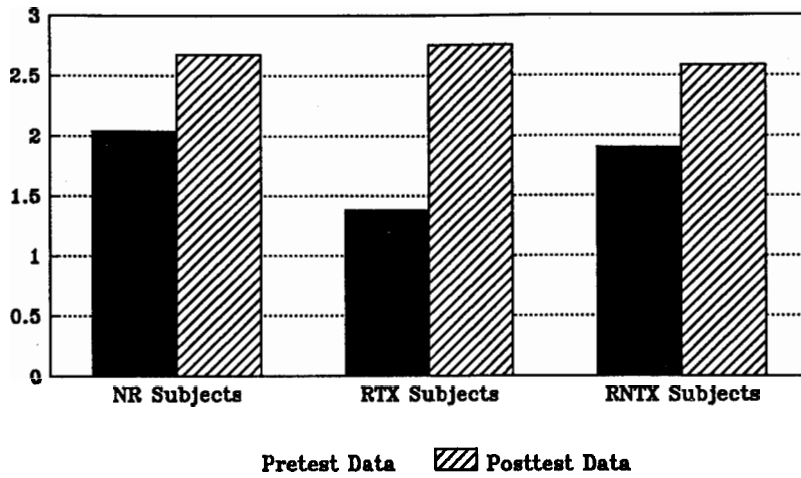


FIGURE 3

Academic GPA Mean Group Data

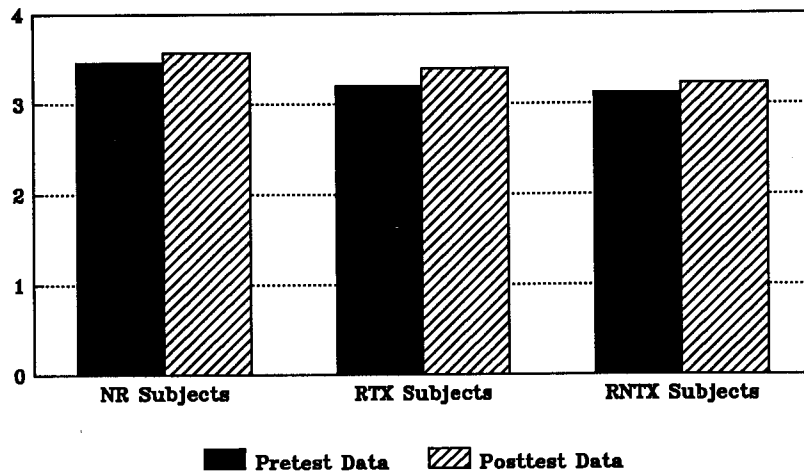


FIGURE 4

Behavioral GPA Mean Group Data

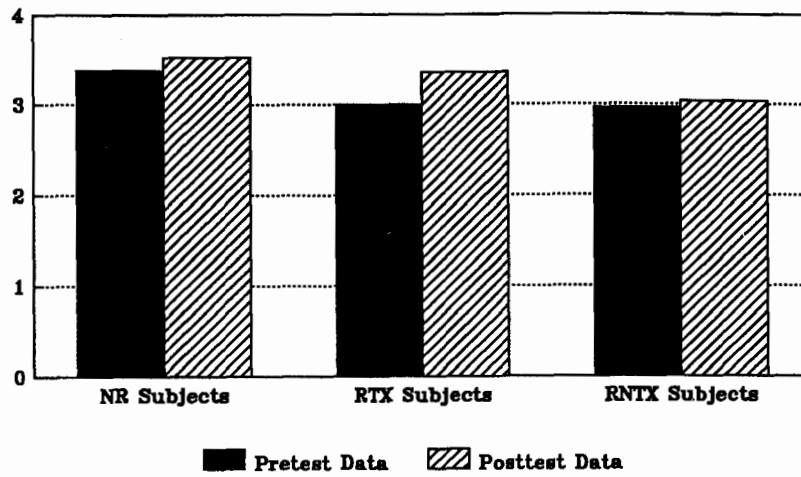


FIGURE 5

MAT
Mean Group Data

