



HHS Public Access

Author manuscript

Res Nurs Health. Author manuscript; available in PMC 2016 March 31.

Published in final edited form as:

Res Nurs Health. 2012 December ; 35(6): 610–623. doi:10.1002/nur.21497.

Modifying a Social Problem-Solving Program With the Input of Individuals With Intellectual Disabilities and Their Staff

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Abstract

Social problem-solving programs have shown success in reducing aggressive/challenging behaviors among individuals with intellectual disabilities in clinical settings, but have not been adapted for health promotion in community settings. We modified a social problem-solving program for the community setting of the group home. Multiple sequential methods were used to seek advice from community members on making materials understandable and on intervention delivery. A committee of group home supervisory staff gave advice on content and delivery. Cognitive interviews with individuals with intellectual disabilities and residential staff provided input on content wording and examples. Piloting the program provided experience with content and delivery. The process provides lessons on partnering with vulnerable populations and community stakeholders to develop health programs.

Intellectual disability affects 1%-3% of the U.S. population (Centers for Disease Control, 1996). Over 500,000 adults with intellectual disabilities live in residential facilities, with nearly 75% living in small group homes. The number living in small group homes has increased more than 300% over the last 20 years (Salmi, Scott, Webster, Larson, & Lakin, 2010). Because individuals with intellectual disabilities are living longer and their parents are aging and dying, the number needing residences is expected to continue growing (Bittles et al., 2002; Salmi et al., 2010). Individuals with intellectual disabilities living in group homes have higher rates of aggressive/challenging (problem) behaviors (60%) than those of individuals with intellectual disabilities living with their families (Deb, Thomas, & Bright, 2001), although the rates are reportedly lower in group homes than in large residences (McGillivray & McCabe, 2005; O'Rourke, Grey, Fuller, & McClean, 2004).

Problem behaviors cause distress for both residents and residential staff and can increase costs for agencies providing residential services to this population (Carr, Ladd, & Schulte,

2008; O'Rourke et al., 2004; Whittington & Burns, 2005). For this population, problem behaviors are a leading reason for both psychiatric hospitalizations (the primary reason for hospitalization at academic medical centers; Ailey, Johnson, Fogg, & Friese, in review) and incarcerations (about 4% of the prison population; Petersilia, 1997). Costs multiply if emergency and police personnel, emergency department visits, unexpected hospitalizations, or arrests occur. A single trip to the emergency department might cost \$1,500 or more (Durham Center, 2011). In addition, problem behaviors are costly to all of these agencies due to added personnel costs. A need exists for health promotion programs aimed at preventing and reducing problem behaviors.

Social problem-solving interventions have demonstrated improvements for individuals with intellectual disabilities with problem behaviors in clinical and forensic settings (Loumidis & Hill, 1997; C. M. Nezu, Greenberg, & Nezu, 2006; Rose, West, & Clifford, 2000). The results of two studies suggest that outcomes were better for individuals who had a support staff member accompany them to the interventions (Rose, Loftus, Flint & Carey, 2005; Willner, Jones, Tams, & Green, 2002). The translation of social problem-solving interventions among individuals with intellectual disabilities to community settings has been identified as an important issue (Loumidis & Hill, 1997; C. M. Nezu et al., 2006; Rose et al., 2005), as was the need for more data on the effect of including staff in the interventions (Rose et al., 2005). To date, however, researchers have not examined whether problem behaviors decreased when participants returned to their communities and how to translate social problem-solving interventions to community settings, and studies have not included support staff as an integral part of the interventions. Issues in translating clinical setting research to community settings include involving community members, assessing how community members understand materials, and assessing how they would like interventions delivered so that the interventions are feasible in the community (Vanderbilt University, 2012).

Purpose

The purpose of this work was to modify and tailor an existing research-based social problem-solving intervention called Attitude, Define, Alternatives, Predict and Try-out (ADAPT; D'Zurilla & Nezu, 2007; A. M. Nezu, Nezu, & D'Zurilla, 2006) for implementation in the community setting of the group home. The work addressed involving community members, developing materials that were understood by community members, and obtaining community input on intervention delivery. Individuals with intellectual disabilities and residential staff were involved in the work.

Background

Aggressive/Challenging (Problem) Behaviors

Among individuals with intellectual disabilities, problem behaviors include physically or verbally aggressive, destructive, disruptive, socially offensive, and other behaviors that pose a risk to the health and safety or negatively affect the quality of life of themselves or others (Royal College of Psychiatrists, 2001). Problem behaviors can have serious consequences for individuals with intellectual disabilities, such as emergency department visits and loss or

change of work, day placement, and residential setting (Barron, Hassiotis, & Paschos, 2011; Cooper et al., 2009). Problem behaviors are a major reason for mental health referral and treatment with psychoactive drug therapy (Lunsky & Palucka, 2004), resulting in a high rate psychoactive drug use in residential facilities (20%-50%; Deb & Fraser, 2004). Problem behaviors by individuals with intellectual disabilities, when directed against others or property, are an important reason for incarceration (Nichols, Bench, Morlok, & Liston, 2003). Problem behaviors and their consequences are a serious public health issue for this vulnerable population and their support systems.

Positive Behavior Support

Agencies providing residential services for individuals with intellectual disabilities are encouraged to follow a system of positive behavior support, which involves developing environments conducive to the reduction of problem behaviors (Reinke, Herman, & Tucker, 2006). Punitive means of handling problem behaviors (e.g., chemical and physical restraints) are dangerous and unacceptable to human rights (Tumeinski, 2005; Weiss, Altimari, Blint, & Megan, 1998). Psychosocial health intervention programs are needed to improve positive support and address problem behaviors.

Social problem-solving is one underpinning of positive behavior support systems (Sandomierski, Kincaid, & Algozzine, 2007) and is shown to benefit individuals with intellectual disabilities with problem behaviors. Among individuals with intellectual disabilities, improvements have been found in problem-solving and problem behaviors, specifically (a) reduction in problem behaviors in clinical settings (Loumidis & Hill, 1997; C. M. Nezu et al. Nezu, & Arean, 1991); (b) reduction of anger provocation (Rose et al., 2000; Rose et al., 2005), and (c) generation of and quality of alternative solutions (Loumidis & Hill, 1997; C. M. Nezu et al., 1991). Yet, independent action for solutions to problems did not increase (Loumidis & Hill, 1997), indicating that individuals with intellectual disabilities may need additional encouragement from others to improve social problem-solving. Conducting social problem-solving training in community settings may help to provide that encouragement.

Including residential staff in social problem-solving training for individuals with intellectual disabilities who live in group homes also may provide the positive behavior support these individuals need. Better outcomes for individuals with intellectual disabilities accompanied by staff to previous social problem-solving interventions (Rose et al., 2005; Willner et al., 2002) might have been related to improved social problem-solving skills of staff members. Further, residential staff members receiving instruction on the management of individuals with intellectual disabilities were found to complete more sessions and homework and were more satisfied in programs using social problem-solving techniques of viewing problem interactions with individuals with intellectual disabilities, discussing consequences, coming up with alternatives, and discussing rationales than in programs that relied on didactic description of appropriate interaction and management strategies (Cunningham, Davis, Bremner, Dunn, & Rzasa, 1993).

Group Home Environment

Problem behaviors are a major concern for residential staff members (Carr et al., 2008; Whittington & Burns, 2005) who, in some cases, have reported witnessing such behavior on the part of resident individuals with intellectual disabilities at least several times a week (Lundström, Saveman, Eisemann, & Åström, 2007). Individuals with intellectual disabilities also become upset by other residents' behaviors; 20% to 24.5% of individuals with intellectual disabilities living in group homes report difficulties with or being upset by other residents' displays of problem behaviors (Ailey, 2007; O'Rourke et al., 2004).

Aspects of group home environment increasing risk of problem behaviors—

Individuals with intellectual disabilities are frequently brought together in a group home with other residents unknown to them and with residential staff who often have only a high school education and minimal training (Hewitt et al., 2004; Wiltz & Reiss, 2003). Training requirements vary by state. In Illinois, residential staff members are required to have only 120 hours of training, including 40 hours of classroom training; managing problem behaviors is not required content in their training (Saddler, 2012). Tennessee requires web-based content with no specific hour requirement (Tennessee State Division of Mental Retardation Services, 2008). No training on managing behaviors is required.

Problem behaviors contribute to group dynamics within group homes that increase problematic interactions among residents, perpetuating the problem (Warren, Newsome, & Roe, 2004; Wiltz & Reiss, 2003). Residential staff members have reported difficulties in knowing how to respond to problem behaviors, and fear may cause them to avoid the residents or to respond in ways that reinforce the behaviors (Rose & Cleary, 2007; Whittington & Burns, 2005). Residential staff members are more likely to attend to individuals displaying problem behaviors than those displaying appropriate behaviors (Hundert, Walton-Allen, Vasdev, Cope, & Summers, 2003). Both individuals with intellectual disabilities and residential staff are ill-equipped to problem-solve and deter problem behaviors.

Aspects of group home environment reducing risk of problem behaviors—

Despite their problems, group homes can provide supportive environments and contribute to the quality and security of life, including developing social climates that promote less social distance between residential staff and residents and that promote the social networks of residents with intellectual disabilities (Robertson et al., 2001). Residential staff members provide assistance with residents' many needs and report their relationships as a source of satisfaction; some view their jobs as a calling (Ailey, O'Rourke, Breakwell, & Murphy, 2008). The findings of a study conducted in large residential centers among individuals with mild and moderate intellectual disabilities showed that group decision making about common problems facing the group of residents improved the decision making of the individuals in the group (Heller, 1978). This finding suggests the potential benefits of using the group home as a setting where staff can be consistently involved in social problem-solving interventions aimed at reducing problem behaviors and where the residents can help each other with the skills.

The literature supports the translation of social problem-solving interventions for individuals with intellectual disabilities from clinical and forensic settings to community settings. The group home environment can facilitate problem behaviors but also has the potential to provide positive behavior support through implementation of social problem-solving training as health promotion.

Developing a Social Problem-Solving Program for Group Homes

Using concepts from a social problem-solving therapy program meant for professionals (D'Zurilla & Nezu, 2007) and the simple language and strategies of a version of the program meant for the lay population (A. M. Nezu et al., 2006), our research team developed an initial manualized social problem-solving training program *Steps to Effective Problem-solving* (STEPS) for individuals with intellectual disabilities and their residential staff. The initial draft also was based on previous social problem-solving research among individuals with intellectual disabilities and others' previous experience in developing health promotion programs for individuals with intellectual disabilities (Heller, Marks, & Ailey, 2004).

Research-Based Social Problem-Solving

The source materials are identified by the acronym ADAPT to highlight components of the program (D'Zurilla & Nezu, 2007; A. M. Nezu et al., 2006). ADAPT is based on research that social problem-solving is composed of two major components: attitude and style. Attitude is composed of two types - positive, and negative - and, there are three problem-solving styles: rational, avoidant, and impulsive/careless. *Positive or negative problem attitude* refers to whether persons recognize or overlook problems and accurately or inaccurately ascribe the source of problems; it also refers to whether persons view problems as a challenge or a threat, believe problems are solvable or usually difficult to solve, believe in their ability or inability to solve problems, and/or become frustrated and upset when problems occur. Problem-solving styles include: (a) the positive rational style of systematic application of problem definition, generation of alternatives, and solution implementation and verification; (b) the negative avoidant style characterized by denial, inaction, passivity, dependency, and putting off; and (c) the negative careless/impulsive style characterized by hurried, impulsive, careless, and incomplete efforts at problem-solving (D'Zurilla & Nezu, 2007; A. M. Nezu et al., 2006).

Social Problem-Solving among Individuals with Intellectual Disabilities

Individuals with intellectual disabilities who have problem behaviors tend to view interpersonal situations as hostile (attitude); respond to situations with hostile actions more frequently than non-aggressive individuals with intellectual disabilities (style; Basquill, Nezu, Nezu & Klein, 2004); and, in stressful situations, use more aggressive responses. Individuals without aggression problems use more assertive responses (Jahoda, Pert, Squire, & Trower, 1998). Problem behaviors among individuals with intellectual disabilities often have identifiable antecedent causes and emotions (Tasse, 2006). Training in techniques to stop impulsive emotional responses has a long history of being used successfully in programs among individuals with intellectual disabilities that address improving social skills and anger management (Chapman, Shedlack, & France, 2006).

STEPS Manual

Based on general social problem-solving research and research about social problem-solving among individuals with intellectual disabilities, initial content on positive attitude, defining problems, predicting consequences, and trying out was developed. Materials on addressing interpersonal situations and on problem-solving style versus impulsive style were developed. To address the issue of triggers, additional training was added in identifying situations likely to make them engage in problem behaviors, stopping the immediate emotional response, and then slowing down, thinking, and acting.

Previous work indicates that health intervention programs meant for various vulnerable populations are more likely to be accepted if the programs are tailored with the input of those populations (Cowell, McNaughton, & Ailey, 2000). Previous participation through focus groups of individuals with intellectual disabilities in developing programs brought benefits in helping to develop topics, ways to present topics, and suggestions on the logistics of programs (Bazzano et al., 2009).

Experiences in developing health promotion programs for individuals with intellectual disabilities (Heller, et al., 2004) indicate the importance of clarity and simplicity of directions and the inclusion of multi-learning strategies and practice of concepts. Language of materials was aimed to be at no more than the second grade level. Interactive games were developed to reinforce content. Practice worksheets were developed for reinforcement between sessions.

Methods

The work featured here took place from April, 2010 to November, 2011 and involved community members in modifying the STEPS program for group homes. Multiple sequential methods were used to obtain community input including: (a) seeking advice on intervention content and delivery from supervisory staff responsible for developing behavior programs for individuals with intellectual disabilities; (b) cognitive interviews about understanding of the program with individuals with intellectual disabilities and then separately with residential and day program staff; and (c) piloting the program in two group homes and conducting follow-up interviews with individuals with intellectual disabilities and residential staff about lessons learned on content and delivery from the pilot program. Following these approaches, the STEPS manualized program for group homes was finalized, as shown in Table 1.

Subjects and Setting

Six supervisory staff members were recruited through four agencies providing residential services to individuals with intellectual disabilities in a midwestern metropolitan area. Three adults with intellectual disabilities were recruited for cognitive interviews from one agency (for ease of arranging meetings and transportation). The adults with intellectual disabilities (two men and one woman) met these criteria: (a) mild to moderate intellectual disabilities (IQ 50-75 [per agency records]) and mild to moderate limitations in adaptive functioning (American Psychiatric Association, 2000) as measured by the Inventory for Client and

Agency Planning (ICAP; Bruininks, Hill, Weatherman, & Woodcock, 1986) used across agencies; (b) living in group homes; (c) prior history of problem behaviors as evidenced by ever having a behavior plan; and (d) verbal, understands and speaks English. Two residential and one day program staff members were recruited for cognitive interviews from one other agency (also for ease of arranging meetings and transportation). Staff participants had to be currently working with individuals with intellectual disabilities who were residents of group homes, had to have experience with individuals with intellectual disabilities exhibiting problem behaviors, and had to be able to speak English. The second agency was used to bring in experiences from more than the one agency.

After the initial STEPS program manual was developed, two group homes with a total of 12 consenting residents (7 male, 5 female, and 25% minority) were recruited for a pilot of the program to obtain experience with the program and feedback from participants. Criteria were the same for participants in the pilot study as for the cognitive interviews, except that residents with intellectual disabilities did not have to have a history of a behavior plan. The two homes had a history of residents displaying problem behaviors. Each group home had had three incident reports in the previous 12 weeks. One resident within each home had a recent history of bone fracture related to hitting walls or furniture.

The meetings with supervisory staff were held in a conference room at the authors' university, as this was a central location. Interviews with the adults with intellectual disabilities and with residential staff were held in rooms at the agencies. The pilot STEPS program was held at the two group homes in the evening after day programs and after dinner. One home had to be vacated for a period after the program started, and residents were placed temporarily at other homes. Participants preferred to continue rather than delay, and three sessions were held for that group at a location to which residents traveled rather than in the home. Satisfaction surveys following the program were individually conducted with residents with intellectual disabilities and residential staff in the group homes. Interviews with residential staff were conducted before working hours. After revisions to the STEPS program manual based on the pilot study, a follow-up cognitive interview was held with the three participants with intellectual disabilities who had participated in the initial cognitive interviews. The purpose of the interview was to evaluate their understanding of revisions made to the STEPS program manual based on the pilot study and to obtain their input about the changes.

Human Subjects Protection

The Institutional Review Board at Rush University Medical Center approved the research. Supervisory staff gave consent to participate in an advisory meeting. Consent to participate in the pilot program and in cognitive interviews was obtained from the adults with intellectual disabilities if they were their own guardians or from legal guardians. Consent to participate in the pilot program and in cognitive interviews was obtained from residential and day program staff members, who were assured during the consent process that: (a) their participation would be voluntary; (b) the agency did not require or expect participation; and (c) there would be no consequences to any conditions of employment or performance evaluations if they did not participate.

Cognitive Interviews

The understanding of the materials in the STEPS program by individuals with intellectual disabilities was assessed with three cognitive interviews. Cognitive interviews are used to evaluate how specific populations understand, process, and respond to information, with particular emphasis on identifying potential breakdowns in the process (Willis, 2005). Most commonly used for instrument design, cognitive interviews also have been used in the development of educational materials (Shafer & Lohse, 2006).

To obtain the input of individuals with intellectual disabilities on the STEPS manual, verbal probing techniques based on Willis (2005) were used regarding understanding of the material; information needed to respond to materials (alternate examples of problems and problem-solving methods they would use, educational strategies they consider useful); and confidence working with materials. Attention was paid to concepts easier or harder to understand. Participants were asked to explain materials in their own words. At the second and third cognitive interviews, the participants were asked the main issue of the previous interview to check for retention of material. Further revisions to the STEPS program were made based on the interviews. Following the revisions, cognitive interviews were conducted with two residential and one day program staff members using the same verbal probing techniques.

Analysis

Field notes were taken of the advisory meeting with supervisory staff. Important issues identified by supervisory staff were incorporated into a matrix display that was used to analyze the cognitive interviews with individuals with intellectual disabilities and residential and day program staff. The matrix was based on the work of Miles and Huberman (1994) and its application in other research using cognitive interviewing (Knafl et al., 2007). Because the intent of the cognitive interviews was to elicit data that could be used to evaluate the participants' understanding of program materials, core concepts organized in modules were used as the units of analysis. The source (individual with intellectual disability or residential staff member) and verbal probing issues were displayed. Core concepts of social problem-solving attitude and style that were easier and more difficult to understand were displayed along with alternate examples and strategies for promoting understanding of the concepts, especially those that were more difficult for participants. Examples were sought of typical problems and strategies used by individuals with intellectual disabilities. The matrix was then used to assist in modifying the STEPS program. Field notes were taken during the pilot of the STEPS program, mapped to concepts in the matrix, and used for further modification of the STEPS program. Input on visuals, interactive games, length of sessions and the total program and the time and place for the program was noted.

Findings

Conducting Social Problem-Solving in Group Homes

Supervisory staff noted that they all worked with group homes with high levels of problem behaviors and that delivering social problem-solving content in that setting would be useful. They noted that many residential staff members knew the individuals with intellectual

disabilities well and that delivering the program to individuals with intellectual disabilities and residential staff together might take advantage of that knowledge. The supervisory staff indicated that homes with ongoing incident reports for problem behaviors could be recruited, and all indicated that they could suggest specific homes.

During cognitive interviews, staff agreed with the proposed format of delivering the social problem-solving program in the group homes with residents and staff together. They noted that staff members were sometimes seen as authority figures, yet an important staff role in the group homes was to assist residents with being as independent as possible. Delivering the program in this way might enhance the staff role of independence assistance for residents. During the cognitive interviews with individuals with intellectual disabilities following the pilot, one participant stated that a good thing about doing the program this way was that staff could get to know them better.

Understanding of Materials

The understanding of social problem-solving components of attitude and style was probed during cognitive interviews. Particular attention was placed on the understanding of the rational style components of the ADAPT model (Define, Alternatives, Predict and Try-out). Examples were sought of how the individuals with intellectual disabilities would describe these components and alternative wording they would use, as shown in Table 1. The usefulness of interactive games and visuals was assessed. During the pilot of the program, field notes were taken on the understanding of materials.

Intervention Component “Attitude”

During cognitive interviews, individuals with intellectual disabilities were asked about their understanding of positive and negative attitude and were asked for alternative wording. The alternative words “step up/face it/fix it” were given for the concept of positive attitude. A visual of climbing steps was developed. The alternative words and visual were used throughout the pilot program and indeed proved useful.

Intervention Component “Style”

Impulsive style—Supervisory staff members were familiar with social problem-solving strategies. In the context of social problem-solving, they stressed the importance of content on knowing when a person has problems, triggers (feelings immediately prior to impulsive/problem behavior), and “stop, slow down, and think” as a coping strategy, and they gave several examples. During cognitive interviews with individuals with intellectual disabilities, the alternative wording “acting out” was given for impulsive problem behaviors. Examples of problems likely to lead to impulsive/aggressive behavior on the part of the participants with intellectual disabilities were offered, such as being teased and hitting or throwing. A screaming frog was chosen as a visual representing “acting out.”

The issue of triggers to impulsive/problem behaviors was difficult for individuals with intellectual disabilities as it was difficult for them to identify feelings they might have before acting out. In probing during cognitive interviews, examples such as “feeling like stomach in a knot” were given. Visuals such as someone pulling their hair for “frustrated” and a knotted

rope for “feeling like stomach in a knot” were developed based on examples given during the cognitive interviews. During the pilot, residential staff members could identify such triggers and gave many examples that were discussed during sessions. One staff person noted that when a resident starts tapping his foot, it is a good time to remind him to use coping strategies. This reinforced the importance of the participation of residential staff in the program.

The idea that knowing one's own triggers should let one know to “stop and slow down” was discussed in cognitive interviews. The individuals with intellectual disabilities gave examples of ways they would stop and slow down, such as walking away, going to a quiet place, listening to music, and taking a walk. Visuals such as a picture of a tree for “go to my quiet place” or an elephant walking for “take a walk” were useful, and participants with intellectual disabilities could pick out ones they would use. Yawning and deep breaths were practiced.

Avoidant style—The concept of the component of avoidant style was difficult for the individuals with intellectual disabilities, and no alternative words were given. In cognitive interviews, participants noted that problems do not go away. In the pilot sessions, examples of problems likely to lead to avoidant behaviors were given, such as being asked by other individuals with intellectual disabilities for belongings or money and just giving it to them.

Rational style—The positive rational style was addressed by the components listed below.

Define: For understanding the component “Define,” participants were asked whether the problems discussed were big or small, important to “only me” or also other people, and something that “I/we” could have done something about. During cognitive interviews, a participant provided the alternative phrase “break it down” with a visual of breaking a stick. An interactive game guessing how tall others were by pointing to a spot on a wall was developed to highlight big or small. Participants often thought others were taller than they actually were. The game was used to discuss that problems can seem bigger at first and smaller after breaking them down. This alternative wording was used throughout the pilot program. During the pilot, some participants could go through “breaking it down” independently, and all could do this with prompting from the nurse interventionists and staff.

Alternatives: Initially the word “brainstorming” was used, but this word proved difficult. The alternative wording “bright ideas” was useful. The picture in the manual of a light bulb to encourage “bright ideas” was useful, and participants were asked to come up with at least two possible solutions. The strategies were useful in explaining the component of “Alternatives.” In the pilot sessions, it was useful that the group as a whole could come up with more solutions to problems than each individual.

Predict: During cognitive interviews, the understanding of the component of Predict was probed. The issue of feelings when dealing with a problem well versus not well was discussed. This was difficult to grasp. Already-developed visuals depicting someone happy and excited were useful. Participants gave new examples of how they would feel that were not included in the original materials. Alternate examples when problems were handled well

included feeling “like a better person,” “connected,” and “respected.” Alternate examples of feelings when problems lead to acting out were “sad” and “depressed.” Consequences of impulsive and rational problem-solving behaviors were raised. Individuals with intellectual disabilities were familiar with consequences such as temporary or permanent restrictions from programming, injuries from hitting walls or furniture, and emergency personnel being called to homes. Participants were able to give examples of when they handled problems well.

Try-out: The component Try-out was addressed by having practice worksheets for between sessions and by asking participants to give examples of problem-solving strategies. During cognitive interviews with individuals with intellectual disabilities, worksheets were tried. Card sorts were useful with pictures of problems they might face and the steps of breaking down problems. Residents were also able to discuss rational problem-solving behaviors such as not giving away money or belongings, asking not to be asked for money or belongings, showing respect at all times, and asking staff to help with the situations. During the pilot, participants with intellectual disabilities were asked to give examples of strategies they used to solve problems.

Intervention Implementation

During each of the sequential steps, advice and insight were obtained regarding how best to implement the STEPS program in group homes. Advice and insight included program logistics (length of program, method of delivery), program framing, discussion of individual and group problems, what was most helpful about the program, and suggestions for improvement.

Logistics of Program

Length—Previous social problem-solving research in clinical and forensic settings had programs of 12-16 sessions that were 1-2 hours long each session (Loumidis & Hill, 1997; C. M. Nezu et al., 1991; Rose et al., 2005). One program had nine sessions (Willner et al., 2002). The original ADAPT material for professionals was a 12-session program (D’Zurilla & Nezu, 2007). Supervisory staff suggested keeping STEPS sessions to nine or fewer 1 hour sessions, with a preference for fewer. Convenient times for the intervention were suggested, with the time between dinner and night medications as one suggestion. Residential staff concurred with keeping the number of sessions to nine or fewer. The cognitive interviews with both individuals with intellectual disabilities and residential staff were useful in determining materials that were easier and more difficult to grasp and relative times to allow for particular materials. The cognitive interviews assisted with determining how to present materials in a way that the program was six sessions in length. Pilot sessions lasted the expected length of approximately 1 hour, including set-up and termination. Individuals with intellectual disabilities participated throughout the time period. Further, the time after dinner seemed particularly convenient for participants. The six sessions were held over a 6-9 week period. Participants asked for a follow up session for reminders and the sixth session (a summation session) was repeated 3 to 4 weeks later as a booster.

Method of delivery—Supervisory staff members suggested that the STEPS program use very simple language, interactive materials focused on the group approach, and multiple learning methods. During cognitive interviews, residential staff members suggested supplementing the program with interactive PowerPoint slides. Several specific suggestions were given regarding scenarios that could be used as examples, interactive games for the sessions, and worksheets for between sessions. In previous experience developing health promotion programming (Heller et al., 2004), newsletters about the program were developed with content specific to participants. Supervisory staff liked this suggestion, as did the individuals with intellectual disabilities and staff who participated in cognitive interviews. Newsletters about each session were developed for the pilot and were well received. Participants kept them in their notebooks.

Framing of program

A theme that developed during the pilot program was that there were no right or wrong questions or answers. Participants in the sessions were given time and space to talk about problems when no immediate solutions were needed. Discussion included putting problems in a safe place in order to talk about them. A visual was developed of a house where problems could be put. Yet, during the follow-up cognitive interview, one individual with intellectual disabilities noted that the program would be conducted in their group homes, so the problems were already in the house. Visuals of a box or folder were suggested as alternatives. The final manualized STEPS program has these alternative visuals.

Individual and group problems

Participants raised many examples of problems faced during sessions of the program. Two categories were evident: problems faced by individual participants and problems faced by the residential group. Examples of group problems were more prominent in the pilot of the STEPS program than in the cognitive interviews. Participants did think it useful to talk about individual problems in the group.

Examples of group problems included how to manage each individual needing to do laundry with only one washer and dryer in the house for everyone (a problem discussion prompted by residential staff) and how to have everyone get ready in the morning for day programs and work (a problem discussion prompted by a resident). Examples were given of problem behaviors, such as throwing laundry left in the washing machine or dryer on the floor, cursing at other residents, or throwing things over getting ready in the morning. Examples were given of avoidant or denial behaviors, such as saying that staff should do the laundry or saying that leaving the home on time could not be fixed. Examples were also given of rational problem-solving for the laundry, such as developing a schedule for doing laundry and having a timer for the washing machine that could be heard to remind each other to remove laundry from machines. Rational problem-solving for leaving homes on time included better schedules for morning activities, setting alarm clocks earlier and getting up at the first alarm.

Helpful Program Elements

Participants (90%) stated that they felt more able to deal with their problems after the program. The group and talking about behaviors were identified as the most helpful part of the program. Satisfaction interviews were also held with three residential staff members who had participated in the pilot program. Training in breaking down problems, getting to know how individuals with intellectual disabilities relate to each other, and interactive games were identified as the most helpful parts of the program. Staff members thought it useful to have a scheduled time set aside to discuss problems. The categories of group problems and individual problems were discussed. House meeting were sometimes held about group problems. The idea of discussing common individual problems in a group session might be useful for them.

Suggestions for Improvement

During follow-up satisfaction interviews, individuals with intellectual disabilities noted that practice between sessions was the most difficult part of the program. Residential staff noted that specific materials and advice for practice between sessions would be useful for them. Residential staff noted that some problems are “touchier” than others; it might be useful to begin with less “touchy” issues and practice, and then move on to the more difficult issues. The staff members noted that it would be useful to talk with them before sessions about examples of problems that might be used to begin discussions and examples of problems that may be difficult to discuss. One staff person noted that it would be important for staff to work problem-solving into their everyday conversations with residents in order to help residents maintain what they learn. The staff members suggested an orientation program and manual for them and stated that they would be willing to comment on materials. Work to develop an orientation program and manual for residential staff has started.

Finalization of the STEPS program

The multiple sequential steps of meeting with supervisory staff, cognitive interviews with individuals with intellectual disabilities and residential staff, piloting the program, follow-up satisfaction interviews, and follow-up cognitive interviews with individuals with intellectual disabilities were important in developing and finalizing the manualized STEPS program. For example, prior to the cognitive interviews with individuals with intellectual disabilities, the STEPS program manual was developed for nurse interventionists with supplemental materials for individuals with intellectual disabilities and residential staff. Based on the interest in interactive materials and the willingness of participants to work with the materials, we decided to develop the STEPS program manual for primary use by individuals with intellectual disabilities and their staff. Supplemental materials of examples and suggestions for leading discussions were developed for the nurse interventionists to provide direction on facilitation of interactive games, discussion and role play during the sessions. This was done prior to the cognitive interviews with residential and day program staff.

Cognitive interviews were useful for obtaining input from individuals with intellectual disabilities and residential staff. The matrix used provided a structure to analyze and organize their input. The results of the interviews assisted in simplifying the material,

determining which concepts were easier/more difficult to understand, getting alternate examples of phrasing, and developing multiple methods for the training, especially to reinforce more difficult concepts. Comments from residential staff that the STEPS program could enhance their role of developing the independence of individuals with intellectual disabilities were very useful. The comments provided focus in developing STEPS so that it was useful to staff.

Alternate wording and visuals were incorporated into finalization of the STEPS program manual. Examples were changed to one example each of group problems and individual problems. Examples were incorporated from the pilot program sessions of problems likely to lead to impulsive/aggressive and avoidant/denial behaviors discussed, along with examples of rational problem-solving behaviors. The concept was incorporated of beginning with simpler and moving to more complex problems. Alternate visuals were developed. Interactive PowerPoints were added and more interactive games and role-play examples developed.

From the beginning of the process, key revisions included changing the target primary users of the STEPS manual, reducing the number of modules from 12 to 6, reducing didactic content and replacing that with interactive exercises and role-play, adding electronic media components, and improving the systematic inclusion of residential staff. Based on literature and previous experience, the quality and quantity of changes were unexpected when the process of modifying the social problem-solving program began.

Discussion

In previous research on exercise and weight reduction among individuals with intellectual disabilities, the health promotion program was based on evidence and used focus groups to help develop content and gain insight on implementation (Bazzano et al., 2009). Research in other populations has used cognitive interviews as a way to tailor content for the target population (Shafer & Lohse, 2006). Bazzano et al. (2009) also used focus groups with individuals with intellectual disabilities to help determine how to implement interventions. Yet, previous work did not include the multiple sequential methods we used to tailor the content of an intervention and determine how to implement it.

The multiple approaches and methods used to modify and tailor an evidence-based social problem-solving program for individuals with intellectual disabilities and their staff members provide lessons on modifying interventions developed in clinical settings for implementation in the community to prevent relevant health problems. In particular, working with individuals with intellectual disabilities and their support staff provides a template for developing health promotion programs for other at-risk populations who rely heavily on paraprofessional personnel for support.

Reducing problem behaviors in group homes is an important and needed public health challenge. The modifying and tailoring of the STEPS program reported in this article builds on previous work that shows individuals with intellectual disabilities can assist in developing topics, ways to present topics, and suggestions on the logistics of programs for health

promotion. Modifying and tailoring STEPS with the input of individuals with intellectual disabilities and their staff is foundational to future research to test the efficacy of STEPS in the community setting of the group home.

Acknowledgments

Funded by: Rush University Medical Center College of Nursing Fund #31202. This project was supported by the University of Illinois at Chicago (UIC) Center for Clinical and Translational Science (CCTS), Award Number UL1RR029879 from the National Center for Research Resources. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Center for Research Resources or the National Institutes of Health.

The authors wish to thank Arlene Miller, PhD RN FAAN, JoEllen Wilbur, PhD APN FAAN, and Julia Cowell, PhD RN FAAN for their assistance in this work.

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Table 1

Modified and Tailored Manual and Conceptual Correspondence to ADAPT

Module Number	Module Name	Module Concept	Module Content	ADAPT concepts
1	Who we are, what makes us unique.	Introduction	Program description	
2	Don't get mad, don't get trigger happy; Stop and slow down .	Attitude, "Triggers" to impulsive behavior	Problems that might get us mad, negative actions, "acting out". Feelings/triggers we experience when "acting out". Triggers help us stop and slow down.	Attitude: Why adopt an optimistic attitude, overcome common obstacles to being positive, poor self-confidence and negative thinking: healthy thinking what your emotions/feelings tell you.
3	Houston: We have a problem.	Continue Attitude, Add Define.	Think positive, Step Up/Fix it Describe facts: big/small, who is involved, importance, can we do something about it. Discuss goals: what you want out of problem solving. Group and individual problems. Should we begin with simpler and move on to harder problems.	Define: Seek available facts, describe facts, separate facts from assumptions, set goals identify obstacles. Describe situations likely to lead to aggressive behaviors; Situations likely to lead to avoidant behaviors; Situations likely to lead to rational behaviors. Examples of group/individual problems
4	Things happen	Add Alternatives Add Predict	What happens when you deal well with a problem. What happens when you don't deal well and get mad.	Alternatives: Consider many routes to problem solving, generate alternatives, defer judgment to actions (think about it), practice coming up with alternatives, don't be afraid to fail. Predict: Judge/think about alternatives, consequences. Impulsive "acting out" & avoidant styles. Effective solutions and developing a solution plan.
5	Bright ideas for problem solving	Continue Alternatives, Predict. Add Try-Out.	"Brainstorm/Bright ideas" Practice generating alternatives and predict what will happen. Check if solutions work.	Try out: Motivation to carry out solutions, implement your plan, check up on results, reward yourself for trying to solve problems, trouble shoot, get help when you need it.
6	Practice makes us positive problem solvers.	Review all.	"Booster shot": Problem solving role play. Tips for remembering.	