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Gender Differences in Deviancy Training in a Clinical Setting

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Running head: GENDER DIFFERENCES IN DEVIANCY TRAINING

Gender Differences in Deviancy Training in a Clinical Setting

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Abstract

Delinquent and aggressive youth are often aggregated in intervention programs for treatment. Aggregation is cost effective and efficient, yet recent research has suggested that youth who are treated together for antisocial behavior may experience negative effects through an informal process called deviancy training. Deviancy training occurs when peers reinforce each other for delinquent or aggressive talk or behavior, and as a result, problem behavior increases. The majority of research on deviancy training has been conducted with boys. This study examined gender differences in peer support for delinquency in a clinical setting, as well as gender differences in treatment effects of the clinical program. Results suggested that highly delinquent girls may be more susceptible to deviancy training than are highly delinquent boys. Highly delinquent girls received more peer support than highly delinquent boys, and also experienced less positive change in problem behaviors. Boys who were low in delinquency seemed most susceptible to peer contagion effects, and seemed to benefit least from the treatment program. Developmental and clinical implications of these findings are discussed.

Table of Contents

List of Tables

List of Figures

List of Appendices

Gender Differences in Deviancy Training in a Clinical Setting

The environment to which a child is exposed is influential in shaping the child's cognitions and behavior. In the field of psychology, the social environment is one factor that has been examined in efforts to understand the development of aggression, delinquency, and other behavioral problems in children and adolescents. Studies have shown that exposure to violence in the community, and especially being the victim of extreme violence, can lead to perceptions of the world as very threatening, approval of violence as a suitable response, and to the development of aggressive behavior (Shahinfar, Kupersmidt, & Matza, 2005). Parenting has also been identified as an important environmental factor in the development of aggressive, antisocial, and delinquent behavior in children and adolescents (Finkenauer, Engels, & Baumeister, 2005; Heidgerken, Hughes, Cavell, & Wilson, 2004; Knutson, DeGarmo, & Reid, 2004; Mazefsky & Farrell, 2005).

Recently, though, more attention has been paid to the important role that peers play in the development of each others' behavior, including aggressive behavior. Peer groups can strongly influence a child's cognitions and behavioral patterns. One recent explanation for these powerful effects of peers on the development of aggression and aggression-supporting cognitions is a process termed deviancy training. Deviancy training is a process by which children receive subtle social support and rewards from their peers for aggressive or delinquent behavior (Dishion, Spracklen, Andrews, & Patterson, 1997). When children, especially aggressive or delinquent children, engage in deviant talk (conversations about past and future delinquent behavior) and give each other reinforcement (such as smiles or attention) for problem behaviors, such problem behavior can increase.

Until recently, there has been little questioning of the appropriateness of aggregating emotionally and behaviorally disturbed children, as well as juvenile delinquents, for treatment. Aggregation into group treatment programs makes intuitive and conceptual sense (Ladd & Mize, 1983) and is not only time and cost efficient, but has also been shown to be effective (Dennis et al., 2004; Lochman, 1992; Lochman & Lenhart, 1993). But, researchers have recently suggested that group-based interventions for delinquent, pre-delinquent, or antisocial youth may actually increase problem behavior in adolescents due to deviancy training. These researchers have suggested that the negative effects of peer-based deviancy training can last into adulthood as well (Dishion, McCord, & Poulin, 1999). Dishion and his colleagues found that the rate and duration of deviant talk is highly associated with increased delinquent behavior, and suggest that the deviant peer group, whether natural or in a treatment setting, can play a crucial role in the development of a child who exhibits antisocial behavior into one with more serious delinquent behavior.

This thesis will review recent advancements in the study of peer effects on the development of aggressive and delinquent behavior and extend this research in important ways. First, initial studies that uncovered evidence of the negative effects of friendship and sibling groups on peer behavior will be discussed. Next, recent research articulating the specific process of deviancy training will be examined. This research highlights the processes by which peers reinforce each other for aggressive or delinquent behavior, and, as a result, problem behavior increases. The next section will review recent studies examining who is most vulnerable to deviancy training, followed by a review of studies pointing to the potentially harmful long-term effects of deviancy training. This review of basic research on deviancy training will be followed by a discussion of more applied

research that has uncovered signs of deviancy training within treatment, prevention, and intervention programs that aggregate aggressive or delinquent youth. This literature review lays the groundwork for the current investigation, in which the relationship of gender to the potential for deviancy training within a clinical treatment setting is examined.

Deviant Peer Group Affiliation

Friendship groups. Although interest in the effect of peers on deviant behavior has recently grown, some research on the subject was conducted decades before the current increase in awareness of this issue. Patterson, Littman, and Bricker (1967) conducted some of the earliest research on the possibility of negative peer effects. These researchers observed assertive and aggressive behaviors, activity level, and playmates of 36 nursery school children. After observing and coding 2,583 samples of aggressive behaviors, they found evidence of children learning aggressive behavior in their play with aggressive schoolmates. This relationship occurred for both passive and moderately aggressive children. Although the small sample size of this study may interfere with the persuasiveness of the strong effects the researchers found, the study was one of the first to demonstrate the possibility of negative peer effects, and led to further investigation of this topic.

Some of the more recent work that prompted growing interest in the negative effects of peer groups was conducted in the 1990s by Dishion and his colleagues, including Patterson, who had done some of the earliest research on this topic. This research involved boys from the Oregon Youth Study (OYS), and examined how friendship styles can affect the development of child antisocial behavior in at-risk youth.

Two hundred and six boys participated in the Oregon Youth Study, which followed the development of two cohorts of fourth grade boys and their families. For each cohort, participating schools were randomly selected from the moderate-size metropolitan areas that had the ten highest delinquency rates in the Pacific Northwest. The majority of the boys included in the sample were White and from working class or unemployed two-parent households.

Numerous assessments of behavior and child characteristics within home, school, and community settings were obtained as part of the OYS. Home observations and interviews were conducted, questionnaires were completed, and videotaped assessments of problem-solving and peer interaction tasks were conducted in the home. Achievement and intelligence test scores were obtained from school, peer nominations were collected from the children and their classroom peers, and teachers completed questionnaires concerning child behavior. Furthermore, juvenile court records were obtained from the communities in which the boys lived and, if applicable, where they had previously lived (Patterson, Dishion, & Yoerger, 2000).

In one of the first studies to examine the effects of deviant peer interactions on future antisocial behavior, Dishion, Andrews, and Crosby (1995) videotaped and interviewed 186 boys participating in the OYS and their close friends, ages 13 to 14. Each participant and his friend participated in a 25-minute Peer Interaction Task, during which the boys were videotaped engaging in a range of interactions, such as planning activities and solving problems. The interactions of the boys were then scored by observers using the Peer Process Code, which is used to code behavior in terms of positive engagement, negative engagement, directives, friendship characteristics, relationship status, antisocial behavior, social skills, and other variables. The researchers

found that friendship dyads with high levels of bossiness and coercion showed negative reciprocity or an escalating pattern of negative behavior during the interaction, and an increased risk of antisocial behavior for the subjects.

Because of peer rejection, ability tracking in schools, and neighborhood demographics, the researchers suggest that antisocial children become friends with each other by default, have lower quality friendships, and as a result, engage in and are affected more by deviant talk and other forms of peer reinforcement for aggressive behavior. The origins of the friendships of antisocial boys were often a matter of convenience, and the friendship dyads were often of low quality and relatively short-lived. The researchers suggest interventions that work to increase friendship quality could be helpful in reducing antisocial/delinquent behavior, but also worry that such interventions could lead to stronger and more stable deviant peer networks, which could potentially lead to even more maladaptive results.

Other studies have revealed similar negative results of exposure to delinquent peer groups. Studies involving peer groups differ from research focusing on friendship dyads in that they examine the interactions and behaviors of multiple children in a peer group, rather than those of a pair of children. In one peer group study, Kellam, Ling, Merisca, Brown, and Ialongo (1998) found negative effects for first-grade children. Kellam and his colleagues followed 682 children from first to sixth grade, with teachers rating each of the children for aggressiveness. Aggressive first grade boys who were placed in first grade classrooms with a large number of aggressive children were at higher risk for continued and increased aggression in middle school. This effect did not exist for girls.

These peer effects have been found most often in children and adolescents, but have been noted in older age groups as well. For example, Duncan, Boisjoly, Kremer, Levy, and Eccles (2005) found examples of negative peer effects in male college students. These researchers tested for the effects of first-year roommates' drug and alcohol use and sexual behavior on the behavior of 714 (male and female) college students. Participants and their randomly-selected roommates filled out surveys about their drug and alcohol use and sexual behavior before entering college and about 2.4 years after entering college. The researchers found peer effects for men who were binge drinkers in high school and who were assigned to roommates with similar behavioral patterns in high school. Binge-drinking men in this situation drank much more in college than if they were assigned to roommates who were not binge drinkers. These effects did not exist for women, and they did not generalize to marijuana use and sexual behavior. The effects also did not apply to students who did not binge drink in high school, regardless of the characteristics of their roommate.

Deviant / aggressive siblings. Since Dishion's original studies, deviant peer effects have been found to occur in multiple settings, both with peers and at home with siblings. Stormshak, Bellanti, Bierman, Coie, Dodge, Greenberg, Lochman, and McMahon (1996) interviewed 53 aggressive 1st and 2nd grade children, their mothers, and their siblings, about the quality of their sibling relationships. The researchers found that high levels of conflict and aggression in sibling dyads were significantly correlated with teacher ratings of aggression in school. This effect was observed even after accounting for individual child aggression levels at home. Sibling conflict was also related to social problems with peers and other behavioral problems at school. In addition, supportive sibling relationships were correlated with child social competence and emotional control

at school. Sibling relationships were suggested to be especially important in high-risk samples, where children are lacking parental or peer support and could benefit or suffer from the mediating effect of sibling support and conflict.

In a later study, Stormshak, Comeau, and Shepart (2004) tested the effects of three qualities (deviancy, warmth, and conflict), as well as peer deviance, on substance use in children. At-risk and high-risk children were identified for participation in the program through Teacher Risk Perception measures. The target child and a sibling were videotaped participating in an interaction, during which they were asked to plan a party, discuss alcohol use in teenagers, and talk about an area of conflict in their relationship. Behaviors and statements were coded for deviant content, and Sibling Risk Interviews were also completed by the target children, siblings, and their parents in order to identify the risky and delinquent behavior exhibited by the children. Measures were also used to collect information on the nature of the target children's peer relationships, as well as the antisocial behavior and drug use of the target children.

Stormshak et al. found that both sibling deviance and peer deviance predicted substance abuse. Although the interaction of antisocial children within deviant peer groups can result in increased delinquency and substance use, sibling deviance the most important factor in predicting future substance abuse. In fact, sibling deviance predicted increased substance abuse in children even after controlling for peer deviance, but the opposite was not true. Stormshak et al. suggest that this relationship is a result of the stable nature of sibling relationships, as opposed to the fluid and unstable nature of adolescent friendships. The researchers are careful to point out that deviant peer groups that are maintained over time may be the most detrimental to developmental outcomes

because of the compounded effects of this stability and the important influence of peers in adolescence.

Studies that have demonstrated the strong influence of peers (and siblings) on problem behavior raise questions about the process through which these negative effects are created. Strong, high quality peer relationships have long been assumed to be associated with increased self-esteem, coping skills, and social skills. Researchers have recently attempted to uncover the ways in which friendships can create negative effects, and the types of friendship groups that are most vulnerable to this negative influence. Some of this research focuses on the ways in which deviant peers reinforce each others' deviant behavior. For example, a friendship can in itself be a reinforcement for behavior, as can reciprocating deviant talk. The type of reinforcement that has gained the most attention recently is the process of deviancy training, a process by which peers reinforce each other's deviant talk through laughter and other forms of social support for delinquency.

Why do Peer Effects Occur? (Deviancy Training)

In a study that was a precursor to conversations about deviancy training, Wright, Giammarino, and Parad (1986) studied the peer groups and social status of 138 male children who attended a short-term residential treatment program for children with social and behavioral problems, such as verbal or physical aggression, lack of social skills, or academic underachievement. Using sociometrics, adult assessments, and hourly observation techniques, the researchers found that the status of a child within a peer group depends on the nature of the group and person-group similarity. Therefore, an

aggressive child may be unpopular and rejected in a prosocial peer group, but when surrounded by similar peers, that child may be reinforced and rewarded with higher social status for his aggressive behavior. These findings suggest that peers who are aggressive and/or delinquent and who are surrounded by similar peers may be encouraged to continue or increase behavior because of peer reinforcement. Similar findings have since been reported in other studies (Boivin, Dodge, & Coie, 1995; Stormshak, Bierman, Bruschi, Dodge, Coie, & the Conduct Problems Prevention Research Group, 1999).

In a later study using the Oregon Youth Study sample, and perhaps the first study to examine the specific process of deviancy training, Dishion, Spracklen, Andrews, and Patterson (1997) videotaped and analyzed the conversations of 186 adolescent boys (ages 13-15) in dyadic friendships. The researchers coded talk as "normative" or "rule-breaking" and reactions of the listener as "laugh" or "pause." They found that in delinquent dyads (both boys had been arrested), there was a reciprocal relationship between rule-breaking talk and laughter. Delinquent boys reinforced each other for deviant talk. In mixed (only one boy had been arrested) and nondelinquent (neither boy had been arrested) dyads, there was a reciprocal relationship between normative talk and laughter. In these groups, boys reinforced each other for talk that did not involve deviant content. The researchers conducted a two-year longitudinal follow-up study of these dyads and showed that deviancy training (in which laughter reinforced rule-breaking talk) predicted future delinquent behavior, even after controlling for levels of previous delinquent behavior.

These findings were extended in a study by Dishion, Nelson, Winter, and Bullock (2004), who found that matching between deviant talk and reinforcement for this talk occurred within male dyads. The researchers videotaped 206 boys of the OYS sample

interacting with their most frequent companion (as determined by the boys and their parents) at ages 14, 16, and 18. The boys were videotaped for 25-minute sessions, during which they were instructed to plan an activity together and discuss two problems that they were each having with parents or peers. Topic coding was used to characterize talk as deviant or not. Deviant talk was any conversation consisting of rule-breaking talk or behavior during the session. These researchers observed a pattern they described with the matching law within deviant friendships. Specifically, adolescents matched their levels of deviant talk with the amount of reinforcement (especially laughter) they received for such talk. Antisocial boys reacted more positively to deviant talk than to normative talk, and were more likely to reinforce deviant talk than other topics of conversation. This reinforcement led to increased deviant talk and more reinforcement. Peers more focused on and interested in deviance were influential in increasing levels of deviancy and delinquency in these at-risk males.

Although most research on deviancy training focuses on adolescents, some researchers have found that children as young as kindergarten may be strongly affected by deviancy training effects in peer groups. Snyder, Schrepferman, Oeser, Patterson, Stoolmiller, Johnson, and Snyder (2005) examined deviancy training and association with deviant peers in 133 girls and 134 boys with a mean age of 5.3 at the first data collection point and 7.2 years at the last data collection point. The children were kindergarten students in one of three cohorts enrolled in one elementary school. The researchers videotaped peer interactions of each of the participants with his or her same-gender classmates. Children were observed at three time points throughout the course of two school years in structured age-appropriate play activities and in free play during the school day. Interactions were coded for antisocial content and topic (especially deviant

content). Also, peer responses to deviant talk were coded as positive or not positive, and rates of deviant talk and responses per minute were recorded. Teachers filled out part of the Teacher Report Form (TRF; Achenbach, 1991) and parents filled out part of the Child Behavior Checklist (CBCL; Achenbach, 1991) in order to measure deviant peer association. Parents, observers, and teachers rated the children's overt and covert behavior at home, on the playground, and in the classroom (respectively).

Snyder et al. found that high levels of covert and overt conduct problems predicted association with deviant peers in kindergarten, and this association in turn predicted deviant talk and deviancy training (reinforcement/imitation of deviant talk). High levels of deviant peer association and chronic rates of deviancy training (favorable responses by peers to deviant talk) or growth in deviancy training during kindergarten predicted growth of covert conduct problems during kindergarten and first grade. These effects generalized to the home as well.

Deviancy training has been found to occur in young children and older adolescents within dyadic friendships and peer groups, and although boys have been the primary group examined, Snyder et al. found some evidence of similar effects of deviancy training for girls as for boys. Specifically, the identification of the process of deviancy training in a wide range of peer groups has led to questions about which types of children or types of peer groups are most likely to elicit deviancy training effects. Recent studies have revealed that the characteristics of the peer group are often responsible for the amount of deviancy training that occurs and that certain characteristics of the child can predict who will be most affected by deviancy training.

Who is the Most Vulnerable to Deviancy Training?

Dishion (2000) attempted to examine the characteristics that make a child more vulnerable to the effects of deviancy training. He found cross-setting consistency in young adolescent psychopathology to be highly associated with involvement in deviant peer groups and increased deviancy training. Those youths who were both emotionally distressed and exhibited antisocial behaviors in multiple settings (home, school, etc.) were found to be at increased risk for involvement in deviant peer groups and deviancy training. Furthermore, in his study of 224 high-risk adolescent boys and girls with an average age of 12, Dishion found that youth identified as externalizing or comorbid (both externalizing and internalizing) were more likely to engage in deviancy training with their friends than those who were internalizing or normal (2000). Externalizing youth were characterized as those with problem behaviors, including oppositional defiant disorder and conduct disorder, and internalizing youth were those with anxiety, depression, or somatic difficulties. Dishion suggested that comorbid youth are at the greatest risk for the negative effects of deviancy training because an accumulation of adverse events in early childhood can lead to high rates of problem behaviors (antisocial behavior) and emotional distress in children. In middle childhood, problem behavior results in peer rejection and problems and school, which often leads to depressed mood and involvement in deviant peer groups. This involvement in deviant peer groups, which are supportive of problem behavior, can in turn lead to deviant talk, reinforcement, and increased delinquent behavior.

Though Dishion found evidence that child characteristics can predict who is most vulnerable to deviancy training effects, one study on peer group characteristics revealed strong evidence that the effects of association with deviant peers vary based on the

characteristics of the friendship network (Haynie, 2000). Haynie conducted a study using data from the Add Heath survey, a nationally representative sample of adolescents in grades 7-12 from 129 randomly selected schools. Students were asked to identify their best male and best female friends from a school roster, and to provide some demographic information and information on participation in minor delinquent activities (including property offenses) and in violent delinquency. Information gathered on friends was used by the researchers to examine friendship networks and to further determine the characteristics of the friendship networks, specifically network density and child centrality/popularity within the network. The researcher found that association with delinquent friends was associated with the respondent's delinquency. Furthermore, the researcher found child centrality (an indicator of placement within a network) and popularity were associated with increased delinquency, and that centrality within a nondelinquent peer network is associated with reduced child delinquency. Most saliently, dense (cohesive) delinquent peer networks were found to be highly associated with large increases in child delinquency, and density in a nondelinquent peer network was associated with reduced child delinquency. Haynie inferred from her findings that those children who are popular and located in central positions within dense delinquent friendship networks are most vulnerable to peer contagion effects and increased delinquent behavior.

In another study examining friendship characteristics that are most likely to elicit deviancy training, Poulin, Dishion, and Haas (1999) found evidence that low quality friendships increased deviancy training effects. These researchers re-examined the quality of the friendship dyads of the OYS boys that had been previously researched. They examined the Peer Interaction Tasks that had been previously taped in order to code

the peer interactions for rule-breaking behaviors, perceived relationship quality, self-reported delinquency, and antisocial status. Poulin et al. found that participants in the poorest quality friendships were more vulnerable to deviancy training effects than those with higher quality friendships. The researchers suggested that friendships of antisocial boys are often based on convenience, rather than common interest, and are perhaps inherently of lower quality. They proposed that low quality friendships might make aggressive children vulnerable to peer group effects, and found that boys with very low-quality friendships who were 13-15 years old and had histories of deviant behavior were the most likely to be affected by deviant talk and deviancy training.

In a study that partially supported the findings of both Haynie (2000) and Poulin et al. (1999), Dishion, Nelson, Winter, and Bullock (2004) examined videotapes of 206 OYS boys interacting with their best friends at ages 14, 16, and 18. Deviant content of conversations and interpersonal interaction styles were coded, and The Peer Process Code was used to calculate entropy (poor organization) of conversations. Those interactions regarded as high in entropy were characterized by disorganized and unpredictable patterns of interaction. The researchers found that young antisocial males were likely to have disorganized peer groups (higher levels of entropy). Antisocial males were also most likely to participate in high levels of deviant talk. But, the researchers found that males with organized interactions with their best friends *and* high levels of deviant talk were the most likely to continue antisocial behavior into adulthood.

Research on the factors that make certain children and certain friendship groups vulnerable to deviancy training reveals somewhat mixed results. Researchers have found some evidence that deviancy training is an increased risk for comorbid youth and those

who exhibit symptoms of antisocial behavior in multiple settings. Other research has revealed that dense friendship networks may be most responsible for eliciting deviancy training effects, especially for those with central roles or high levels of popularity in the group. Still other studies suggest that deviancy training is most common in antisocial boys' low-quality friendships. Furthermore, some research suggests that deviancy training has its most salient effects on boys participating in organized interactions that are characterized by high levels of deviant talk. These salient results were found to affect antisocial behavior in adulthood. Additional research on this topic reveals that for at-risk children in peer groups or friendships promoting deviancy, childhood deviancy training can lead to various negative results that persist into adolescence and adulthood.

Evidence of Long Term Effects

Deviancy training in peer groups plays a major role in the early onset of substance abuse and violence for boys and sexual intercourse in boys and girls (Dishion, 2000). For example, Dishion, Eddy, Haas, Li, and Spracklen (1997) found that males in dyadic friendships that engaged in deviant and violent talk were more likely to engage in violent behavior in adolescence than were those who didn't engage in deviant and violent talk, even after controlling for childhood antisocial behavior and parenting styles. The researchers observed 206 boys longitudinally at ages 13-14, 15-16, and 17-18 engaging in problem-solving discussions with a close friend. Although the boys generally brought in different friends for each assessment, those boys who engaged in violent talk with one friend were generally and uniquely more violent than those who did not engage in violent talk.

Deviant talk has also been found to contribute to abusive interactions with a romantic partner (Capaldi, Dishion, Stoolmiller, & Yoerger, 2001). Capaldi et al. videotaped male friendship interactions in order to determine whether deviancy training was a risk factor for physical and psychological aggression toward girls among adolescent boys in the Oregon Youth Study. The researchers conducted their study using two cohorts of 206 young men from the OYS study and the peer each boy chose to participate with in a Peer Interaction Task. The researchers used parent and son interviews, videotaped interaction tasks, school data, and court records to assess deviant peer association and antisocial behavior in late childhood, mid-adolescence, and early adulthood. They sought to determine the effects of deviant peer groups' hostile talk about women on later aggressive behavior toward partners. As in other research, during the 25-minute Peer Interaction Task, the boys were asked to plan an activity together, and to solve two problems they were each currently having. They were also asked to talk about what they liked and disliked about girls that they knew. The researchers found that antisocial behavior was related to deviant peer relations and hostile talk about women within friendships involving male delinquents. This hostile talk could be used to explain some of the variance in future aggression toward female partners.

Patterson, Dishion, and Yoerger (2000) also found significant long-term effects of deviancy training. These researchers examined coded observations and parent CBCL ratings of involvement with deviant peers, deviancy training, and growth in new forms of antisocial behavior for 206 boys from the OYS sample. The researchers found that early involvement with deviant peers (10 years old) was significantly related to growth in new forms of antisocial behavior from middle and late adolescence (18 years old). Measures of antisocial behavior included substance use, health-risking sexual behavior, and police

arrests. The researchers concluded that deviancy training, as well as the amount of unsupervised time that peers spent together, were responsible for this increase in antisocial behavior. The researchers suggest that prevention efforts need to be made before grades four or five if growth of antisocial behavior is to be intercepted.

Studies on the long-term effects of association with deviant peers have revealed that deviancy training can contribute to increased antisocial behavior, substance abuse, violent behavior, aggression towards women, health-risking sexual behavior, and police arrests in late adolescence and adulthood. Patterson et al. (2000) suggest that efforts to prevent negative effects of deviancy training should be made in early childhood. Specifically, they suggest that early interventions would reduce the likelihood of the formation of deviant friendships, and mitigate the risk for the development of antisocial behavior. These findings and recommendations are interesting in light of the fact that preventative and treatment options for high-risk and antisocial youths are typically conducted in a group setting. These deviancy training findings raise questions about the effectiveness of efforts that are meant to interfere with aggressive or delinquent behavior, but actually aggregate children into new peer groups of the most at-risk or antisocial youth.

Implications of the Aggregation of Youth for Treatment

In light of the problem of deviancy training that has recently been identified in naturally occurring peer groups, it is important to determine if services offered to help children are not actually providing opportunities to become more maladaptive. One of the first papers on the possible effects of deviancy training in treatment settings, by

Dishion, McCord, and Poulin (1999), showed that treatment programs for delinquent and aggressive behavior that incorporated peer interaction could affect boys negatively. Dishion and his colleagues discuss two recent studies that pointed to the possible negative effects of aggregating youth for treatment. The Adolescent Transitions Program (ATP) study was created to target two developmental processes (parent and peer influences) for intervention with aggressive youth. Researchers assigned 119 high-risk boys and girls to one of four 12-week intervention conditions. The first condition was an intervention emphasizing improving parenting skills to help reduce problem behavior and increase prosocial behavior. The second condition focused on teen peers and emphasized prosocial behavior through peer reinforcement. The third condition was a combination of both parent and teen focus. The fourth was a placebo condition (referred to as "self-directed change"), and included access to videotapes and written materials. Analysis of the short-term effectiveness of the different treatments revealed that the group receiving the combined intervention had the most positive effects, and all experimental conditions seemed to be effective. But, when long-term effects were examined, the teen intervention program seemed to have negative effects. At a three-month follow-up point, teen focus participants experienced an increase in tobacco use, and nine months after that, both tobacco use and externalizing behavior had increased for those in the teen focus condition. Three years after the study was conducted, the researchers found that the negative effects for tobacco use and delinquency persisted. Further investigation revealed that older participants and those who entered the study with more problem behaviors were more likely to be negatively affected by the peer intervention than were younger participants and those with fewer initial problem behaviors.

The second study reviewed by Dishion et al. (1999) was the Cambridge-Somerville Youth Study, which sought to prevent crime in high-risk boys through a comprehensive approach. Boys were matched on several dimensions and then were randomly assigned to the intervention or control condition. Treatment began when boys were about 10.5 years old and ended shortly after they turned 16. Treatment focused on academic tutoring, medical treatment, and general mentoring. Initially, researchers were unable to find differences between the treatment and control groups, but when the vital statistics and court, medical, and alcohol treatment centers' records of the subjects were examined in their middle age, it was found that the treatment program had negative effects. After a series of analyses, the researchers found that most of the negative effects of the CSYS program were found in boys who had been sent to summer camp more than once as part of their treatment package. The negative effect of summer camp was most salient for those in the treatment condition who were at the highest risk of delinquency.

Based on these two studies demonstrating negative effects of peer-based intervention, Dishion and his colleagues suggest that "there is reason to be cautious and to avoid aggregating high-risk adolescents into intervention groups: some conditions might further exacerbate the iatrogenic effect" (p. 1120). They suggest that reinforcement for deviancy may occur in treatment programs as it does in natural settings. It is possible that including a mix of non-aggressive and aggressive youth could be the most desirable situation, as was found by Feldman (1992, as cited in Dishion et al., 1999). Dishion et al. (1999) also suggest that interventions targeting children with social and emotional problems need to at least be structured to decrease unsupervised time and unstructured engagement with the deviant peer group. They state that more research needs to be done on the kinds of programs that cause negative effects, because not all

interventions using peer groups have had such effects. Furthermore, many researchers have concluded from their research that family interventions can help to offset the effects of deviancy training in peer groups, or even be used in place of residential treatment programs for at-risk youth (Dishion, 2000; Dishion et al., 1999; Stormshak et al., 2004). More research is needed on the effectiveness of family interventions in offsetting peer influences, and on how to supplement and structure residential treatment programs in order to lessen the risk of deviancy training effects.

Following the publication of Dishion et al.'s (1999) influential article on deviancy training within the context of clinical treatment for antisocial youth, many studies have been published that examine the effects of integrating high-risk or delinquent youth in programs meant to treat or prevent problem behavior. One such study considered the effects of Reconnecting Youth (RY), a program designed to reconnect truant and underachieving high school youth to their schools, families, and communities through the development of personal control, coping behaviors, interpersonal communication, and relationship skills (Cho, Hallfors, & Sanchez, 2005). The program's goals were to decrease school problems (decreased truancy and increased GPA), decrease drug involvement, and improve mood management (decreased depression, anger, and anxiety). Ninth- to eleventh- grade students were enrolled in a highly-structured full-semester class of 10-12 students, led by a trained teacher. The 1,218 participants in the study were instructed in Self-Esteem, Decision Making, Personal control, and Interpersonal Communication units. Attendance and GPA were obtained from school records, and substance use, problem behaviors, peer affiliation patterns, and social connection to school were obtained from the High School Questionnaire that students completed at baseline, at the end of the semester, and at 6-month follow-up. At the end of the

semester, there were mixed effects of the program, but at 6-month follow-up, only negative effects remained. GPA, school connectedness, and conventional peer bonding had decreased, whereas anger and peer high-risk behaviors had increased. Researchers suggested that aggregating the high-risk youth created an opportunity for high-risk youth to form friendships with deviant peers, and removed them from opportunities to socialize with more prosocial peers.

Leve and Chamberlain (2005) found similar results in their study of intervention effects for youth in the juvenile justice system. In this study, 153 12-17 year-old chronic juvenile delinquents (boys and girls) were randomly referred to two different intervention programs by Oregon state judges. One intervention program, Mutlidimensional Foster Care (MTFC), placed delinquents in a treatment foster family in the local community. The other program was a group care intervention, which is the usual service afforded to this population. The participants and their caregivers were assessed at baseline and 3-, 6-, 12-, 18-, and 24-month follow-up points. Questionnaires completed focused on measures of delinquent peer association and possible covariates, such as age and gender. Twelve months post-intervention, boys in the group care intervention had more delinquent peers than they had at baseline, and girls had even more delinquent peer association than did boys. Just as Cho et al. (2005) found in their study, Leve and Chamberlain found that group treatment led to the formation of friendships with high-risk peers post-intervention. Although not assessed in this study, this formation of high-risk friendship groups could lead to increased delinquency, aggression, and conduct problems.

Another similar study examined Families and Schools Together (FAST), a program in which the families of elementary school children met in a group setting in order to improve family communication and social support (Warren, Schoppelrepy,

Moberg, & McDonald, 2005). Families of 331 inner-city elementary school children participated in the program. Parents filled out Achenbach's CBCL at pretest, 8 weeks posttest, and at 1-year and 2-year follow-up points. Teachers completed Achenbach's TRF at pretest, 8 weeks post-test, and at the 2-year follow-up point. Items assessing child aggression were examined and interpreted by the researchers. Researchers found that the aggression level of the treatment group that children were placed in was related to their parental rating of aggression at the two-year follow-up. This result was most salient for those children who were most aggressive at pretest. The researchers suggest that the increase in aggression resulting from children being placed in aggressive groups may be a natural functional reaction to their environment. They suggest that treatment that aims for lasting change must change the child's long-term peer environment to one that does not involve this competition or the negative reinforcement of aggressive behavior.

Following these studies documenting the negative results of aggregating high-risk youth, some researchers have examined the effectiveness of programs that mix prosocial youth with high-risk youth. Mager, Milich, Harris, and Howard (2005) compared a problem-solving skills groups that aggregated youth with conduct problems to groups that consisted of youth with and without conduct problems. Participants were 129 sixth- and seventh-grade students who were chosen for participation based on teacher ratings of externalizing behavior. The program focused on the development of social problem-solving skills for handling social problems such as teasing, peer pressure, and disagreements. Measures of psychosocial functioning were completed within three months before the program began, 3-5 months later, 1 month after the program ended, and 6 months after the program ended. Behavior problems were assessed by the Child Behavior Checklist (components filled out by parents and teachers). Attitudes toward

alcohol, drugs, and delinquency were reported by the participants. Students also completed measures of social skills, and school adjustment data were obtained from school records. Finally, trained observers recorded how often students followed and violated rules of the classroom. They also rated students' general behavior. The researchers found that students in the "pure" group composed entirely of students with conduct problems decreased more in externalizing behavior and increased more in prosocial behavior than did at-risk participants in the mixed condition. Also, less deviancy training occurred in the "pure" group than in the mixed group. Both in-session and follow-up data supported the finding that in this study more aggregation led to more positive results. The results of this study suggest that mixing high-risk students with those without conduct problems may not be a viable alternative to aggregation, and may only worsen the effects of deviancy training.

In a related study, Boxer, Guerra, Huesmann, and Morales (2005) found interesting results related to the *level* of aggressiveness of the participants in group treatment. Their participants were boys and girls in grades 3 and 6 who were considered high-risk because of previous aggressive behavior. These children participated in small-group prevention programming as part of the Metropolitan Area Child Study. The youth met with four to ten peers and two staff members once a week for a year. Sessions focused on social interaction techniques, social conflict-solving, understanding ambiguous behavior, handling victimization, and forming friendships. Both pre-test and post-test, teacher ratings of aggression were obtained from the Teacher Report Form of the Child Behavior Checklist, and participant nominations of aggressive peers where obtained from the Aggression subscale of the Peer Nomination Inventory (Eron, Walder, & Leftkowitz, 1971).

The researchers found that the change in aggressiveness of a child was related to the relative aggression level of the group. Children were "pulled" toward the aggression level of group members: those who were lower in aggression than the group in general became more aggressive, and those who were higher in aggression than the average level of the group became less aggressive. The researchers suggest that a "discrepancy-proportional influence" occurs, wherein "the greater the discrepancy between the target child and the peers on the target behavior, the greater the movement of the target child toward the peers of that behavior" (p. 333). The researchers suggest that the aggregation of aggressive youth can support reductions in aggression as well as increases in aggression, depending on the ratio of aggressive to non-aggressive youth and the child's aggression level.

Finally, Lavallee, Bierman, Nix, and the Conduct Problems Prevention Research Group (2005) examined the effects of a child's own behavior and that of his or her "friendship group" members in a preventative intervention program. The participants were 266 at-risk first-grade boys and girls who were enrolled in 55 Fast Track friendship groups. The program sought to provide the children with social skills training and peer experiences, as well as parent training, home visiting, classroom programming, and academic tutoring. Cooperative and group activities played a major role in the program. Measures of prosocial behaviors, aggression, and social cognitions were administered both before the program began and postintervention.

Although the researchers found that a child's own aggression level upon entering the program was the most reliable predictor of postintervention level of aggression, peer effects were found. The simple aggressiveness of a child's group did not predict future aggression levels, but when group members offered attention and reinforcement to a

child's disruptive behavior, levels of postintervention aggression were higher. Deviancy training was found not to be an inevitable process in groups of antisocial youth; instead, it was related to group members' responses to a child's behavior. Although aggressive children may be more likely to reinforce peers' aggressive behavior, reinforcement may occur with lower-aggression peers as well. Furthermore, the researchers found that groups with a higher percentage of girls experienced greater gains on average than those with a lower percentage of girls. Being in a group with more girls had a greater effect on treatment outcomes than simply being a girl did. The researchers suggested that girls' presence in friendship groups may have produced increased acceptance and cohesiveness, and less provocation.

This research has revealed that deviancy training can and does occur within the context of preventative interventions and treatment programs. It is still unclear, though, which types of programs are most vulnerable to deviancy training effects, and which children are most vulnerable to the deviancy training process within an intervention setting. It is possible that treatment programs are less vulnerable to deviancy training effects than are preventative programs, or that highly-structured programs are less vulnerable are than less structured ones. Dishion and Dodge (2005) hypothesize that the characteristics of the participants, skill of the group leader, and context of the intervention may each have effects on the level of deviancy training that occurs within a intervention setting. Dishion and Dodge also suggest that the amount of deviancy training that occurs within a prevention or treatment setting may depend on the nature of the program. Some interventions occur within the community (including after school programs and summer camps), others are implemented within the structure of the public

school (including "pull out" programs and classroom interventions), others are inpatient or outpatient mental health services, and still others are juvenile justice programs. The range of programs placed under the umbrella of "intervention" efforts is so wide that it is impossible to examine the effects of intervention programs without taking into consideration the different components of each type of program in general, and each individual program as well.

Some studies suggest that deviancy training effects may only be a problem for those who are at risk or already exhibiting antisocial or deviant behavior, but other studies suggest that deviancy training may have an effect on nondelinquent youth who are placed in prevention programs with at risk youth. It is most probable that whether a child or adolescent will be affected by deviancy training within an intervention setting depends not only on the type of program implemented and the program's structure, but also on the characteristics of the child.

Gender and Deviancy Training

Deviancy training is a relatively new subject of research within the field of psychology. There is still much more to be learned about the effects of peers on behavior, both in natural settings and in treatment settings. Researchers have yet to examine the effects of many demographic characteristics, such as race, socioeconomic class, and gender, on deviancy training. Gender is a particularly important factor to examine when studying the effects of deviancy training as it has been largely ignored in both basic research and intervention research. A previous lack of attention to deviancy training in girls is at least partially due to the relatively small numbers of aggressive and delinquent girls referred for treatment. As gender differences in aggression are better

understood, and as referrals become more and more common for girls, it is important that research is done on the influences of deviancy training on aggressive girls, especially within clinical settings (Silverthorn & Frick, 1999; Underwood, 2003).

Research concerning gender/sex differences in aggression is fairly inconsistent. Some researchers have found significant differences in aggression between boys and girls throughout development (Maccoby & Jacklin, 1980), with males exhibiting reliably more aggressive behaviors. Others claim that these gender differences exist only after age five (Tieger, 1980), and still others claim that gender differences are more salient in children under age six than in college students (Hyde, 1984). Generally, researchers have found that boys are almost always more physically aggressive than are girls (Keenan & Shaw, 1997), with some researchers suggesting that rates of externalizing disorders are up to 10 times as high for boys as girls at school entry (Offord et al., 1987).

Although pronounced gender differences seem to exist in terms of physical aggression (the type of aggression most commonly studied), some studies have shown that gender differences are not as pronounced for other forms of aggression. For example, some researchers have found that girls are not necessarily less verbally aggressive than are boys (Bettencourt & Miller, 1996; Zakriski, Wright, & Underwood, 2005). In addition, girls have recently been shown to engage in different types of aggression and delinquency than have boys, performing more covertly and interpersonally aggressive acts than do boys (Wenar & Kerig, 2006). Recent research has suggested that indirect (relational) aggression is more common in girls than in boys (Archer, 2004; Crick & Grotpeter, 1995).

In addition, some research on gender differences in friendship groups has revealed that boys' and girls' interaction and play styles tend to differ (Maccoby, 1998; Miller,

Danaher, & Forbes, 1986). For example, girls tend to talk more with their peers and to form closer relationships with smaller numbers of peers than boys do (Maccoby, 1998, 2002). This type of peer group organization creates the potential for more influence by peers. It is possible that this opportunity for substantial peer influence may affect the process and strength of deviancy training in girls' peer groups, and lead to greater peer effects for girls than for boys. It is important that future research examines how the different styles of peer affiliation that boys and girls experience affect their experiences of deviant talk and deviancy training, and how this in turn influences behavior.

With the identification of new types of aggression (verbal/relational) that tend to be more common in girls than in boys, and in light of the fact that the numbers of girls involved with the juvenile justice system and identified with conduct problems or aggression is increasing, it is crucial that we understand the effects of gender on peer effects and deviancy training. Some evidence of gender effects of deviancy training in samples of high-risk children has been found. For example, Dishion (2000) found some evidence of higher levels of observed deviancy training in boys compared to girls. Most studies that have included samples of both boys and girls have pointed to similar peer contagion effects in boys and girls, but this research has often been done exclusively on adolescents, has not been within a clinical (treatment) setting, and has tended not to explore the unique ways in which deviancy training may affect girls (Boxer et al., 2005).

Although few gender differences in the peer contagion process have been observed so far, one study revealed striking differences in the peer experiences of girls and boys. Hanish, Matrin, Fabes, Leonard, and Herzog (2005) examined how exposure to externalizing peers affected the behavior of 137 low-risk preschool or kindergarten boys and girls. Through observation and teacher ratings of natural peer groups in the

classroom, the researchers found that those children with higher levels of social play spent the least amount of time with externalizing peers. Being active and expressing positive emotion predicted more association with externalizing peers for boys, but negative emotion was related to externalizing peer association for girls. Boys associated with externalizing boys and girls for similar amounts of time, although girls spent more time with externalizing girls. Most interestingly, the researchers found that exposure to externalizing peers predicted the development of short-term problem behaviors for girls, but not for boys. These problem behaviors included aggression, hyperactivity, and anxiety.

The results of this important study clearly point to the need for more research on gender effects. The researchers did not study a clinical sample of girls, and were unable to determine the effects of externalizing peers on girls who were already at risk for developing aggressive or delinquent behavior, who have already been identified as the most vulnerable to deviancy training effects. Furthermore, the process of deviancy training was not explicitly examined; the study focused on peer association rather than reinforcement for aggressive or delinquent behavior. In order to understand the effects of group treatment of high-risk or aggressive/delinquent girls, it is necessary that gender effects be studied within a clinical setting, with specific attention being paid to social support for aggressive/delinquent behavior, the process of deviancy training.

The Present Study

The present study examined peer support for aggression in a clinical sample of 7- to 18-year-old boys and girls attending a short-term, intensive, mixed behavior-problem residential treatment program for eight weeks in the summer of 2005. Specific attention

was paid to potential deviancy training processes. The study focused on the reinforcement of aggressive behavior through the attainment of high social status (high levels of peer liking and low levels of peer rejection), and the effect of gender on the process of deviancy training. The study also examined treatment effects for girls versus boys to determine if deviancy training affected treatment outcomes, and whether it did so differently for boys and girls.

Specifically, the study examined whether high delinquency children at this clinical setting were reinforced for their delinquent behavior through attainment of high social status, and whether this had an influence on treatment effects for high delinquency children. It was expected that peer support for delinquency would be uncovered for high delinquency boys, although it was unclear whether this process would exist for girls. Furthermore, research on the impact of deviancy training on treatment effects is mixed and does not point clearly to an expected outcome within a clinical setting, even if deviancy training does exist. It has been suggested that certain treatment settings are more susceptible to negative treatment outcomes of peer support for delinquent behavior. Because of the current program's high level of structure and constant staff supervision, it was expected that peer support for delinquent behavior would exist (at least for boys), but there would be little or no impact of this peer support on treatment effects.

Method

Participants

Participants were 124 emotionally and behaviorally at-risk children attending Wediko's summer program in Windsor, New Hampshire in the summer of 2005. Thirty-eight percent were girls, and 62% were boys. Wediko is an eight-week, highly structured, therapeutic camp that stresses academic and nonacademic mastery, beneficial risk-taking, and the development of social skills, self-control, and self-confidence. Children are assigned to living groups of approximately 10 students (within one of the four developmentally based programs), based on chronological age, developmental level, strengths, weaknesses, and interests. The child:staff ratio at Wediko is approximately 2:1, and specific individual intervention plans and individual and group counseling facilitate socioemotional development.

Children and adolescents at Wediko, often described as being severely emotionally disturbed, have a history of difficulty in coping with the daily demands of living in a social world, and range in age from seven to nineteen. The mean age of children in the present study was 12.76, with a standard deviation of 2.76. Children at Wediko have behavior problems that interfere with their functioning at school or home, such as aggression, social skills deficits, or internalizing behavior. Specifically, these children and adolescents may have difficulty involving attention deficits, learning differences, impulse control problems, negativity, academic under-achievement, low self-esteem, poor social skills, adoption issues, attachment disorders, mood disorders, and/or mild atypical developmental disorders. A large number of children referred to Wediko exhibit risk factors for delinquency including fire-setting, animal cruelty, and aggression. For

some of the older children these problems have escalated to truancy, assault, gang-participation, substance abuse, and court involvement.

Most children come to Wediko from the Boston area and other urban areas in New England, but others come from all over the United States. The children are ethnically diverse, with the majority being White and African American, and are primarily lower- and middle-SES. In this sample, 55% of the children were White, 33% were African American, 8% were Hispanic, and 2% each were Asian and Native American. There are approximately three times as many boys as girls at Wediko. All children who attend Wediko have expressed a desire to participate in the program, and have undergone an extensive application process in order to gain acceptance to the program. Children participating in the program are funded by their school district, state social service agency, adoption agency, or private sources. The source of funding depends on who refers the child, the child's educational status, the nature of the child's difficulties, and other factors.

Measures

Teacher Report Form (TRF). The TRF (Achenbach, 1991) is a standardized measure used to evaluate the frequency of behavioral problems in children (see Appendix A). It consists of 118 items, and includes eight syndromes (such as Anxiety and Attention Problems) and two broader categories drawn from these syndromes (Externalizing and Internalizing). It also includes a Total Problem Scale. The measure takes approximately 15-20 minutes to complete per child. Test-retest reliability has been found to be about .82-.87 for the TRF, and short-term stability to be .57-.83 (Achenbach, 2001). This measure is given at the beginning and end of the program to assess overall behavior change over the course of the summer. The Rule Breaking scale is used to measure the

level of delinquency of participants for the current study. The other TRF scales are used to assess treatment effects.

Behavior-Environment Transactional Analysis (BETA). Developed at Wediko, this checklist is a measure used to assess overall behavioral problems as well as behavior problems in specific interpersonal contexts (see Appendix B). It is unique in that it assesses both children's reactions to events and others' (peers and adults) reactions to those reactions. The BETA thus measures behavioral reactions in a variety of contexts as well as reciprocal responses. The scale consists of 134 items, and takes about 20-25 minutes for an adult to complete for one child. Administered four times throughout the summer, the measure asks respondents to base their ratings on their observations of the child over the last week. Eight items assess overall behavior rates (such as "bosses or threatens" and "laughs or smiles"), 8 items assess context frequencies (such as "adults warn" and "peers talk to [the student] in a friendly way"), 64 items assess reactions to contexts, and 64 items assess reciprocal responses to the child's behavior. A complete version of the BETA, which measures behaviors, contexts, reactions, and reciprocals, is administered during weeks one and five of the summer. A shortened form, which does not measure reciprocals, is administered in weeks two and six. This measure is then used to closely track behavior change and change processes over the course of the summer. The reliability and temporal stability of the scale have been found to be comparable to popular syndromal measures like the TRF (Wright & Zakriski, 2001). The present investigation examines only the staff ratings of peer positives, taken from the "context frequencies" section of the scale.

Peer assessments. Peer assessments were conducted at two points during the summer (weeks two and five) using a measure developed in previous research at Wediko

(Wright et al., 1986), and closely paralleling commonly used sociometric interviews (see Appendix C). These peer assessments occurred in the context of individual sociometric interviews with staff members, and were designed to assess social acceptance, rejection, and social behaviors (both global and context-specific aggression, withdrawal, and prosocial items are included). Interviews were each about 20 minutes in length. The interviews involved the use of pictures to ensure the confidentiality of children's responses during interview. Children made nominations for a given item (e.g., "Who do you really like as a good friend?" "Who starts fights?") by placing children's pictures face down in front of the interviewer. Each photo had a unique identification number on the back, which the interviewer recorded. In this way, staff were not aware of children's individual responses during the interview. Confidentiality was stressed to the children in these interviews. Children were told not to discuss their answers with others, Staff received sociograms based on these data that were used to assess group dynamics and plan dyadic and individualized interventions during the summer. Scores from this measure include actual social acceptance, actual social rejection, perceived social acceptance, perceived social rejection, and other measures of social status and behaviors in peer groups. Social acceptance and rejection scores were used as an index of social support and were compared between aggressive/delinquent and nonaggressive/nondelinquent children. Positive and negative social experiences were also examined to detect peer group support and disapproval.

Procedure

The data described in this proposal were collected as part of the clinical assessment program at Wediko Children's Services. Clinical staff members hired by Wediko collect the assessment data over the course of the summer. Data collection is managed by four

clinical research staff, also paid for and hired by Wediko. Clinical research staff members spend the majority of their day working with a clinical group, but spend 3-4 hours per day preparing assessment materials, entering/processing data, and providing feedback to supervisors. Clinical research staff members are supervised by the executive director of the program and two research consultants. This team also collaboratively designs the assessment program. All data are used for clinical purposes during the course of the summer.

All parents/guardians were informed about the clinical assessment program at Wediko, and were asked to give their informed consent for these data to be also used for research purposes after the summer was over. Additionally, children were asked for their assent. The consent form was reviewed at the time of the interview and parents/guardians were given an opportunity to ask questions. Contact information was given for any concerns parents/guardians may have had about the data collection and/or research. Parents/guardians and children were informed that their decision about allowing data to be used for research purposes would not affect the likelihood of their child being accepted to the program or the quality of their child's treatment during the program. It was also explained that any use of the data for research purposes would involve the use of identification numbers, not names, and that data would be presented only in summary form and would not identify individual children. Only data for children with parental consent and child assent was used in the current study. IRB approval for the present study was obtained prior to the beginning of the 2005 treatment program.

Before the summer program began, application materials were completed for all children by parents, teachers, and therapists. These materials were not used in the current study. The TRF was completed by clinical staff members twice, at the end of the first

week of the program, and at the end of the summer. Staff members rated the same children (randomly assigned) at both time points. During the course of the summer, the BETA was administered to clinical staff members four times. Staff members were randomly assigned to rate two children each time (staff rated the same child in the first and third administration, and second and fourth administration). These staff members had been living with the 8-10 children they rated, and working with these specific children at least 6 hours a day, 6 days a week, so were highly capable of assessing behaviors of the children. Peer assessments were conducted by clinical staff at the end of the second and fifth weeks of the program.

Results

Delinquency scores for participants were obtained from the Rule Breaking Scale of the Teacher Report Form (TRF) that was administered at week two of the program. Table 1 shows the mean delinquency levels and standard deviations for boys and girls at the beginning of the summer. Girls and boys did not differ significantly in their initial raw scores of delinquency level, but did differ in terms of the clinical significance of their delinquency levels, as is shown in the *t*-score comparison. Overall, girls were more clinically significantly impaired than were boys.

A number of multiple regressions were performed in order to determine the relationship between delinquency level, sex, and the interaction of these independent variables, and peer acceptance/rejection or behavior change. Age was also included in the first step of the regressions to focus our prediction on sex and delinquency effects that were above and beyond simple age effects on deviancy training.

Peer Support for Delinquency

Preliminary analyses. Before examining the relationship between delinquency level and peer support, group comparisons for peer support were examined by sex. Table 2 shows the means and standard deviations of the peer support variables for boys and girls. Boys and girls differed significantly only in the ratings of peer "like most" nominations. Girls in the setting reported liking each other more than boys reported liking each other. Table 3 shows the intercorrelations of the different peer variables for child and adult ratings. Child measures of peer support were highly correlated with each other, and adult and peer measures were modestly correlated.

Table 1

Initial Mean Delinquency Level Comparisons for Boys and Girls

	Boys	Girls	*df*	*t*	*p*
Raw score mean delinquency level	4.70	5.18	119	-0.63	.531
Standard deviation	4.06	4.06			
T-score mean delinquency level	60.88	65.07	119	-2.68	.009
Standard deviation	8.17	8.56			

Table 2

Mean Peer "Like Most" Nominations, Peer "Like Least" Nominations, Child Ratings of Peer Positives, Adult Ratings of Peer Positives, and Adult Ratings of Peer Negatives Comparisons for Boys and Girls

	Boys	Girls	*df*	*t*	*p*
Peer "like most" nominations	0.47	0.55	121	-0.40	.018
Standard deviation	0.20	0.19			
Peer "like least" nominations	0.30	0.28	121	-0.72	.472
Standard deviation	0.21	0.21			
Child ratings of peer positives	0.42	0.47	121	-1.79	.075
Standard deviation	0.16	0.16			
Adult ratings of peer positives	3.65	3.70	119	-0.28	.781
Standard deviation	0.91	0.98			
Adult ratings of peer negatives	2.02	1.83	119	0.71	.482
Standard deviation	1.43	1.42			

Table 3

Correlations for Peer "Like Most" Nominations, Peer "Like Least" Nominations, Child Ratings of Peer Positives, Adult Ratings of Peer Positives, and Adult Ratings of Peer Negatives

	Like Most	Like Least	Peer Pos (ch)	Peer Pos (ad)	Peer Neg (ad)
Like Most	---	-.78**	.60**	.29**	-.51**
Like Least	---	---	-.64**	-.33**	.63**
Peer Pos (ch)	---	---	---	.28**	-.56**
Peer Pos (ad)	---	---	---	---	-.15
Peer Neg (ad)	---	---	---	---	---

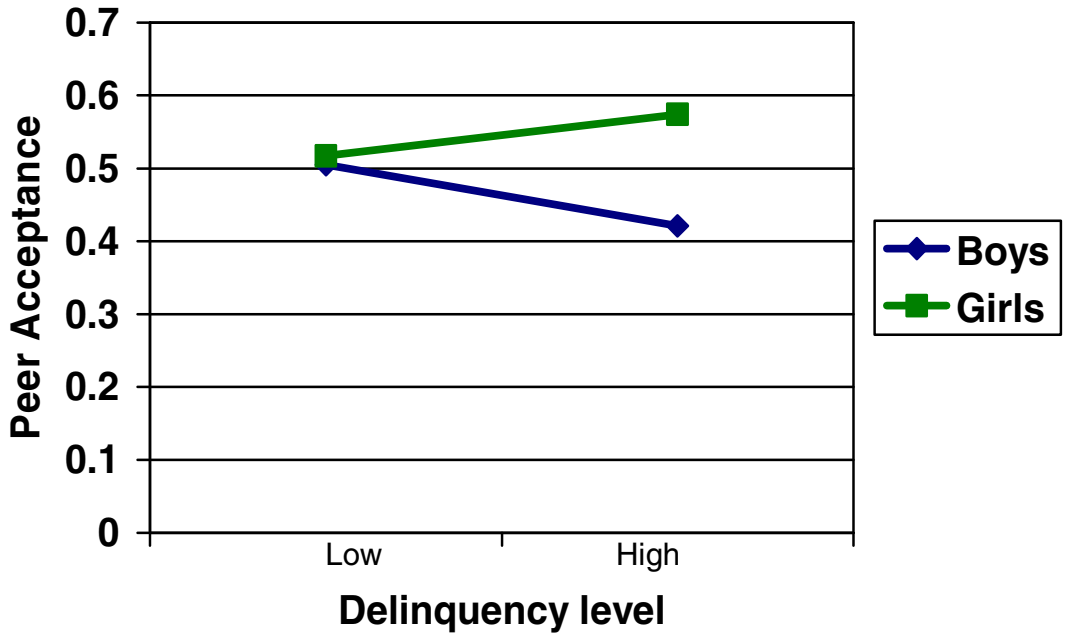
**. Correlation is significant at the .01 level (2-tailed).

Peer ratings. To examine whether youth received peer support for delinquency at Wediko and whether this was truer for boys or girls, a series of regression was performed predicting peer sociometric variables from sex and delinquency level. Specifically, a multiple regression was performed with delinquency, sex, and the interaction between the two predicting peer acceptance. Higher change scores indicate more positive change, and negative scores indicate an increase in problem behavior. Age was entered on the first step. The regression was significant, $F(4, 116) = 4.84$, $p = .001$, $R^2 = .14$. Age was not a significant predictor. Delinquency level ($\beta = -.01$, $p = .007$) and sex ($\beta = -.79$, $p = .004$) significantly predicted peer acceptance, and the interaction effect of the independent variable ($\beta = .01$, $p = .001$) was significant. Overall, increasing levels of delinquency predicted decreasing levels of peer acceptance, and girls were more accepted by their peers than boys were. Figure 1 illustrates the interaction of delinquency level and sex on peer acceptance. High and low delinquency groups were formed using a mean split.

As shown in Figure 1, peer acceptance decreased with increasing levels of delinquency for boys. For girls, increasing levels of delinquency predicted increasing peer acceptance. High delinquency girls were liked more than were low delinquency girls, and were more accepted by their peers than were high delinquency boys.

Another regression was performed with peer rejection as the dependent variable. This regression was also significant, $F(4, 116) = 8.24$, $p = .000$, $R^2 = .22$. Age ($\beta = -.03$, $p = .000$) made a significant contribution to the prediction of peer rejection. Again, delinquency level ($\beta = .01$, $p = .025$), sex ($\beta = .79$, $p = .005$), and the interaction of the independent variables ($\beta = -.01$, $p = .004$) also made significant contributions. Findings

Figure 1. Child ratings of peer acceptance for boys and girls at low and high levels of delinquency.



were consistent with results of the peer acceptance regression. Overall, increasing levels of delinquency predicted increasing peer rejection, and boys were more rejected by their peers than girls were. Figure 2 illustrates the interaction effect of delinquency level and sex on peer rejection.

As Figure 2 shows, increasing levels of delinquency predicts increasing peer rejection for boys. For girls, high and low delinquency girls experienced virtually the same level of peer rejection. Although low delinquency boys and girls experienced similar levels of peer rejection, high delinquency girls appeared to be less rejected than high delinquency boys.

Staff ratings. Staff ratings of peer experiences were also used to assess whether youth received peer support for delinquency at Wediko. Staff ratings of positive and negative peer experience from the BETA were used as dependent variables in a similar set of multiple regressions. A regression performed with staff impressions of peer negatives as the dependent variable was significant, $F(4, 115) = 7.12$, $p = .000$, $R^2 = .20$. Age ($\beta = -.16$, $p = .001$) was a significant predictor. Delinquency ($\beta = .05$, $p = .007$) significantly predicted staff reports of negative peer experiences, and sex ($\beta = 3.19$, $p = .093$) did marginally. Findings were consistent with those from child ratings of peer rejection. Increasing levels of delinquency predicted increases in peer negatives, and girls received fewer peer negatives from their peers overall than did boys. There was also a marginal interaction effect ($\beta = -.05$, $p = .074$), which is illustrated in Figure 3. As with child ratings, increasing delinquency in boys predicted more peer rejection, whereas this effect was less pronounced for girls. Girls experienced very similar levels of peer rejection at both low and high delinquency levels. Again, high delinquency boys appeared to be more rejected than were high delinquency girls.

Figure 2. Child ratings of peer rejection for boys and girls at low and high levels of delinquency.

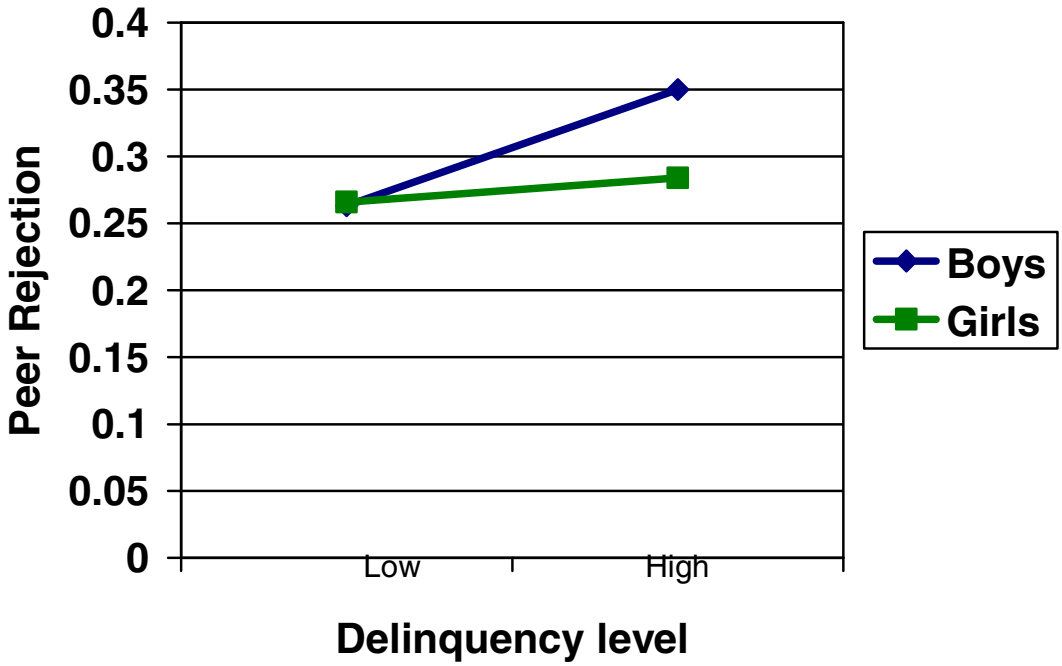
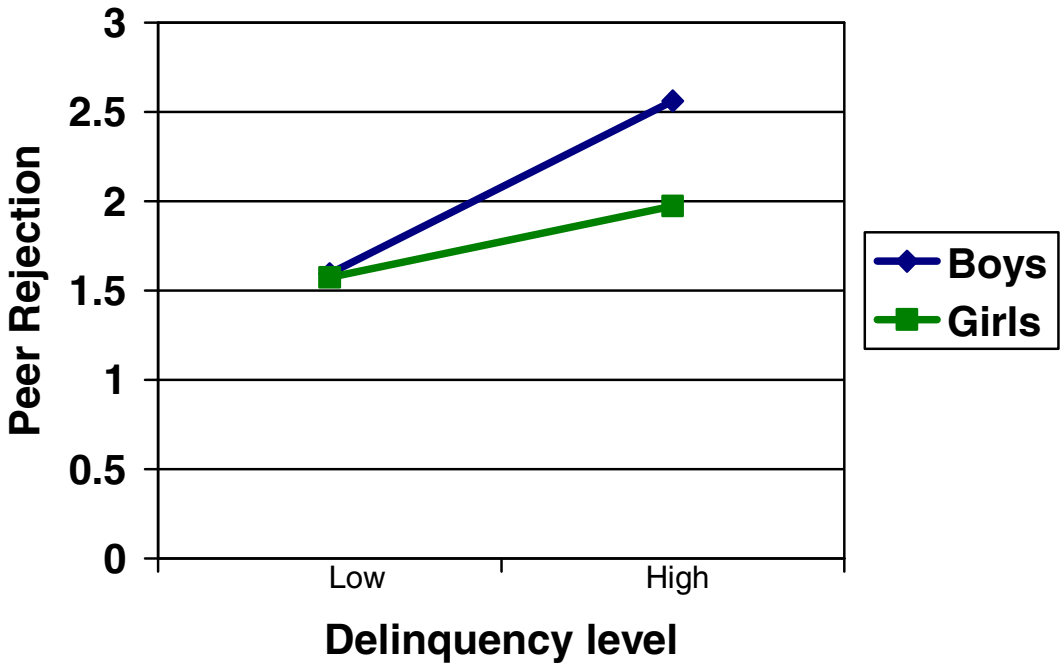


Figure 3. Staff ratings of peer rejection for boys and girls at low and high levels of delinquency.



The multiple regression predicting staff-reported peer positives was significant $F(4, 115) = 3.07$, $p = .019$, $R^2 = .10$. Age ($\beta = .09$, $p = .003$) was a significant predictor, and delinquency level ($\beta = .02$, $p = .065$) was marginally significant. Sex and the interaction between delinquency level and sex were not significant predictors. The relationship between peer support and delinquency was stronger when peer assessments of peer support were used than when staff ratings were used, suggesting that the peer support that youth receive for delinquency is subtle and potentially difficult for adults to detect.

Summary. Gender differences in peer support for delinquency were revealed across a number of measures. Delinquency was negatively related to peer support and acceptance for boys, but for girls. Delinquency was positively related to peer rejection for boys, but not for girls. This suggests that highly delinquent girls were reinforced more by peers for delinquent behavior than highly delinquent boys were through peer acceptance and inclusion. This finding was strongest when peer reports were used, and consistent, but not significant, when staff measures were examined. This difference in the findings for child and staff reports suggests that peer support for delinquency may be a subtle process that sometimes goes unnoticed by adults.

Problem Behavior Change Scores

Preliminary analyses. Before examining change in problem behaviors over time, it is important to examine the starting points of the participants. Initial means and standard deviations for broad and narrow band scales are shown in Tables 4 and 5. These means and standard deviations are shown for high and low delinquency boys and girls. Table 4 shows that there was no difference in initial broad and narrow band ratings

Table 4

Initial TRF Raw Score Means and Standard Deviations for Broad and Narrow Band Scales for High and Low Delinquency Boys and Girls

	TRFad	TRFwd	TRFint	TRFext	TRFtp	TRFsom	TRFsoc	TRFth	TRFatt	TRFrb	TRFagg
Hi delinquency											
Boys mean	8.00	6.00	15.47	31.68	87.47	1.47	6.94	2.88	27.44	8.50	23.18
sd	4.65	3.39	7.58	8.15	25.98	2.21	4.22	2.60	9.77	2.84	6.18
Girls mean	8.86	5.41	15.09	31.32	83.68	1.82	6.09	3.18	24.55	8.36	22.96
sd	6.78	4.10	10.37	10.44	27.73	2.87	4.48	3.42	8.25	3.43	8.00

	TRFad	TRFwd	TRFint	TRFext	TRFtp	TRFsom	TRFsoc	TRFth	TRFatt	TRFrb	TRFagg
Low delinquency											
Boys mean	5.26*	4.48*	0.45**	3.31	1.48**	13.24*	1.62*	8.02*	10.19	9.64	39.43
sd	4.98	3.58	0.74	3.27	2.17	10.50	1.40	6.47	7.49	7.60	21.93
Girls mean	8.91	6.65	1.57	5.52	2.70	13.26	2.13	10.61	17.13	12.74	54.04
sd	6.95	4.17	2.81	3.58	2.27	7.75	1.39	6.59	9.89	7.43	19.10

Note. TRFad = anxiety/depression, TRF wd = withdrawal, TRFint = internalizing behavior, TRFext = externalizing behavior, TRFtp = total problems, TRF som = somatic complaints, TRFtp = thought problems, TRFatt = attention problems, TRFrb = rule breaking, and TRFagg = aggression

Asterisks indicate significant sex differences within delinquency level

*. Significance at the .05 level (2-tailed).

**. Significance at the .01 level (2-tailed).

for high delinquency boys and girls. There were significant differences for low delinquency boys and girls in terms of anxiety/depression, withdrawal, somatic complaints, social problems, thought problems, internalizing behavior, and total problem scores. Low delinquency girls were more significantly impaired than low delinquency boys in terms of all of these variables.

In terms of clinical significance, the fact that high delinquency boys and girls were equal in measures of broad and narrow band symptom ratings may mean that girls were more clinically impaired than were boys. In order to address clinical significance, *t*-scores are presented in Table 5. High delinquency girls were found to be initially more clinically impaired than were high delinquency boys in terms of rule breaking. In addition, low delinquency girls were initially more clinically impaired than were low delinquency boys in every broad and narrow band measure except somatic complaints. These findings will be returned to when results are discussed and interpreted.

Total problems and externalizing and internalizing behavior. The previous analyses showed evidence of potential deviancy training at Wediko, with delinquency being related to peer acceptance for girls. This next set of analyses examines whether delinquent children (especially delinquent girls) improved less over the course of treatment because of this peer support. A regression was first performed in order to determine the relationship between these independent variables and TRF staff ratings of total problem behavior change. The regression was significant, $F(4, 116) = 10.78$, $p = .000$, $R^2 = .27$. Age was not a significant predictor variable, but delinquency level ($\beta = 1.20$, $p = .000$), sex ($\beta = 101.49$, $p = .003$), and the interaction of delinquency level and sex ($\beta = -1.66$, $p = .002$) each was a significant predictor. Increasing delinquency levels

Table 5

Initial TRF T-Score Means and Standard Deviations for Broad and Narrow Band Scales for High and Low Delinquency Boys and Girls

	TRFad	TRFwd	TRFint	TRFext	TRFtp	TRFsom	TRFsoc	TRFth	TRFatt	TRFrb	TRFagg
High delinquency											
Boys mean	65.09	65.21	56.65	67.82	61.18	64.12	68.59	74.44	65.77	72.53	70.79
sd	8.06	8.91	8.13	8.62	8.40	8.21	4.76	7.87	7.12	5.03	6.32
Girls mean	63.36	63.64	58.00	67.59	62.86	67.77	71.73	77.68	64.32	75.32*	72.41
sd	10.92	10.05	10.01	9.37	9.55	6.90	5.87	9.56	11.35	6.66	6.93

	TRFad	TRFwd	TRFint	TRFext	TRFtp	TRFsom	TRFsoc	TRFth	TRFatt	TRFrb	TRFagg
Low delinquency											
Boys mean	59.91*	60.55**	53.05**	59.71***	56.10***	54.91	54.64***	60.33**	59.21***	58.45***	7.95**
sd	9.22	8.20	4.74	8.02	7.41	5.88	3.84	6.14	9.70	5.71	6.25
Girls mean	65.26	68.13	56.48	66.52	62.09	59.78	58.70	65.13	67.17	64.00	65.74
sd	10.82	11.74	9.95	7.51	7.49	4.95	5.16	6.08	8.63	5.01	4.03

Note. TRFad = anxiety/depression, TRF wd = withdrawal, TRFint = internalizing behavior, TRFext = externalizing behavior, TRFtp = total problems, TRF som = somatic complaints, TRFtp = thought problems, TRFatt = attention problems, TRFrb = rule breaking, and TRFagg = aggression

Asterisks indicate significant sex differences within delinquency level

*. Significance at the .05 level (2-tailed).

**. Significance at the .01 level (2-tailed).

***. Significance at the .001 level (2-tailed).

predicted increasing total change scores. Girls had higher levels of total problem behavior change scores overall. The interaction effect is illustrated in Figure 4. Boys' and girls' total problem behavior change scores are plotted at low and high delinquency levels. Low and high delinquency levels were determined by a mean-level cutoff. As Figure 4 shows, there is a sharp increase in total behavior change as delinquency levels increase for boys, whereas the increase is much less dramatic for girls. High delinquency girls also experienced much less total behavior change than high delinquency boys did.

A parallel multiple regression was conducted in order to determine the relationship between the independent variables and changes in externalizing behavior obtained from TRFs. The regression was significant, $F(4, 116) = 17.33$, $p = .000$, $R^2 = .37$. Age was not a significant predictor variable. Delinquency ($\beta = .86$, $p = .000$) and the interaction of delinquency and sex ($\beta = -.40$, $p = .032$) had significant effects, and the effect of sex ($\beta = 23.23$, $p = .052$) was marginally significant. High delinquency levels predicted more positive change, and boys experienced marginally more change in externalizing behavior than girls. Figure 5 illustrates the interaction effect.

As Figure 5 shows, there is a sharp rise in positive change scores for boys with rising levels of delinquency, and this rise is shallower in girls. High delinquency boys experienced more positive change for externalizing behavior than did high delinquency girls.

A similar regression was performed on TRF ratings of internalizing behavior. The regression was significant, $F(4, 116) = 2.59$, $p = .040$, $R^2 = .08$, and age was not a significant predictor. Delinquency level ($\beta = .25$, $p = .014$) and sex ($\beta = 27.82$, $p = .006$) both significantly predicted internalizing change. Higher levels of delinquency

Figure 4. Change in total problem behavior for boys and girls at low and high levels of delinquency.

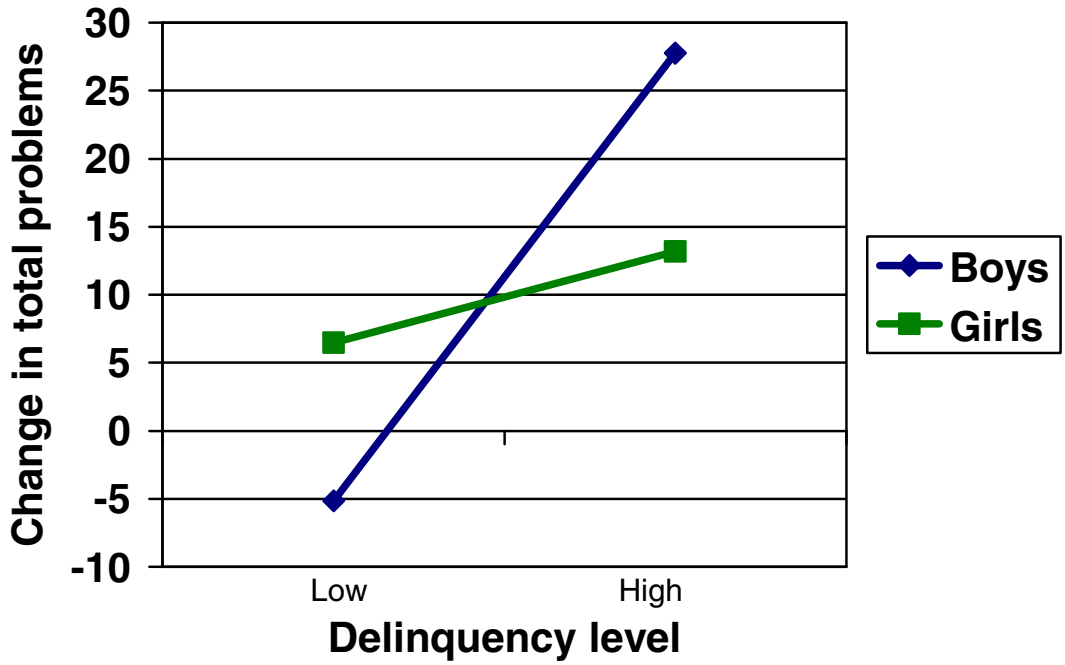
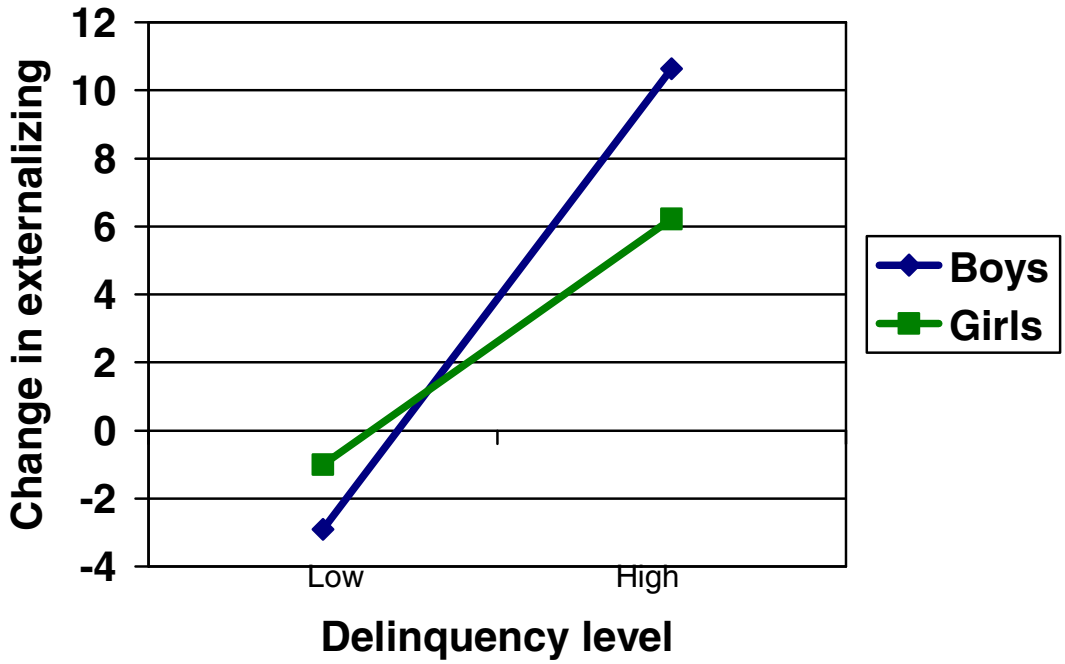


Figure 5. Change in externalizing behavior for boys and girls at low and high levels of delinquency.



predicted higher levels of positive change in internalizing behavior, and girls experienced more change overall. The interaction effect was also significant (β = -.42, p = .009). Figure 6 illustrates this interaction effect.

As shown in Figure 6, delinquency was positively related to internalizing change in boys, with high delinquency boys improving more. In contrast, the relationship between delinquency and internalizing change was negative for girls, with high delinquency girls experiencing slightly less change than low delinquency girls. The figure also shows that although low delinquency girls experienced much more change than low delinquency boys, high delinquency girls experienced less change than did high delinquency boys. This outcome is consistent with the previous pattern of findings.

Narrow symptom scores. To further explore symptom change in delinquent youth and how it might be affected by deviancy training, narrow band symptom measures were next examined. A multiple regression was performed to determine the relationship between delinquency, sex, and changes in TRF anxiety/depression scores. The regression was significant, $F(4, 116) = 2.57$, p = .042, R^2 = .08. Age was not a significant predictor of anxiety/depression change. Delinquency level (β = .17, p = .011) and sex (β = 15.86, p = .014), as well as the interaction of the two (β = -.24, p = .020), were significant predictors. Increasing delinquency levels predicted increasing anxiety/depression change scores, and girls experienced more change. Figure 7 illustrates the interaction of delinquency level and sex on anxiety/depression change scores.

As illustrated in Figure 7, whereas boys' anxiety/depression change scores increased drastically with increasing levels of delinquency, girls' scores decreased with

Figure 6. Change in internalizing behavior for boys and girls at low and high levels of delinquency.

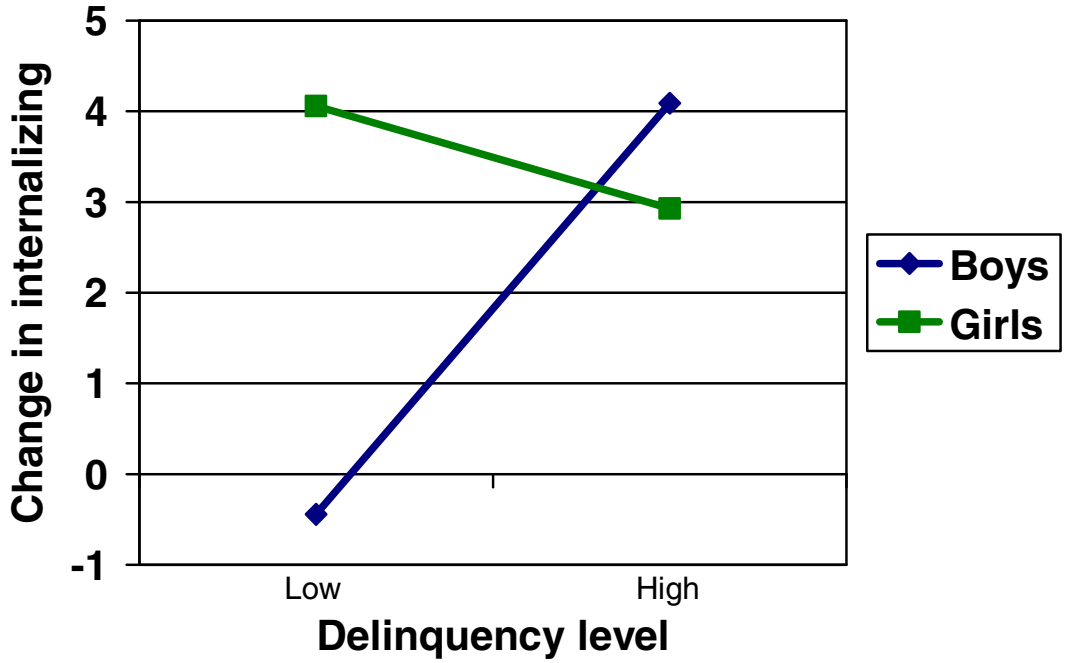
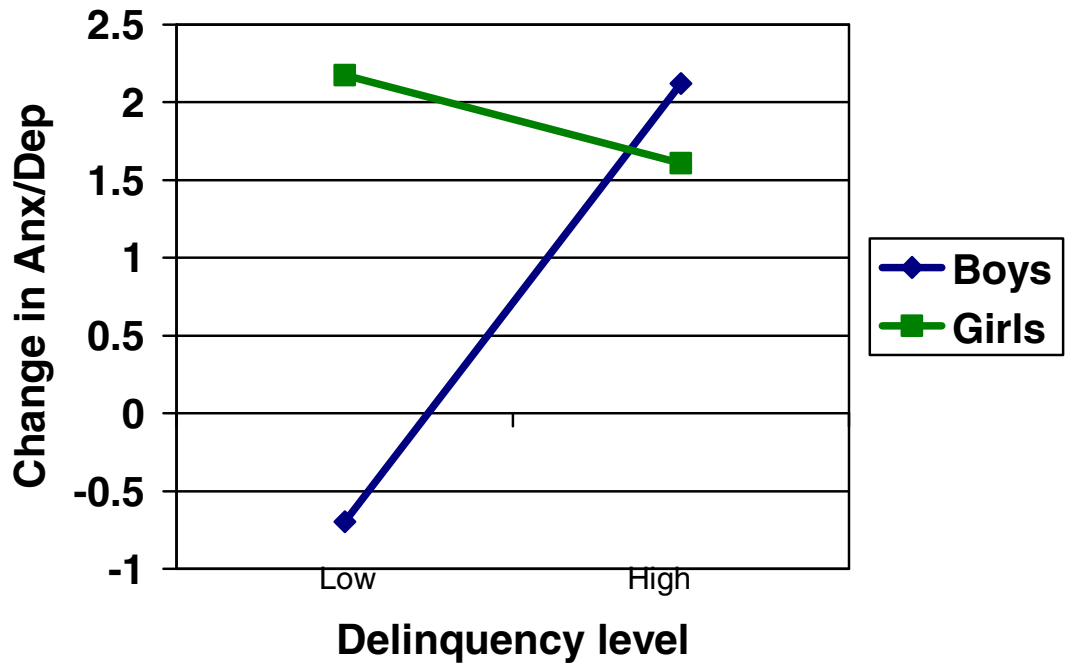


Figure 7. Change in anxiety/depression for boys and girls at low and high levels of delinquency.



increasing delinquency levels. High delinquency boys changed more in terms of anxiety/depression change scores than did high delinquency girls.

Another multiple regression was conducted with TRF ratings of social problems as the dependent variable. The regression was significant, $F(4, 116) = 3.55$, $p = .009$, $R^2 = .11$. Age was not a significant predictor, but delinquency level ($\beta = .15$, $p = .001$), sex ($\beta = 11.45$, $p = .012$), and the interaction ($\beta = -.18$, $p = .013$) were significant. Girls experienced more total change in social problems than boys, and higher levels of delinquency predicted more positive change. Figure 8 illustrates the interaction effect.

Figure 8 shows that increasing delinquency levels predicted large increases in social problem change scores for boys. But, for girls, increasing levels of delinquency predicted decreasing social problem change scores. Again, high delinquency girls changed less than did high delinquency boys.

Next, a multiple regression was performed with TRF ratings of attention problems as the dependent variable. Again, the regression was significant, $F(4, 116) = 10.78$, $p = .000$, $R^2 = .17$. Age was not a significant predictor. There was a significant main effect of delinquency level ($\beta = .59$, $p = .000$). Increasing delinquency levels predicted increasing positive change in attention problem scores. Sex ($\beta = 31.65$, $p = .004$) and the interaction of the independent variables ($\beta = -.54$, $p = .001$) also made significant contributions to the prediction of delinquency level. Boys experienced more change in attention problems than did girls. Figure 9 illustrates the interaction effect on change in attention problems.

As demonstrated in Figure 9, there is a steep increase in attention problem change scores with increasing levels of delinquency for boys. For girls, increasing levels of

Figure 8. Change in social problems for boys and girls at low and high levels of delinquency.

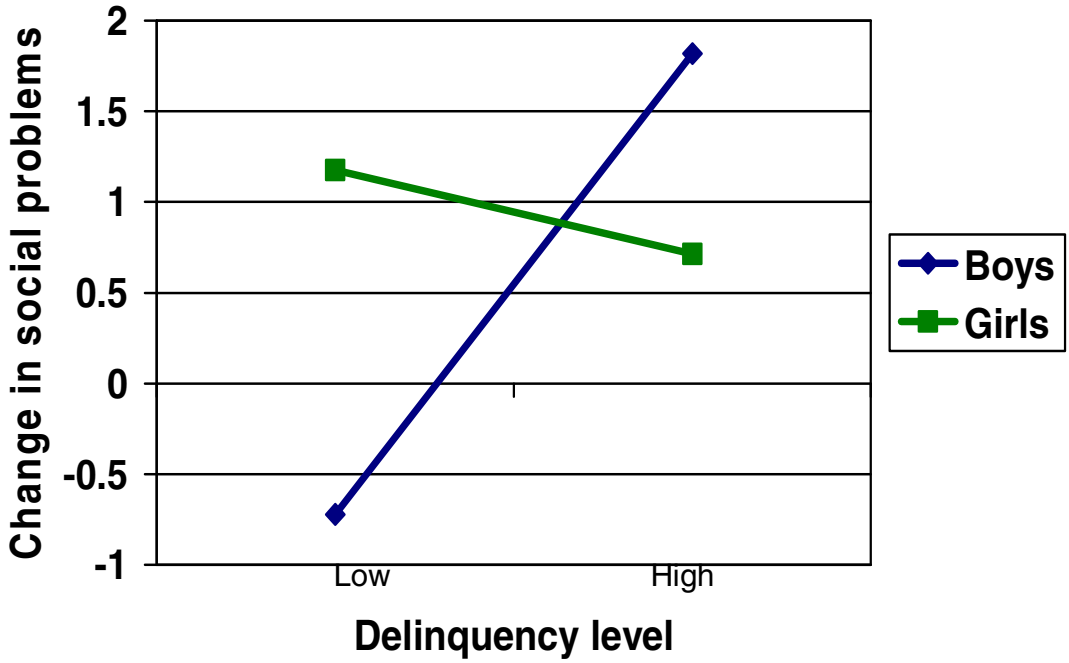
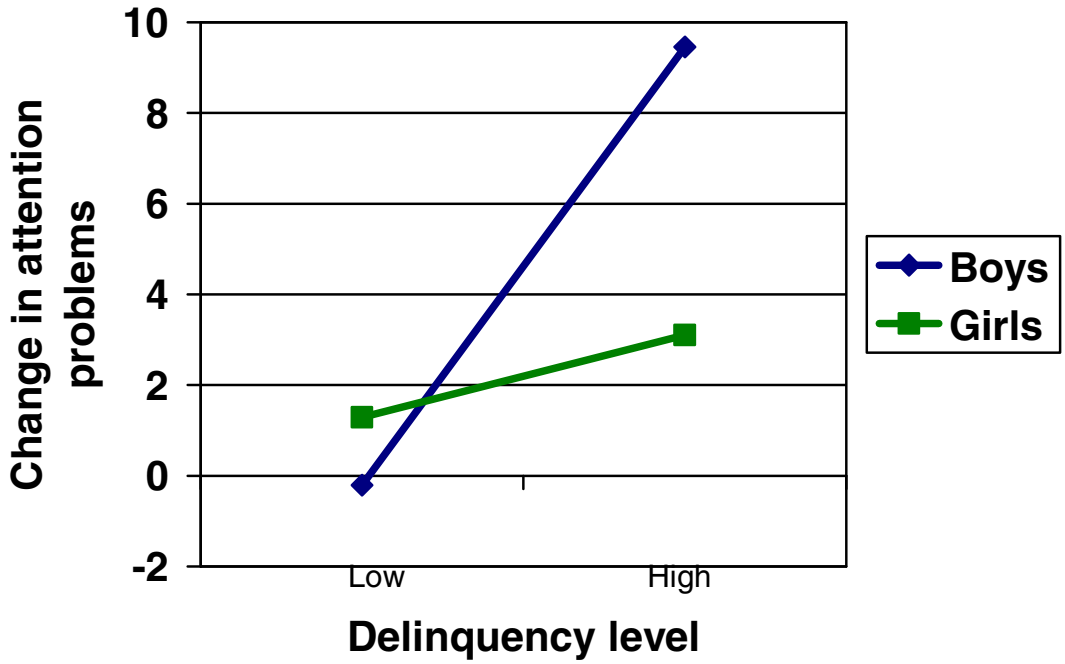


Figure 9. Change in attention problems for boys and girls at low and high levels of aggression.

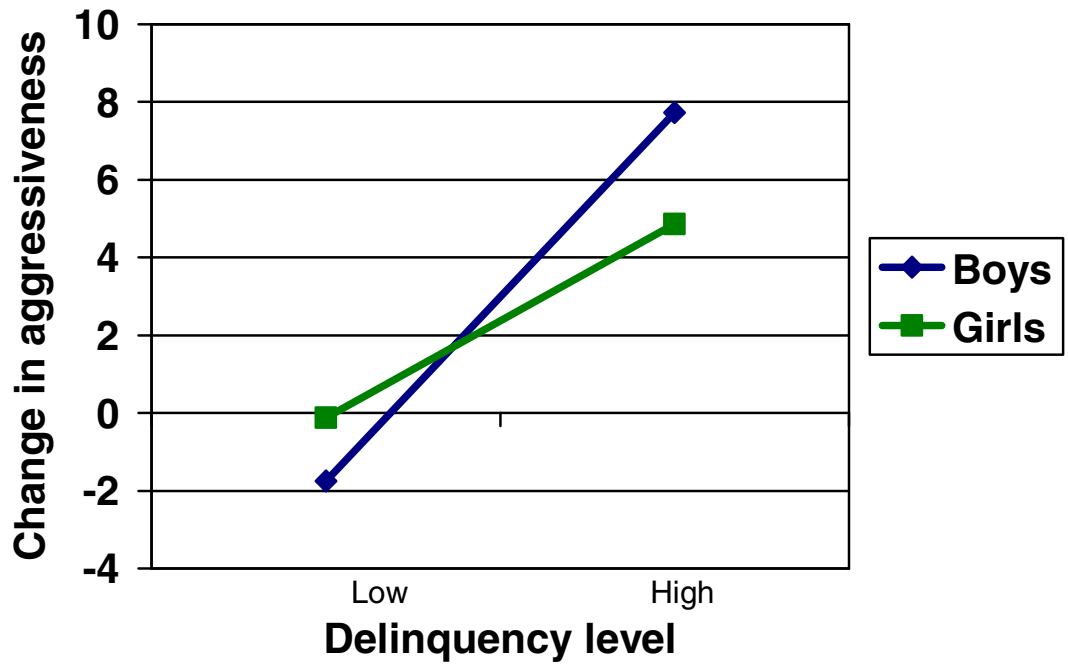


delinquency also predicted more positive change, but the slope is much shallower. Again, high delinquency boys experienced more positive change in attention problems than high delinquency girls did.

Finally, a parallel multiple regression was performed on TRF ratings of aggressiveness change scores. The regression was significant, $F(4, 116) = 12.93$, $p = .000$, $R^2 = .31$, and age was not a significant predictor. Delinquency level ($\beta = .58$, $p = .000$) and sex ($\beta = 19.11$, $p = .043$) were significant predictors. Increasing levels of delinquency predicted more positive change, and girls experienced slightly less change than did boys. The interaction effect ($\beta = -.32$, $p = .031$) was also significant, and is illustrated in Figure 10. Increasing levels of delinquency predict higher positive change scores for both girls and boys, but, in a pattern similar to previous findings, high delinquency girls changed less than high delinquency boys did over the course of the summer.

Parallel regressions were also performed on other staff TRF measures of change. A regression with change in somatic complaints as the dependent variable was not significant, $F(4, 116) = 2.07$, $p = .089$, $R^2 = .07$. Similarly, the regression for thought problem change scores was insignificant $F(4, 116) = 1.92$, $p = .111$, $R^2 = .06$. Also, a regression with change in withdrawal as the dependent variable was not significant, $F(4, 116) = .92$, $p = .453$, $R^2 = .03$. A multiple regression conducted with rule breaking change scores as the dependent variable was significant, $F(4, 116) = 16.73$, $p = .000$, $R^2 = .37$. Delinquency level ($\beta = .28$, $p = .000$) was a significant predictor, but age, sex, and the interaction of delinquency level and sex were not.

Figure 10. Change in aggressiveness for boys and girls at low and high levels of delinquency.



Summary. Analyses of children's behavior scores over the course of the summer treatment program revealed gender differences in a number of problem behavior change scores. Delinquency was more strongly related, in a positive direction, to behavioral improvement for boys than it was for girls. Highly delinquent girls changed less over the course of the summer than highly delinquent boys did in terms of total problem behaviors, externalizing behaviors, internalizing behaviors, anxiety/depression, social problems, attention problems, and aggression. It is important to note, that highly delinquent girls' initial means for these problem behaviors did not differ from high delinquency boys' initial means. This means that highly delinquent boys and girls started the summer at similarly high levels of behavior problems, and the boys decreased more than the girls did.

Follow- up analyses examining the apparent worsening of low delinquency boys. In order to assess the significance of the small negative changes experienced by low delinquency boys that are perceptible in Figures 1 through 9, mean delinquency levels and standard deviations for high and low delinquency boys and girls at the end of the summer were examined. These findings are shown in Tables 6 and 7. High delinquency boys and girls and low delinquency boys and girls did not differ in their raw scores at the end of the summer (see Table 6). In terms of *t*-scores, low delinquency boys and girls differed in terms of externalizing behavior, total problems, attention problems, and rule breaking (see Table 7). Table 7 also shows that, although low delinquency boys experienced slight increases in total problem behavior, externalizing behavior, internalizing behavior, anxiety/depression, social problems, and aggression, they did not approach clinical impairment (*t*-score = 70).

Table 6

End of Summer TRF Raw Score Means and Standard Deviations for Broad and Narrow Band Scales for High and Low Delinquency Boys and Girls

	TRFad	TRFwd	TRFint	TRFext	TRFtp	TRFsom	TRFsoc	TRFth	TRFatt	TRFrb	TRFagg
Hi delinquency											
Boys mean	5.82	4.24	11.33	21.21	59.55	1.27	4.97	2.00	17.88	5.70	15.52
sd	4.59	3.27	7.65	10.33	29.60	2.45	4.16	2.50	9.98	3.20	7.62
Girls mean	6.03	3.68	12.29	22.79	66.04	2.57	5.21	2.96	19.93	6.00	16.79
sd	5.40	3.57	9.73	9.62	31.01	3.85	4.48	3.43	9.32	3.02	7.80

	TRFad	TRFwd	TRFint	TRFext	TRFtp	TRFsom	TRFsoc	TRFth	TRFatt	TRFrb	TRFagg
Low delinquency											
Boys mean	6.07	3.95	10.79	12.93	45.81	0.77	4.23	2.26	13.86	2.86	10.07
sd	6.29	3.55	8.96	10.97	31.86	1.26	3.91	2.91	10.68	2.97	8.75
Girls mean	7.47	5.00	13.58	11.00	44.47	1.12	4.41	2.82	10.47	2.47	8.53
sd	5.16	3.64	7.01	5.33	14.19	1.32	3.41	2.51	4.36	2.07	4.45

Note. TRFad = anxiety/depression, TRF wd = withdrawal, TRFint = internalizing behavior, TRFext = externalizing behavior, TRFtp = total problems, TRF som = somatic complaints, TRFtp = thought problems, TRFatt = attention problems, TRFrb = rule breaking, and TRFagg = aggression

Table 7

End of Summer TRF T-Score Means and Standard Deviations for Broad and Narrow Band Scales for High and Low Delinquency Boys and Girls

	TRFad	TRFwd	TRFint	TRFext	TRFtp	TRFsom	TRFsoc	TRFth	TRFatt	TRFrb	TRFagg
High delinquency											
Boys mean	60.98	59.98	59.93	60.51	59.40*	54.19	62.05	58.46	55.21	57.28	62.07
sd	8.06	8.91	10.24	7.71	8.64	6.18	8.88	9.17	5.92	6.50	8.76
Girls mean	63.29	63.24	64.41	62.77	63.88	56.59	64.29	61.94	58.18	59.06	63.47
sd	8.21	9.52	7.55	6.25	4.36	7.47	7.05	8.32	3.26	6.49	4.68

	TRFad	TRFwd	TRFint	TRFext	TRFtp	TRFsom	TRFsoc	TRFth	TRFatt	TRFrb	TRFagg
Low delinquency											
Boys mean	60.81	61.19	61.84	66.59*	63.66*	56.06	64.13	58.28	57.28***	63.72*	67.47
sd	8.54	7.89	8.71	6.39	8.15	8.58	8.95	8.25	5.94	6.22	7.79
Girls mean	60.54	60.00	61.71	70.43	68.64	59.82	65.18	61.93	64.39	67.39	71.21
sd	9.03	9.88	10.51	5.55	7.41	11.96	10.10	9.92	7.18	5.62	7.76

Note. TRFad = anxiety/depression, TRF wd = withdrawal, TRFint = internalizing behavior, TRFext = externalizing behavior, TRFtp = total problems, TRF som = somatic complaints, TRFtp = thought problems, TRFatt = attention problems, TRFrb = rule breaking, and TRFagg = aggression

Asterisks indicate significant sex differences within delinquency level

*. Significance at the .05 level (2-tailed).

**. Significance at the .01 level (2-tailed).

***. Significance at the .001 level (2-tailed).

Discussion

Since the original Oregon Youth Studies of the 1990s that revealed negative effects in peer groups, deviancy training has gained increasing attention in the study of psychology and child development. Deviancy training in peer groups has been shown to have detrimental long-term effects, and was perhaps first noted in a treatment setting by Dishion et al. in 1999. Supplementary research has revealed increasing support for the notion that intervention programs that aggregate delinquent and/or aggressive youth may have harmful consequences.

In this study, we set out to examine deviancy training in a highly structured, short-term, intensive residential treatment program for severely behaviorally and emotionally disturbed children. The children were ages 7 to 19, with mixed behavior problems. Particular attention was paid to the effect of gender on deviancy training and treatment outcomes. Specifically, we examined the peer status of participants in relation to level of delinquency in order to detect reinforcement through social support for delinquent behavior. Then, we examined change scores to determine if the interaction of delinquency level and gender could predict the amount of positive change throughout the course of the summer.

In general, we found evidence that deviancy training may have a more pronounced effect on girls in a clinical setting than on boys. We found that high delinquency girls in the setting are reinforced for their delinquency more than are high delinquency boys. We also found that high delinquency girls tend to improve less than do high delinquency boys, and found some evidence that high delinquency girls change less than low delinquency girls, which is surprising because children with higher delinquency levels are generally assumed to change more in a clinical setting. Although

the connection between social status and change scores is indirect, there is some evidence that high delinquency girls are being reinforced for their delinquent behavior, and this could be at least in part responsible for less change over the course of the summer.

Peer Support

In this study, we found evidence that high delinquency girls were reinforced more for their delinquent behavior than were high delinquency boys. According to child ratings of peer status, high delinquency boys were liked less by their peers than low delinquency boys were, but this pattern did not hold true for high delinquency girls. Not only were high delinquency girls liked more than were high delinquency boys, but they also were not liked less than their low delinquency female peers. Reinforcement of delinquent behavior for girls was also revealed in both child and staff ratings of peer rejection. High delinquency girls were disliked less than were high delinquency boys, and seem to have not received significant peer rejection in response to their delinquent behavior.

Findings involving peer support for delinquency in a treatment setting are consistent with the work of other researchers. Although most studies seeking to examine iatrogenic effects of peer contagion in a treatment setting do not examine the specific processes of reinforcement and deviancy training, many studies have revealed negative effects of peer association (Cho et al., 2005; Dishion et al., 1999; Leve & Chamberlain; 2005; Warren et al., 2005), and some have uncovered peer reinforcement processes for delinquent behavior (Lavallee et al., 2005). To our knowledge, though, the present study is the first to reveal striking differences between girls and boys in a treatment setting in

terms of reinforcement for delinquent behavior and possible unique effects of the deviancy training process on vulnerable girls.

It is possible that the lack of peer support for high delinquent boys compared to girls at Wediko was a reflection of the differing compositions of the girls' and boys' groups. At Wediko, boys tend to be more behaviorally diverse, and exhibit a wide range of emotional and behavioral problems. Girls tend to be more consistently aggressive. Peer support for aggression may have been more salient for girls than for boys because the girls were interacting and gaining peer support from more purely aggressive and delinquent peers, whereas boys were exposed to peers with more mixed behavior problems. This finding is consistent with Feldman's (1992) suggestion that mixing aggressive and non-aggressive youth in treatment programs may reduce negative deviancy training outcomes.

In addition, Wediko is a unique setting in that it aggregates aggressive and delinquent girls in a manner that is rare in natural settings and even intervention programs. This setting was an advantage for the current investigation because it provided us with a means to examine deviancy training within a fairly large clinical sample of girls. But, it is possible that this characteristic of Wediko may lead to increased peer reinforcement for delinquent behavior in girls. Because aggression and delinquency are fairly rare in girls compared to boys, it is possible Wediko is the first setting in which these girls were in a group setting with other externalizing girls. This newness of delinquent peer association may have led to increased reinforcement and peer support because the girls were, perhaps for the first time, being exposed to other externalizing girls.

Furthermore, although Wediko is a highly structured treatment program and consists of 24-hour strict adult supervision, it is possible that the Wediko staff was less effective in managing delinquent/aggressive behaviors and limiting deviancy training for girls than for boys. For example, some researchers have suggested that girls are more reactive than boys to adult punishment (Zakriski, Wright, & Underwood, 2005). It is possible that their more intense reactions to adult punishment caused staff to withdraw in order to avoid an escalation of aggression, and that aggression was in turn negatively reinforced. This process may have also led to an increase in the social status in girls that were able to behave aggressively and go unpunished.

Change Scores

Additionally, we found evidence that high delinquency girls aggregated with other high-risk children in a clinical setting changed less than did high delinquency boys in terms of total problem behaviors, externalizing behaviors, internalizing behaviors, anxiety/depression, social problems, attention problems, and aggression. Furthermore, whereas high delinquency boys often changed dramatically more than did low delinquency boys (an expected trend), this trend often did not exist for girls. In fact, high delinquency girls sometimes changed less than did those girls with lower levels of delinquency.

In examining the fact that high delinquency girls changed less over the summer than did high delinquency boys, it is important that we rule out the possibility that this was simply a statistical artifact. Because we found that initial means for problem behaviors were generally the same for boys and girls, we were able to rule out the possibility that less change in girls reflected lower initial scores and regression to the

mean (see Tables 4 and 5). In fact, wherever differences between high delinquency boys and girls did exist, girls were initially more significantly impaired than were boys. Thus, we would expect high delinquency girls to change *more* than high delinquency boys if any gender differences existed. It is clear that girls did change less than boys over the course of the summer, and that this outcome was not a simple statistical artifact.

This finding is consistent with those of Hanish et al. (2005), who found that association with externalizing peers predicted problem behaviors for girls more than for boys. But, the results of this research expand on the work of Hanish and her colleagues by examining change in problem behaviors for girls with externalizing problems within a clinical setting. The fact that high delinquency girls were liked more and disliked less than were their high delinquency male peers can be indirectly related to their relatively weak treatment effects. Although causation cannot be inferred from this indirect relationship, this study reveals some evidence that there may be strong deviancy training effects occurring for girls in this treatment setting.

An Ancillary Finding: Low Delinquency Boys

Although we did not set out to examine the effects of aggregation with highly aggressive and delinquent youth on youth with lower levels of aggression/delinquency in this mixed behavior problem setting, we did find some effects for low delinquency boys. Low delinquency boys, though relatively accepted by peers in this treatment setting, tended to get slightly worse over the course of the summer in terms of many of the examined change scores. Low delinquency boys tended to experience slight increases in total problem behavior, externalizing behavior, internalizing behavior, anxiety/depression, social problems, and aggression. Although these negative changes

were quite small and did not raise these boys' problem behaviors to even close to a clinical level (see Table 7), there is some evidence that aggregation with aggressive and delinquent youth can have negative effects on low-externalizing children, specifically boys. It is important to remember, though, that findings shown in Tables 4 and 5 reveal that low delinquency boys began the summer program at lower levels of delinquency than low delinquency girls did. Thus, boys' lack of positive change can be explained by simple regression to the mean. Because they were less impaired, they had fewer potential gains to make. The changes experienced by low delinquency boys may be at least in part a statistical artifact. It is also possible, though, that the negative change experienced by low delinquency boys is a real effect, as other researchers have found.

Some researchers have examined the effects that aggregation with highly delinquent children or adolescents can have on low-risk youth. For example, the study by Hanish et al. (2005) examined the effects of externalizing peers on behavior of low-risk children. This study, though, did not directly examine the treatment gains or losses made by low-risk children in relation to high-risk ones. Additionally, a study by Mager et al. (2005) compared the effects of aggregation of high-risk youth to the effects of a mixed-problem treatment program, but these researchers focused primarily on peers for only the externalizing youth.

Perhaps the study most relevant to the present study's findings for low-delinquency boys is the 2005 study by Boxer et al. in which the researchers found that children with varying levels of aggressiveness were "pulled" in the direction of the group in which they were placed. According to these researchers, a child whose initial aggressiveness level was lower than that of his group members tended to become more aggressive after participating in the group intervention program, and a child whose level

of aggressiveness was higher than that of his group members tended to become less aggressive. Although Boxer et al.'s participants were all at high risk for developing future aggressive or delinquent behavior, the present study extends these researchers' study to a sample of children that was at relatively low risk for developing externalizing behaviors, and was being treated in a program with a majority of aggressive or delinquent youth.

Although we found deviancy training to be more highly associated with high delinquency for girls than for boys at Wediko, the fact that low delinquency boys got slightly worse in terms of a variety of measures suggests that low delinquency boys may be affected more by deviancy training than low delinquency girls are. It is possible that the statement that girls in a treatment program are most vulnerable to peer contagion effects is too simple to capture the complex processes that results in negative peer effects for both high delinquency girls and low delinquency boys.

Limitations and Future Directions

Although the results of this study point to interesting gender effects in the process of deviancy training, limitations of the study prevented the investigation from directly examining the deviancy training process and from being able to make any claims about causation. Detailed behavior coding of laughing or smiling in response to deviant talk in a controlled laboratory setting is a more direct measure of deviancy training than was employed in the current study, but this approach was not possible in the clinical setting. The measures of peer social status ("like most" and "like least" nominations) and peer experiences (child and adult ratings of peer positives and negatives) used in this study were chosen because they are good indices of peer positive responses to children, and

could be obtained outside of a laboratory. Whenever possible, though, it is important that adult measures of deviancy training include detailed ratings of deviant talk and reinforcement of deviant talk. Very recent research on deviancy training within clinical settings has used these more sophisticated measures, and is able to draw more direct connections between peer support and treatment effects than were the measures employed in this study.

In light of the findings of the current investigation, it is necessary for additional studies to be conducted on the gendered process of deviancy training. It is important that future research directly examines the potentially different deviancy training processes that occur for clinical samples of boys and girls, and the effects of gender differences on treatment outcomes. Additionally, it is necessary that effects of deviancy training in mixed behavior settings be examined not just for those at high levels of risk, but for all participants, while taking into consideration relative levels of delinquency/aggression and gender.

Furthermore, it is necessary for researchers to examine the effects of other demographic variables on deviancy training. It is possible that racial/ethnic, cultural, or socioeconomic factors could affect the deviancy training process. In addition, attention must be paid to the types of programs that are examined for deviancy training effects. Also, attempts must be made to isolate and control for variables that may affect the presence or absence of deviancy training, such as program structure, supervision, and supplementary aspects of the program (such as family counseling or community service work).

In terms of methodology, it is important that sound methods of measuring deviancy training be developed and replicated. Observations and videotaping seem to be

the most useful in measuring levels of deviant talk and reinforcement, but this method of data collection is often not possible. Random assignment of subjects to differing types of intervention groups is also critical (e.g., peer group treatment versus individual or family treatment), although this is often difficult to accomplish in the evaluation of existing programs and settings (Dishion & Dodge, 2005).

Finally, some recent studies have uncovered new aspects of deviancy training that must be further explored. For example, in their study of the deviant and health risk behaviors of 120 11-graders and their best friends, Prinstein and Wang (2005) identified that aggression was associated with overestimations of friends' deviant behaviors. Participants' behaviors were more related to their *perceptions* of their friends' behaviors than to their friends' actual behaviors. This finding suggests that deviancy training through deviant talk may have more to do with a false consensus effect than peers' actual levels of delinquency. This finding needs to be further investigated, as it could have important implications for intervention and treatment programs.

Conclusions

In this study, we set out to examine the effect of gender on the deviancy training process in a clinical treatment setting. We found evidence that social support (as measured by high levels of peer liking and low levels of peer rejection) for delinquent behavior was more pronounced for girls than for boys. Furthermore, when change scores in problem behaviors were examined, we found that highly delinquent girls improved less over the course of the summer than highly delinquent boys did, and sometimes even less than low delinquency girls did. Although a direct causal relationship was not revealed by this research, the findings suggest that deviancy training may have been present in this

setting, and may have been more pronounced and important for girls. It is necessary for future research to attempt to isolate and examine the specific effects of gender on the process of deviancy training in a clinical setting, and the unique effects of deviancy training on treatment outcomes. Gender differences in deviancy training may have important implications for the types of treatment programs that are appropriate for girls versus boys, and for interventions used to control deviancy training and maximize the clinical effectiveness of group-based treatment programs.

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Appendix B

Appendix C