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## Enhancing the effectiveness of social skills interventions with adolescents

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**Abstract:** Competent social interactions are clearly necessary for adjustment and successful functioning in society. The many developmental events and changing social expectations that occur during adolescence can make it particularly challenging for youth to establish and maintain competent social interactions. Research on social skills training with adolescents began in the mid-to-late 1970's and it has improved much over the years. The research has gradually moved beyond a focus on basic skill assessment and acquisition in clinical settings toward techniques designed to assess and promote generalization and maintenance of an effective interpersonal repertoire in real world settings and situations. This article discusses major advances and issues in social skills research with adolescents, including efforts to facilitate treatment adherence, social validity, and generalization of interventions. Directions for further improvement of our social skills intervention technology are discussed.

Effective social interactions are necessary for emotional and behavioral adjustment, and successful functioning at home, school, work, and social settings (cf. Hansen, Giacoletti, & Nangle, 1995; Hartup, 1989; Kelly & Hansen, 1987; Petersen & Hamburg, 1986). It can be especially challenging for adolescents to establish and maintain competent social interactions because of the many developmental changes that occur. The physical and emotional changes associated with puberty, as well as the more advanced cognitive and verbal abilities, impact the adolescent's interactions with both peers and adults (Bierman & Montminy, 1993; Hansen et al., 1995; Kelly & Hansen, 1987). Social interactions and relationships become increasingly complicated and adult-like, as the peer group becomes larger and more complex, more time is spent with peers, and interactions with opposite-sex peers increase (Csikszentmihalyi & Larson, 1984; Petersen & Hamburg, 1986). In addition, adolescents may experience a variety of other changes that affect social relationships, including school and peer group changes, changes in

family structure or functioning, and alterations in societal and community expectations (Hansen et al., 1995; Petersen & Hamburg, 1986).

The importance of social behaviors is evidenced by their important role in the identification of adolescent psychopathology. For example, the majority of the diagnostic categories included in the current Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) that are applicable to children and adolescents include social functioning as a component of the disorder. Approximately 45% of the Axis I Clinical Syndromes and nearly all of the Axis II Personality Disorders have problematic social functioning as a possible criterion, and the majority of the others have social implications (Hansen et al., 1995). Social-skills deficits are often present among adolescents who exhibit disruptive, externalizing behavior problems such as delinquency and conduct disorder (e.g., Dishion, Loeber, Stouthamer-Loeber, & Patterson, 1984; Freedman, Rosenthal, Donahue, Schlundt, & McFall, 1978; Hansen, St. Lawrence, & Christoff, 1988). Social-skills deficits have also been associated with a number of internalizing disorders such as depression or anxiety (e.g., Christoff, Scott, Kelley, Schlundt, Baer, & Kelly, 1985; Platt, Spivack, Altman, Altman, & Peizer, 1974; Sarason & Sarason, 1984). Additional problems associated with social-skills deficits include substance abuse, sexual offending, academic and vocational problems, loneliness, and unplanned pregnancy and sexually transmitted diseases (Hansen et al., 1995; Nangle & Hansen, 1993). The relationship between social-skills deficits and such adjustment problems is bi-directional. For example, social skills deficits lead to adjustment problems including social isolation; social isolation and adjustment problems can result in limited opportunities to engage in social interaction which then limits the opportunity to further develop social skills (Hansen et al., 1995; Hartup, 1989). This can be particularly problematic for adolescents, for whom there is rapid, widespread change occurring, including biological and physical maturation, cognitive and emotional changes, social expectations, and peer group changes (Bierman & Montminy, 1993; Peterson & Hamburg, 1986).

In recognition of the extent and severity of the problem of social skills deficits, the field of social skills interventions with adolescents emerged in the mid-to-late 1970s and it has changed much over the years (Christopher, Nangle, & Hansen, 1993). The early work in this field mostly concentrated on aggressive, conduct disordered youth in inpatient or residential settings, and the primary focus of intervention was conversational or assertiveness skills (e.g., Arkowitz, Hinton, Perl, & Himadi, 1978; Bradlyn, Himadi, Crimmins, Christoff, Graves, & Kelly, 1983; Elder, Edelstein, & Nar-

ick, 1979) More recently, we have seen an explosion of potential target populations and issues. For example, as noted in the articles in this issue, sexual and heterosocial issues (Nangle & Hansen, in press), attention-deficit/hyperactivity disorder (Dumas, in press), and violence prevention (Meyer & Farrell, in press), are now areas of inquiry. Other investigators in the field have also worked with diverse populations such as persons with emotional disorders (e.g., Plienis et al., 1987; Schloss, Schloss, & Harris, 1984), heterosocial anxiety and dating problems (e.g., Arkowitz et al., 1978; Schinke, Blythe, & Gilchrist, 1981), substance abuse (e.g., Englander-Golden, Elconin, & Satir, 1986; Gilchrist, Schinke, Trimble, & Cvetkovich, 1987), and physical or developmental disabilities (e.g., Bradlyn et al., 1983; Lemanek, Williamson, Gresham, & Jensen, 1986). The interventions have generally consisted of skills training procedures (i.e., instruction, modeling, rehearsal, feedback, and praise) conducted directly with the individual youth in a clinical treatment setting. Interventions with adolescents typically consist of combinations of several target skills, often including components of conversation or communication-skills (e.g., Bradlyn et al., 1983; Hansen, St. Lawrence, & Christoff, 1989; Plienis et al., 1987), assertiveness skills (e.g., Kirkland, Thelen, & Miller, 1983; Rotherman & Armstrong, 1980), and social problem-solving skills (e.g., Christoff et al., 1985; Hansen et al., 1990; Kazdin et al., 1987; Plienis et al., 1987; Tisdelle & St. Lawrence, 1988).

Although social skills training has been widely used, its effectiveness at achieving generalization, maintenance, and socially relevant effects has frequently been questioned for both adolescents (e.g., Christopher, Nangle, & Hansen, 1993; Fox & McEvoy, 1993; Hansen, Watson-Perczel, & Christopher, 1989) and children (e.g., Berler, Gross, & Drabman, 1982; Conger & Keane, 1981; Foxx, Faw, & Weber, 1991; Gresham & Lemanek, 1983). A variety of issues can interfere with provision of effective social skills interventions to youth (Fox & McEvoy, 1993; Hansen, Watson-Perczel, & Christopher, 1989). Problems may include, but certainly are not limited to, family problems (e.g., parent-child conflict, child abuse), negative peer group influences (e.g., gang activity), oppositional behavior and conduct problems, substance abuse problems, and limited cognitive abilities. In addition, adolescents are often referred for psychological services involuntarily or under duress. This makes it difficult to elicit necessary and accurate information and to establish the credibility and rapport with the adolescent that will likely increase their motivation to change their behavior. Also, the assessment and treatment of adolescents is complicated by the fact that adolescents have many different peers, peer groups, and interactions with peers in a variety of settings.

Despite such challenges, the social skills research with adolescents has moved beyond an emphasis on basic skill assessment and training in clinical settings toward research characterized by techniques designed to assess and promote generalization and maintenance of an effective interpersonal repertoire (Christopher et al., 1993; Hansen, Watson-Perzel, & Christopher, 1989). We need to look more at what the research has shown us about enhancing the effectiveness of social-skills intervention methodology with an eye toward improving our practice efforts. Given the significant impact of social skills problems on adolescents, as well as the complex and challenging treatment picture and the difficulty of having lasting impact, it is important to learn more about how to enhance treatment adherence, social validity, and generalization of our social skills interventions. It is clear that if adolescents do not actively participate in treatment, if the effects are not at socially relevant or functional levels, or if the effects of intervention do not maintain over time or generalize across settings, then social skills deficits and other interpersonal problems will continue. There is, however, significant overlap between the concepts of treatment adherence, social validity, and generalization. For example, the more socially valid the goals and procedures, the more likely the youth will adhere to treatment. The more likely the youth is to participate in treatment, the more likely the effects will generalize and maintain. Finally, effects that have been generalized and maintained will be more likely to be socially valid and functional.

This article discusses current issues and procedures for enhancing the effectiveness social skills interventions with adolescents, including efforts to facilitate treatment adherence, social validity, and generalization of interventions. Directions for further improvement of our social skills intervention technology are described.

### **Treatment Adherence**

Compliance with treatment may pose a significant problem to those working with adolescents (e.g., Hansen et al., 1990; Jackson & Marzillier, 1982; Rotherman & Armstrong, 1980; Schloss et al., 1984). Because adolescents are generally striving to be more autonomous and adult-like (Kelly & Hansen, 1987; Peterson & Hamburg, 1986), they may be reluctant to participate in procedures that seem as if they are being directed, rather than choosing, to participate or behave in a certain way (Hansen et al., 1989). Often, an adolescent is referred for treatment by the school system or by the parents, thus the therapist may be considered to be in an adversarial position. Therefore, the therapist must be sensitive to the adolescent's interpretation of the therapy context and make a deliberate effort to establish a constructive working relationship with the youth (Hansen et al., 1989).

The youth may also have difficulty acknowledging the presenting problem. The therapist may need to assess whether the youth's lack of problem identification is a result of a skill deficit or a deliberate refusal to address the issue. An adolescent may be particularly resistant to disclosing personal and intimate information to a therapist who is a relative stranger; therefore, establishing a stable and strong rapport with the youth is again critical (Hansen et al., 1989).

Dropping out of treatment is a common problem for adolescents and their families (Armbruster & Kazdin, 1994; Kazdin, Holland, & Crowley, 1997). As many as 40-60% of families who begin treatment for child-related issues terminate prematurely (Kazdin, 1996; Kazdin et al., 1997). A variety of factors may influence continued participation in therapy and treatment dropout. For example, Kazdin et al. (1997) studied barriers to participation in treatment for outpatient families of youth with conduct problems and aggression, who were participating in problem-solving skills training for the child and/or parent-management training. Barriers associated with dropping out included stressors and obstacles associated with treatment (e.g., events that interfere with participating in and coming to treatment, conflict with a significant other about coming to treatment), parent perceptions that treatment was not very relevant, and a poor relationship between the parent and therapist. Other characteristics associated with dropping out of child and adolescent therapy include low socioeconomic status, and family and parental stress and dysfunction (Armbruster & Kazdin, 1994; Kazdin et al., 1997).

Treatment adherence has been defined as the "active, collaborative, voluntary involvement of a client in a mutually acceptable course of behavior to produce a desired preventative or therapeutic result" (Meichenbaum & Turk, 1987, p. 20). At least three types of adherence are needed in most clinical interventions: (a) attending sessions regularly, (b) participating within sessions, and (c) completing out-of-session assignments. Adherence problems can be evidenced in treatment at both micro and macro levels (Lundquist & Hansen, 1998; Sutton & Dixon, 1986). At the micro level, resistance is evidenced by challenges, disagreements, disqualifications, and other negative verbal responses to therapist suggestions. At the macro level, resistance is evidenced by failure to complete homework assignments, missing appointments, and dropping out of treatment.

Very little research has addressed adherence issues with adolescents in general or for social skills interventions for any age. Overall, session attendance is the most obvious and easily observed form of adherence. Youth must be where the therapist is or where the intervention is to occur for it to have any impact. Participation within sessions is the most complicated and

least understood aspect of adherence. Within session adherence responses include talking about relevant topics, following session goals and procedures, and practicing skills within the session. Completion of assignments outside of therapy sessions (i.e., homework) is a critical form of adherence of social skills interventions that encompasses a wide variety of responses (e.g., self-monitoring, completing questionnaires, implementing newly-learned skills).

Assessment and contextual considerations. There are many reasons for noncompliance, and there is not a simple linear relationship between attendance at sessions and treatment outcome. This relationship is moderated by setting events and contextual factors. For example, a youth's failure to adhere to a treatment program may not be simply because of noncompliance or resistance; it may be that the youth's behavior patterns, peers, or even family influence the youth in other directions (e.g., drug use, delinquency, oppositional behavior). In addition, other contextual factors, such as family violence, school problems, social isolation, parental illness or unemployment, and so forth, can also interfere with treatment. Finally, a variety of specific problems can arise, such as transportation problems, illness, forgetting, and parent or family concerns about obtaining mental health services. Adherence responses are likely to be under the control of some or many of these contingencies operating simultaneously.

Therapists must take an idiographic approach to the assessment of each youth's resistance and adherence responses, and must examine the unique maintaining factors for each individual (Lundquist & Hansen, 1998; Newman, 1994). A functional analysis of the conditions that elicit, maintain, and prevent adherence responses is essential. Newman (1994), for example, recommends that therapists consider questions such as the following: (a) "What is the function of the client's resistant behaviors?"; (b) "How does the client's current resistance fit into his or her developmental/historical pattern of resistance?"; (c) "What might be some of the client's idiosyncratic beliefs that are feeding into his or her resistance?"; (d) "How might the client be characteristically misunderstanding or misinterpreting the therapist's suggestions, methods, and intentions?"; (e) "What skills does the client lack that might make it practically difficult or impossible at this point for him or her to actively collaborate with treatment?"; (f) "What factors in the client's natural environment may be punishing the client's attempts to change?"; and (g) "Does my conceptualization of this case need to be revised or amended?" (pp. 51-55).

Antecedent and consequent strategies. In addition to a specific functional analysis of each client's adherence, there are a variety of general antecedent

and consequent strategies which may facilitate treatment adherence. For example, antecedent strategies which may be helpful in facilitating treatment adherence include the following: having an empathic and skilled therapist; involving the youth in goal and procedure selection; providing assurances that, within identified and reasonable limits, the youth's privacy and confidentiality will be respected; providing additional stimuli such as reminder cards; beginning with small homework requests and gradually increasing assignments; ensuring assignments contain specific details relevant to the desired behavior; and providing specific training for tasks to be implemented (Lundquist & Hansen, 1998; Shelton & Levy, 1981).

Along with antecedent strategies, there are several consequent strategies which may facilitate adherence. Use of shaping procedures can be very useful (e.g., reinforcing behaviors that increasingly approximate the desired goal). During a social skills training program with inpatient adolescents, Foxx et al. (1991) paid the youth fifty cents to reinforce participation. Initially youth received the money contingent upon participation, regardless of performance. As training progressed the contingency changed such that the money was paid if the youth completed a prespecified number of role-play situations correctly. The criterion level for the correct number of situations was individually determined for each student based on previous performance. Near the end of training the financial reinforcement was discontinued but social reinforcement continued.

Another strategy for addressing noncompliance can be to hold out preferred intervention activities until the youth performs less preferred activities. Hansen et al. (1990), for example, rewarded a reluctant adolescent girl with five minutes of "client time" at the end of the session for her participation in assessment and treatment procedures. During client time the youth could, talk about anything she desired with her therapist or share stories that she had written. Investigators have also used snacks during session breaks as an incentive for participation (e.g., Schloss et al., 1984). Of course, social reinforcement contingent upon participation in assessment or training procedures is common (e.g., Hansen et al., 1989; Plienis et al., 1987; Schloss et al., 1984). In group interventions, members of the group can be instructed to provide social reinforcement to other youth who engaged in appropriate target behaviors (e.g., Schloss et al., 1984).

Several approaches use both antecedent and consequent strategies, such as working with referral sources (e.g., schools, parents or guardians, probation officers), advocating for the youth (e.g., providing support for interactions with teachers, parents, etc.), using procedures that are acceptable to the youth and significant others, using self-management and self-reinforce-

ment strategies, and anticipating and reducing the negative effects of compliance (Christopher et al., 1993; Hansen, Watson-Perczel, & Christopher, 1989). It can be useful to have parental involvement in prompting and reinforcing a youth's participation in assessment, therapy, and homework assignments (e.g., Hansen et al., 1990). If the adolescent's environment undermines adherence, the therapist should frequently reinforce compliance, assist the youth with integrating self-reinforcement, provide stimulus cues (i.e., prompts, reminders) when possible, and closely monitor compliance with as many sources as possible. Thus, attempts are needed to prevent or remove obstacles that may impede the adolescent's progress before they become barriers.

Adherence can also be increased when efforts are made to solicit ongoing feedback from clients about the acceptability of goals, procedures, and effects (Hansen, Watson-Perczel, & Hansen, 1989). Efforts to collaborate and compromise with youth regarding treatment expectations and approaches, and pro-active problem-solving for potential obstacles to adherence, can be valuable to improve participation. Reviewing the pros and cons of continuing with the status quo versus changing may also be useful. In addition, it may be valuable to provide direct attention to non-adherence responses, including having open discussions, eliciting disagreements, and presenting alternative viewpoints (Shelton & Levy, 1981).

In response to adherence difficulties, some investigators have attempted innovative approaches for improving participation. For example, after finding poor attendance and little generalization of skills from a social skills training group run at an outpatient clinic, Jackson and Marzillier (1982) established a Youth Club, which met in a community setting, and included games, structured activities, and refreshments. Attendance, as well as generalization across social activities and maintenance over time, appeared to be facilitated by the Youth Club approach. Similarly, Anderson et al. (1987) implemented social-skills training in a basketball program for behaviorally disordered youth. The basketball program provided an enjoyable, interactive context for training and reinforcing prosocial behaviors (e.g., talking, cooperating, sharing).

### **Social Validity**

Social validity refers to the acceptability and viability of the goals, procedures, and outcomes of intervention (Kazdin, 1977; Schwartz & Baer, 1991). In order to facilitate the social validity of interventions, therapists need to consider whether the treatment goals are what the youth, the family and/or society wants and whether achieving the goals would actually im-

prove the adjustment and effectiveness of the individual. Most interventions have consisted of teaching behaviors to clients that therapists assumed were important, to levels that therapists assumed were appropriate. The behavioral goals of the therapist (e.g., improved social skills, less aggression) may not match those of the youth (e.g., defiance). When the goals of the therapist are not socially valid to the youth, the likelihood of treatment adherence will be decreased. Considering specific goals of the youth can enhance social validity because they are more likely to be satisfied with the results of therapy when treatment is targeted toward areas of their lives they deem as important.

Offering youth a treatment they find acceptable increases the likelihood that the intervention will be used appropriately (Kazdin, 1980). Therapists also need to consider whether the parents and family members consider the assessment and treatment procedures acceptable, as they may be influential in the outcomes. In addition, therapists should determine whether clients and relevant others are satisfied with all of the effects of treatment. Essentially, evaluation is needed regarding whether behavior changes of individual, clinical, social, or applied importance have been achieved. It is important to determine whether the youth are benefitted by treatment to functional (i.e., useful) levels.

Given the amount of social skills training literature that has accumulated to date, it is somewhat surprising that there is a dearth of literature on the development and evaluation of social skills training programs that address gender-specific needs and issues. Even though the developmental literature points to an array of differences in the ways that males and females are socialized and how they relate to others (e.g., Fagot, Leinbach, & Hagen, 1986; Hartup, 1983), there has been very little attention to gender specific issues and interventions in the social-skills literature (Conger & Keane, 1981; Crombie, 1988). However, by addressing gender differences in adolescence, the effectiveness of social skills programs could likely be enhanced (Crombie, 1988). Intervention research to date has tended to either focus on one gender or include both genders without systematic evaluation or consideration gender-specific issues.

Another area that has also lacked specific attention in the social-skills training research is that of cultural diversity. In addition to the need to understand cultural differences in social behaviors and interaction patterns, there is a need to understand the effectiveness of social skills interventions when the therapist is culturally different from the youth, and whether the effectiveness of social skills assessment and intervention procedures vary across cultural groups (Cartledge, Lee, & Feng, 1995; Tharp, 1991). There has been minimal

research attention to tailoring social skills interventions to people of specific ethnicities, yet the need to do so is apparent (Cartledge & Kleeefeld, 1991; Cartledge et al., 1995; Tharp, 1991). Ultimately, successful social validation procedures should consider the influence of gender and cultural issues.

Strategies to enhance social validity are dependent on assessing social validity targets including the goals, methods, and outcomes of intervention. Hansen, Watson-Perczel, and Christopher (1989) suggested that for social skills training investigations to be sensitive to social validity they should address: (a) selection of socially valid behaviors, (b) demonstration of the need for treatment and socially valid improvements in performance, and (c) evaluation of the acceptability of treatment goals, procedures, and effects by the youth and others.

### **Selection of Socially Valid Behaviors**

The selection of target behaviors that are related to successful interpersonal interactions is an important part of social skills intervention. Investigators have identified important social behaviors by examining the relationship between global ratings of social skill and ratings of specific social-skill component behaviors (e.g., Hansen et al., 1988; Jackson & Bruder, 1986). Investigators have also used "social-validation samples" (e.g., Hansen et al., 1989; Tisdelle & St. Lawrence, 1988) to identify target behaviors. The rationale is that by showing that the youth are deficient in particular behaviors when compared to similar-age, same-sex "normal" peers who are successfully functioning, then these must be relevant skills (Hansen, Watson-Perczel, & Christopher, 1989). For example, Tisdelle and St. Lawrence (1988) demonstrated that inpatient adolescents, compared with nonpatient youth, were deficient in specific problem-solving skills such as problem-identification, goal definition, and generation and comparison of alternative solutions.

Staff and peer ratings have also been used for identification of target behaviors. For example, Elder, Edelstein, and Narick (1979) selected target behaviors for inpatient adolescents by having staff record behavioral excesses and deficits and by interviewing the youth regarding interpersonal situations that were frequent sources of conflict and aggression. For emotionally-disordered adolescents in a high school classroom, Plienis et al. (1987) used a peer survey to identify high interest conversational topics. The conversational topics (e.g., friends, music, television, sports) rated most highly by 200 students attending the same school as the target youth were used in conversational skills training. Ultimately, the best test of the social validity of target behaviors is whether increases in these behaviors are associated with documented improvements in actual interpersonal relations.

### **Documentation of Criterion Levels for Training**

It is important to establish that the adolescent has a skill deficit and not merely a performance deficit due to anxiety or lack of opportunity, and that the social behaviors that are a focus of training are actually at deficient levels (e.g., Hansen, St. Lawrence, & Christoff, 1989; Minkin et al., 1976; Tisdelle & St. Lawrence, 1988). In addition to establishing the social relevance of behaviors being trained, another issue is to determine the appropriate levels of the behaviors being trained. Unfortunately, many clinicians and researchers choose the specific components to be trained based on face validity alone and arbitrarily judge "improvement" without reference to criterion levels that may be appropriate in the youth's social setting.

Many of the procedures that have been used to identify socially-valid behaviors for assessment and training may also provide information regarding criterion levels for training. For example, a useful method for validating the need for training and determining criterion levels for training is through the use of peer-aged, same-sex social-validation samples (e.g., Hansen, St. Lawrence, & Christoff, 1989; Tisdelle & St. Lawrence, 1988). Hansen, St. Lawrence, and Christoff (1989) conducted assessments of the conversational skills of "normal" and inpatient adolescents. The inpatient and community groups were matched on gender and were comparable in age and ethnicity. The conversational behaviors on which the groups were most discrepant were identified (e.g., conversational questions, high interest topics, speech acknowledgers and reinforcers). The inpatient youth were then trained to criterion levels of conversational behaviors of the same-sex, similar-age adolescents functioning successfully in the community.

One of the most accurate means of establishing criterion levels for training is to assess the levels of the behaviors exhibited by youth in interactions in the natural environment. Although determining rates or levels of specific behaviors (e.g., frequency of conversational questions), is obviously difficult, determining levels of global behaviors (e.g., positive rates of social interaction) is more feasible. Investigators have assessed rates of positive social interaction of children in the target child's playground setting (i.e., "setting norms") for use in determining criterion levels for intervention (e.g., Smith et al., 1988), and such procedures have been used with adolescents as well. For example, Hansen et al. (1990) assessed rates of positive social interaction of adolescents in the lunchroom at a client's high school. The documentation of rates of interactions by peers in the same school in comparison with the rates of interaction of the youth in treatment were useful for evaluating the real-world impact of the social skills intervention.

The most common social-validation procedure involves obtaining global ratings of overall competence within investigations that increase the frequency of specific component behaviors (e.g., Bradlyn et al., 1983; Christoff et al., 1985). For example, Hansen, St. Lawrence, and Christoff (1989) conducted conversational-skills training with inpatient adolescents and evaluated the social validity of the intervention through a pre-to post-training increase in global evaluations of conversational competence by a panel of unfamiliar adolescents. This type of social-validation procedure is most useful if the global ratings are made by individuals similar to those with whom the youth are likely to interact in the community (e.g., similar in age, sex, and other demographic/cultural characteristics) (Hansen, Watson-Perzel, & Christopher, 1989).

Many investigations with adolescents have attempted to socially validate the effectiveness of treatment. Investigations have utilized a variety of procedures, including: (a) ratings by unfamiliar adult judges (e.g., Bradlyn et al., 1983); (b) ratings by unfamiliar peers (e.g., Hansen, St. Lawrence, & Christoff, 1989); (c) ratings by peers in the natural environment (Bierman & Furman, 1989); (d) ratings by staff or teachers (e.g., Pilehis et al., 1984); (e) comparison with social-validation samples (e.g., Hansen, St. Lawrence, & Christoff, 1989; Tisdelle & St. Lawrence, 1988); and (f) documentation of improved social interaction in the natural environment (e.g., Bierman & Furman, 1984; Gaylord-Ross, Haring, Breen, & Pitts-Conway, 1984; Hansen et al., 1990). Normative data from standardized rating scales (e.g., parent, teacher, or self-report measures) may also provide some useful social comparison information (e.g., Plienis et al., 1987). Ultimately, one of the best procedures is to unobtrusively observe the youth's social interactions in the natural environment to document pre- to post-training improvements (e.g., Hansen et al., 1990).

### **Evaluation of the Acceptability of Treatment Goals, Procedures, Effects**

One of the initial social-validation emphases was the acceptability of treatment to the client and others in the environment, including the acceptability of the goals, procedures, and effects (Kazdin, 1977). Treatment acceptability research has been prevalent for a variety of behavioral interventions for child behavior problems, such as time out, positive reinforcement, differential reinforcement, and response cost, among others (Calvert & Johnston, 1990). Despite the longstanding call for such evaluation, this aspect of social validation is relatively limited in the social-skills training literature (Hansen, Watson-Perzel, & Christopher, 1989). Because obtaining compliance with treatment procedures and recommendations can be a prob-

lem, it seems that an essential component of social-validation should be to determine the acceptability of the social-skills treatment procedures for the adolescent (e.g., Foxx et al., 1991; Jackson & Marzillier, 1982; Kazdin et al., 1987), parents and family members (e.g., Lemanek & Gresham, 1984), and teachers (e.g., Elias, 1983).

Therapists can utilize interview methods or questionnaires with the youth in treatment and/or significant others (e.g., parents, peers, teachers) to examine treatment acceptability (Calvert & Johnston, 1990; Fox & McEvoy, 1993; Schwartz & Baer, 1991). Foxx et al. (1991), for example, used a post-treatment questionnaire where inpatient youth were asked to rate eight items addressing how useful and enjoyable they found the social skills training program. An additional technique relevant for facilitating social validity is to allow the client and/or significant others to choose from one or more interventions (Schwartz & Baer, 1991).

### **Generalization**

The importance of generalization in clinical intervention was largely ignored prior to a seminal paper by Stokes and Baer (1977). They argued that we should not be treating generalization as a passive phenomenon where we "train and hope" that generalization will occur; we need to actively program for generalization of treatment effects. In a subsequent paper, Stokes and Osnes (1989) defined generalization as "the outcome of behavior change and therapy programs, resulting in effects extraneous to the original targeted changes" (p. 338). Although there are some conceptual disagreements about use of the term (Edelstein, 1989), generalization is sometimes discussed as three distinct types: stimulus, response, and temporal generalization. Stimulus generalization refers to demonstration of behavior gains in settings other than the therapy setting, or with people other than the therapist. Response generalization refers to changes in behaviors that have not been targets of intervention, while temporal generalization refers to maintenance of treatment effects over time and post-treatment termination. Assessment and programming strategies, functional contingencies and mediators, and conceptual factors for these types of generalization, however, are intertwined.

### **Assessment of Generalization**

Several studies have used assessment of interactions in other or new situations to demonstrate generalization. In particular, studies have assessed generalization to novel role-play or novel problem situations (e.g., Elder et al., 1979; Foxx et al., 1991; Kelly et al., 1979; Plienis et al., 1979). A num-



ber of studies have also assessed for generalization of social skills to interaction with novel persons, including unfamiliar peer-aged individuals (e.g., Hansen et al., 1990; Kelly, Furman, Phillips, Hathorn, & Wilson, 1979). Many studies have also assessed generalization to other settings, such as a play area (e.g., Kelly et al., 1979) or a school lunchroom (e.g., Bierman & Furman, 1984; Hansen et al., 1990).

Elaborate procedures can be necessary for assessing generalization to more naturalistic situations. For example, to assess generalization of problem-solving training, Tisdelle and St. Lawrence (1988) set up in vivo problem situations that would usually elicit aggressive or problematic responding, such as being accused by a staff member of doing something that they had not done. The adolescent's responses were unobtrusively audiorecorded and later rated for effectiveness and skill. The procedure supported the generalization of their intervention.

Generalization of social skills from the clinic setting to real-life situations is a critical issue in social-skills training. Pettit, McClaskey, Brown, and Dodge (1987) compared social skills in a laboratory setting and a school setting. The results varied, depending upon the behaviors assessed. For example, there was no relationship between direct observation of the children's molar peer-group entry skills in the laboratory as compared with the school setting. Children who responded aggressively to peer provocations, however, were likely to do so in both settings. Although conducted with young children (second through fourth grade), the likelihood that similar phenomena could happen with adolescents seems high. Given the transitional, changing nature of adolescence, monitoring of social skills in diverse, real-life settings may be especially important (Hansen, Watson-Perczel, & Christopher, 1989).

Few investigations with adolescents have reported assessment of stimulus generalization to interactions with actual peers in the natural environment (e.g., Hansen et al., 1990; Plienis et al., 1987), undoubtedly due to the time and cost involved, as well as the limited opportunities for direct observation of adolescent peer interactions. Obtrusiveness and practical difficulties are common given the varied settings and social groups within which a youth may interact. From a clinical and empirical standpoint, however, a direct assessment of peer interactions seems an essential component of documenting generalization. If objective direct assessment is not possible then it may be most practical to at least assess the generalization of trained skills to novel role-play situations or settings within the clinic or school, and utilize self-monitoring or monitoring by significant others (e.g., parents, teachers) of interactions and social behaviors (e.g., Bradlyn et al., 1983; Christoff et

al., 1985; Hansen et al., 1990; Plienis et al., 1987).

Response generalization, where improvements are noted in social skills that have not been directly trained, has been noted (e.g., Hansen, St. Lawrence, & Christoff, 1989; Plienis et al., 1987). For example, subsequent to successful intervention on a conversational component skills (e.g., conversational questions, high interest topics, appropriate self-disclosure), Hansen, St. Lawrence, and Christoff (1989) found improvements in several additional component skill behaviors which were not directly trained (e.g., eye contact, speech acknowledgers, affect, fluency, volume).

The aspect of generalization which most investigators have addressed is maintenance. Collection of follow-up data in social skills investigations has ranged from a couple of weeks or months (e.g., Elder et al., 1979; Fox et al., 1991; Kelly et al., 1979; Plienis et al., 1987) to one year (e.g., Elder et al., 1979; Kazdin et al., 1987). Many studies reporting follow-up evaluations have shown mixed results (Fox & McEvoy, 1993; Hansen, Watson-Perczel, & Christopher, 1989). In some cases certain behaviors were maintained at higher rates than others (e.g., Elias, 1983; Plienis et al., 1987), while in others there was stronger maintenance of behavior change for some participants than others (e.g., Bornstein, Bellack, & Hersen, 1980; Hansen, St. Lawrence, & Christopher, 1989).

### Programming Strategies

When considering achieving generalization, it is important to consider the naturalistic social-learning mechanisms for acquiring social skills: (a) exposure to models, including vicarious or observational learning; (b) consequences associated with social behavior (e.g., reinforcement, punishment, extinction); (c) receiving interpersonal feedback (direct or indirect); and (d) cognitive factors such as self-statements and attributional processes (Kelly, 1982; Hansen et al., 1995). Overall, many generalization strategies utilize such naturally occurring social-learning mechanisms. Categories of generalization programming strategies suggested by Stokes and Osnes (1989) include the following: (a) exploit current functional contingencies, (b) train diversely, and (c) incorporate functional mediators. A fourth type of strategy is to (d) target contextual factors (Lundquist & Hansen, 1998).

Exploit functional contingencies. Functional contingencies refer to the arrangement of antecedents, behaviors, and consequences that affect the frequency, magnitude, and duration of relevant behavior (Stokes & Osnes, 1989). Strategies for exploiting current functional contingencies include contacting and recruiting natural consequences, modifying maladaptive consequences, and reinforcing occurrences of generalization (Stokes & Osnes, 1989).

Stokes and Osnes (1989) noted that contacting and using natural consequences is helpful because generalization is enhanced "by providing the least artificial, least cumbersome, and most natural positive consequences in programming interventions. Such programming most closely matches naturally occurring consequences and their entrapment potential" (p. 341). Thus, it is important that therapists identify and teach behaviors that are likely to come into contact with powerful, reinforcing consequences that do not need to be programmed by a therapist (Fox & McEvoy, 1993). This, of course, is a basic underlying assumption of all social skills interventions. As noted earlier in the discussion of social validity, investigators have taken a variety of approaches to identify social behaviors that will likely receive a positive reception in the youth's environment, including assessment of relevant social validation samples of peer youth (e.g., Hansen, St. Lawrence, & Christoff, 1989; Minkin et al., 1976; Rotherman & Armstrong, 1980; Tisdelle & St. Lawrence, 1988), observation of behaviors and rates of interaction of peers in relevant settings (e.g., Hansen, St. Lawrence, & Christoff, 1989; Hansen et al., 1990), and surveying peers in the environment about appropriate behaviors and conversational topics (e.g., Bradlyn et al., 1983; Plenis et al., 1987).

A direct strategy for contacting and recruiting natural consequences is to include peers from the natural environment in the intervention process. Research on the use of peers as socialization agents began with behaviorally handicapped preschool children (e.g., Strain, Shores, & Timm, 1977), and subsequent investigations demonstrated the positive impact of peer-helpers with elementary school children (e.g., Guevremont, MacMillan, Shawchuck, & Hansen, 1989; Smith, Hansen, & MacMillan, 1988). The approach has also shown promise with adolescents (Bierman & Furman, 1984; Hansen et al., 1990). For example, after training conversational and social problem-solving skills to a socially rejected and isolated 14 year-old autistic girl, Hansen et al. (1990) used a peer-helper intervention to facilitate generalization and maintenance in the natural environment (i.e., her high school). Peer helpers were students in the same school, who were taught to interact and respond to negative behaviors. Comparable to the research on children, Hansen et al. (1990) found generalization to interactions with other adolescents in the school setting. The primary benefit of peer-mediated intervention is the potential to "trap" the individual into the natural contingencies of reinforcement, which naturally maintain the positive components of social skills (Hansen, Watson-Perczel, & Christopher, 1989).

Exploiting current functional contingencies can also be done by modifying maladaptive consequences so that more appropriate behavior can be

developed and maintained. Many youth participating in social skills interventions belong to deviant peer groups that may reinforce antisocial behaviors and punish taught skills (Bierman & Montminy, 1993; Dishion, Andrews, & Crosby, 1995; Dishion, Spracklen, Andrews, & Patterson, 1996). For example, Dishion et al. (1996) found that dyads of delinquent youth were more likely to reciprocate and reinforce talk about delinquent activity ("rule breaking") than nondelinquent youth. Further, patterns of rule-breaking talk were prognostic of later increases in delinquent behavior. Thus, the challenge for the therapist is to modify maladaptive behavior patterns reinforced by peers and replace them with adaptive behaviors that are also reinforced and meaningful for the adolescent.

A final strategy for exploiting functional contingencies is reinforcing occurrences of generalization. Youth or their parents or teachers can record occurrences of skill generalization to the home, school or community. Even though this may take some additional training of the youth and these other "agents," this event should prompt self-reinforcement and reinforcement by others, and therapists can provide additional reinforcement. Additionally, naturally-occurring reinforcement in a real-life setting is likely more powerful than therapist reinforcement in an artificial setting.

Active inclusion of parents or significant others (e.g., siblings, teachers, peers) as participants in the social skills intervention for a youth can be valuable for providing additional cuing and reinforcement of generalized behavior change (Bierman & Furman, 1984; Hansen et al., 1990; Serna, Schumaker, Hazel, & Sheldon, 1986). For example, Serna et al. (1986) used a procedure they described as "reciprocal social skills training" with delinquent adolescents and their parents. The youth were taught skills useful with the family as well as peers, including giving and receiving positive and negative feedback, accepting negative feedback, negotiating, resisting peer pressure, following instructions, and using problem-solving skills. The parents were taught complementary, reciprocal skills (e.g., giving feedback and instructions, facilitating problem-solving), which aided in both teaching and reinforcing skills exhibited by their youth.

Train diversely. A strategy that is particularly relevant for social skills interventions is training diversely (Fox & McEvoy, 1993; Hansen, Watson-Perczel, & Christopher, 1989). The rationale is that when the goals and procedures of training are more widespread, so are the outcomes. Training diversely strategies include using sufficient stimulus and response exemplars, a relatively common practice in social skills training, and making antecedents and consequences less discriminable.

Exposure to multiple stimulus and response exemplars is relatively easy

to accomplish in social skills training. For example, training may include exposure to varied social stimuli and responses via use of multiple role-play and problem scenarios (e.g., Geller, Wildman, Kelly, & Laughlin, 1980; Plienis et al., 1987), inclusion of multiple peers (e.g., & Gaylord-Ross et al., 1984; Kelly et al., 1979), exposure to novel role-play partners and situations (e.g., Bradlyn et al., 1983; Plienis et al., 1987), and intervention in multiple settings (e.g., Hansen et al., 1990). A group intervention procedure is another method that may facilitate generalization through exposure to increased stimulus and response exemplars. Group interventions generally include increased opportunity for modeling and rehearsal with more individuals (e.g., Bierman & Furman, 1984; Bradlyn et al., 1983; Hansen, St. Lawrence, & Christoff, 1989).

Video technology has many potential uses for social-skills training with adolescents (Christopher et al., 1992; Elias, 1983; Harwood & Weissberg, 1987; Muscott & Gifford, 1994). Videotaped assessments can be helpful for assisting in training, including facilitating the generation and use of multiple stimulus and response exemplars. It can be particularly useful for provision of feedback about both verbal and nonverbal behaviors and may provide a valuable training presentation that is easier for the youth to attend to than verbal presentations (Christopher et al., 1992; Walther & Beare, 1991). Muscott and Gifford (1994) also suggest that "virtual reality" (interactive, three-dimensional computer simulations) will have much to contribute to social skills training as the technology advances and becomes more available.

Additional strategies for training diversely include making antecedents and consequences less discriminable. A therapist can fade prompts and reinforcement for appropriate social responses so that the youth gradually exhibits the behavior unprompted with naturally occurring contingencies (e.g., Redd, 1970; Sanson-Fisher, Seymour, Montgomery, & Stokes, 1978). For example, within a program to improve conversational interactions of delinquent adolescent girls in a residential treatment program, Sanson-Fisher et al. (1978) first dispensed token reinforcement for every 20 positive comments exhibited and gradually increased the criterion to 80 positive comments. Data recording procedures also shifted during the intervention from staff recording to the girl's self-recording, and the intervention target also broadened from number of positive comments to the length of prosocial conversations. Incorporate functional mediators. Another strategy to enhance generalization is to incorporate functional mediators, including use of common salient physical and social stimuli as well as self-mediated physical and verbal stimuli. Such "mediators" may act as discriminative stimuli that facilitate generalization.

Incorporating common salient physical and social stimuli involves making the training and generalization settings as physically similar as possible. The most ideal situation, when possible, is to provide training in naturalistic settings, including the school (e.g., Hansen et al., 1990; Plienis et al., 1987) or other social situations such as youth centers or recreation programs (e.g., Anderson et al., 1987; Jackson & Marziller, 1982). There are many advantages to intervention in real-life settings, including the natural inclusion of common physical as well as social stimuli. Involvement of significant others in the youth's natural environment (e.g., peers, siblings, teachers) can be valuable for doing such things as prompting, supporting, reinforcing, or recording information (e.g., Hansen et al., 1990; Plienis et al., 1987).

Therapists may also teach youth to incorporate self-mediated verbal and covert stimuli (e.g., problem-solving, self-monitoring, self-reinforcement). Social problem-solving training may serve as a particularly useful strategy for promoting generalization (e.g., Christoff et al., 1985; Plienis et al., 1987; Tisdelle & St. Lawrence, 1988). Because problem-solving training combines skills with cognitively based rules and strategies, there is a potential advantage of increased generalization of treatment effects (Hansen, Watson-Perzel, & Christopher, 1989; Hansen et al., 1995). Learning a general strategy for solving social interaction problems would presumably lead to increased generalizability of skills and improved interactions across situations. Some studies with adolescents have used problem-solving training as the only intervention component (e.g., Tisdelle & St. Lawrence, 1988), while others included problem-solving training as one of several components (e.g., Hansen et al., 1990). Problem-solving training teaches skills the adolescent can take into other settings and as a result can be useful in a variety of settings, including inpatient psychiatric facilities (e.g., Kazdin et al., 1987; Tisdelle & St. Lawrence, 1988). This is a major advantage in the treatment of antisocial adolescents, because other potentially effective interventions (e.g., parent training) are often not practical due to severe family dysfunction or lack of in-tact families (Kazdin et al., 1987).

Self-monitoring and other self-management procedures may be useful strategies for enhancing generalization of social skills training (e.g., Kelly et al., 1983; Rhode, Morgan, & Young, 1983; Smith, Young, West, Morgan, & Rhode, 1988; Warrenfeltz et al., 1981). For example, Kelly et al. (1983) and Warrenfeltz et al. (1981) found that self-monitoring (i.e., recording and rating one's own behavior) was useful in achieving generalization beyond an intervention setting for behavior disordered youth in a social-skills oriented vocational training program. In addition, Kelly et al. (1983) found that while verbal training and role-playing procedures were important for

response acquisition, self-monitoring appeared especially useful for enhancing response generalization. Adolescents have also been trained to evaluate their own behavior, compare their self-ratings to teacher ratings, and select a reinforcer for accurate self-recording (Smith et al., 1988). One inherent drawback in the application of self-management procedures to social skills training is that youth with social skills deficits are also likely to have deficits in their ability to monitor and evaluate their own social behavior (Christopher et al., 1993).

**Target contextual factors.** A fourth overall strategy that can be added to the Stokes and Osnes (1989) classification is to target contextual factors (e.g., stress, conflict, isolation) that interfere with skill acquisition or limit use of newly acquired skills. As mentioned previously, contextual factors may limit treatment adherence and social validity in addition to limiting generalization of skill acquisition and use. For some youth in need of social-skills intervention, problems such as family violence, parental psychopathology, responsibilities such as caring for younger siblings, and so forth, can prevent sufficient opportunity and energy for full participation in and benefits from treatment. Broader interventions with the parents or family and other specific interventions with the youth may be necessary in addition to, or even prior to, social skills intervention. Expanding the focus of social problem-solving training to address such other contextual factors may be valuable.

While clinic assessments and interventions may demonstrate value for pinpointing and addressing specific problem areas, they may be insufficient by themselves to reveal the range and significance of contextual events that may be dramatically influencing behavior. School, community, or home assessments and interventions are often not feasible, but they can be invaluable for programming generalization by facilitating identification of relevant contextual factors and inclusion of relevant stimuli and responses in training activities.

## Conclusion

We have come a long way since the early days of social-skills training with adolescents. We have seen an explosion of potential target populations and issues addressed through social skills intervention. We have also seen considerable expansion of settings in which intervention occurs, from highly controlled lab settings to semi-naturalistic social clubs and recreation programs to interventions in home and school settings. Of course, we have also seen an expansion of our repertoire of intervention procedures beyond basic skills training procedures to include more innovative and effective interven-

tion strategies. The range of participants involved in the intervention procedures has also broadened to include significant others such as peers, family members, or teachers.

Treatment adherence, social validity, and generalization have generally been discussed as separate concepts, but it is important to note again that there is significant overlap between the concepts (Lundquist & Hansen, 1998). Increased treatment adherence improves generalization and social validity. Improved generalization positively impacts adherence and social validity. Increased social validity impacts adherence and generalization. Therapists must actively program for treatment adherence, social validity, and generalization to ensure efficacy of interventions. Figure 1 displays the interrelationships of the three concepts and example strategies. Learning more about how to enhance adherence, generalization, and social validity is essential for improving the effectiveness of our interventions. If we systematically consider these concepts when planning our clinical and research endeavors, we will facilitate the development of meaningful and effective interventions.

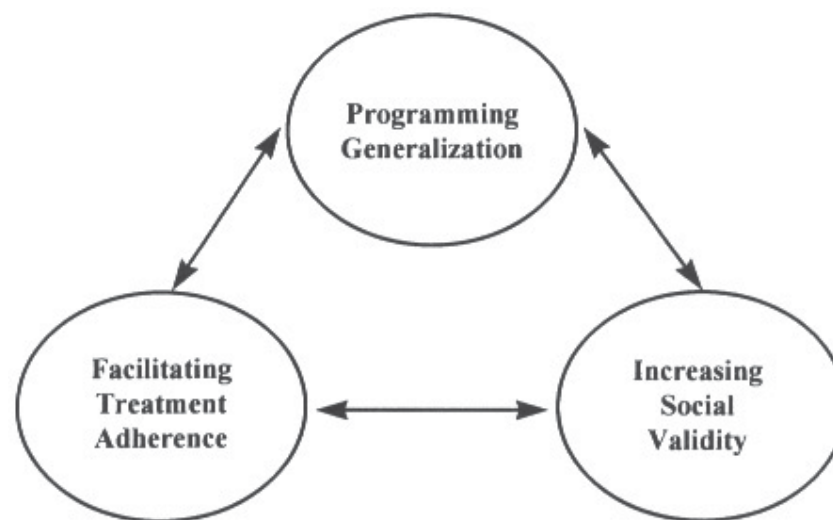


Figure 1. example strategies to increase the effectiveness of social-skills training by increasing treatment adherence, generalization, and social validity.

Behavior therapists have done much to learn how to achieve lasting, meaningful behavior change. The field of social skills training has certainly contributed to this body of knowledge yet there is still much more that can be done. A number of directions for future research are apparent, in-

cluding further study of the following issues: (a) factors which enhance adherence; (b) the social validity of commonly targeted social-skill component behaviors; (c) the social validity of training procedures; (d) the accuracy and validity of current generalization assessment procedures, as well as the development of methods to assess generalization of training effects; (e) methods to enhance the generalization and maintenance of training effects; (f) the influence of the many contextual factors that impact treatment participation and outcome; and (g) procedures to better assess and improve skills and needs specific to a gender or ethnic group. Further research on these issues will aid our efforts to facilitate treatment adherence, social validity, and generalization, and therefore enhance the effectiveness of social-skills interventions with adolescents.

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