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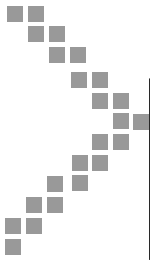
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# Case Studies and Shorter Communications

## Social Problem-Solving Skills Training for Adults With Mild Intellectual Disability: A Multiple Case Study

Gillian Anderson and Nikolaos Kazantzis

Massey University, New Zealand

Social problem-solving training has been successful in improving maladaptive behaviour and problem-solving skills for individuals with intellectual disability. However, in contrast to individuals without intellectual disability there has been only one study that has examined whether social problem-solving training can improve psychological distress in individuals with intellectual disability and a psychiatric diagnosis. Three participants from a vocational community centre with mild intellectual disability, comorbid mental illness, and challenging behaviour, participated in 15 individually delivered sessions of social problem-solving training. Social problem-solving skill, behaviour, and psychological distress measures were used to assess outcome. All three participants showed improvement in social problem-solving skills, and two participants showed improvement in depression. Improvement was maintained at 4-week follow-up. The results provide preliminary evidence that social problem-solving training could be an effective intervention tool for the treatment of psychological distress in individuals with mild intellectual disability.

■ *Keywords:* social problem-solving training; intellectual disability; case study

People with intellectual disabilities are more likely to experience psychological problems than those without, and consequently are more in need of psychological services (Nezu, Nezu, & Arean, 1991; O'Brien, 2002; Sternfert Kroese, 1998). A literature review investigating the percentage of individuals with intellectual disability with a coexisting psychiatric disorder, showed a prevalence between 10% to 19% — two to five times that of individuals without disability (Webb, 1996). The low expectations of the individual with intellectual disability leads to restricted opportunities and less opportunity to develop a positive self-esteem (Dagnan & Sandhu, 1999). In social and work situations, individuals with intellectual disability compare themselves to others and feel inadequate (Dagnan & Sandhu, 1999). Socially inappropriate expression of anger is common in individuals with intellectual disabilities (Benson, Rice, & Miranti, 1986; Black, Cullen, & Novaco, 1997). Lack of opportunity for learning adaptive coping strategies and the lack of anger

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management strategies in treatment plans are suggested to lead to challenging behaviour (Black et al., 1997; Nezu et al., 1991), and has been related to poor problem solving abilities and anxiety (D’Zurilla, 1988; Marx, 1988; Ranzon, 2001).

There is some evidence that cognitive-behavioural treatments can be modified and applied to people with intellectual disability. This evidence is limited to single or multiple case studies, and only a small number of controlled studies have been conducted. Existing research has illustrated how cognitive techniques can successfully treat depression (Lindsay, Howells, & Pitcaithly, 1993; Reed, 1997), anger (Black et al., 1997), self-regulation and self-control (Williams & Jones, 1997), and anxiety (Lindsay, Neilson, & Lawrenson, 1997) among individuals with intellectual disability.

## Social Problem-Solving Training

Social problem-solving training was developed by D’Zurilla and Goldfried in 1971 and has been applied to clinical and nonclinical populations (D’Zurilla & Nezu, 1999). There is empirical data to support the use of social problem-solving for the treatment of anxiety disorders (D’Guiseppe, Simon, McGowan, & Gardner, 1990; Dutton, 2002; Jannoun, Munby, Catalan, & Gelder, 1980; Ladouceur, Blais, Freeston, & Dugas, 1998; Szabo & Lovibond, 2002) and depression (Mynors-Wallis, Gath, Lloyd-Thomas, & Tomlinson, 1995; Nezu, Nezu, & Perri, 1989; Watkins & Baracaia, 2002). Additionally, effective social problem-solving can lead to adaptive coping and competence, and improved self-esteem (D’Zurilla, Chang, & Sanna, 2003; McCabe, Blankstein, & Mills, 1999). Furthermore, D’Zurilla et al. (2003) demonstrated that poor problem-solving ability is a significant predictor of aggression.

## Social Problem-Solving and Intellectual Disability

Social problem-solving training in combination with social skills training was successful in improving the ratings of personal–social responsibility of 33 adults with either mild or moderate intellectual disability (Castles & Glass, 1986). A further study compared four conditions (i.e., problem solving, relaxation training, self-instruction, and anger management condition) for the treatment of anger in individuals with mild and moderate intellectual disability, and concluded that all four conditions showed equal effectiveness (Benson et al., 1986). Additionally, a small controlled study ( $N = 6$ ), provided preliminary evidence of the generalisation of problem-solving skills training to new situations (Foxy, Kyle, Faw, & Bittle, 1989).

In a larger study, Nezu et al. (1991) randomly assigned 28 individuals with mild intellectual disability to one of three conditions: problem-solving–assertiveness training group (P-AS;  $n = 9$ ), assertiveness–problem-solving training group (AS-P;  $n = 9$ ), or a wait-list control group (WLC;  $n = 10$ ). The P-AS group received five sessions of problem-solving training followed by five sessions of assertiveness training. The AS-P group received five sessions of assertiveness training followed by five sessions of problem-solving training. All participants had an additional psychiatric diagnosis with associated maladaptive behaviours. The results indicated improvements in measures of distress and adaptive functioning, with no essential differences between the two protocols. It was concluded that self-regulatory treatments can be useful with this population. These findings are particularly significant as no prior research has examined whether social problem-solving training can improve psychological distress in individuals with dual disability (i.e., intellectual disability and

a psychiatric diagnosis). However, the existing data are limited as problem-solving training was examined in combination with assertiveness training.

Loumidis (1993) adapted social problem-solving training to include components with a cognitive emphasis on behavioural and emotional adjustment and a focus on generalisation across situations during sessions and everyday life. This program was evaluated on a **sample of 46 adults with intellectual disabilities**. The training content was adapted to reflect the needs of individuals with intellectual disability. **This adaptation involved increasing the training period to 15 sessions, adjusting the language to a level understood by the participants, increasing emphasis on effectiveness and social acceptability of solutions to problems, and increasing focus on generalisation of learned skills.** Statistically significant improvements in behaviour and social problem-solving were found in the trained group ( $n = 29$ ) compared to the control group ( $n = 17$ ). The present study closely replicated Loumidis's (1993) social problem-solving training, but training occurred on an individual basis, and included measures of depression, anxiety, and self-esteem.

## **Method**

### **Design**

The present study followed a multiple single-case design. Psychological distress was measured at baseline, pretreatment, midtreatment, posttreatment and follow-up. Social problem-solving skill was measured at baseline and at posttreatment, and adaptive behaviour was measured at pretreatment and posttreatment.

### *Participants*

One female and five male clients from a community vocational service were invited to participate in the study. One client declined participation and two withdrew their participation midtreatment, leaving three to complete the training. Ages ranged from 19 years to 52 years, and all were of New Zealand European/Caucasian descent.

### *Selection Criteria*

All participants had been diagnosed with mild intellectual disability through the Regional Intellectual Disability Care Agency (a service contracted by the Ministry of Health, New Zealand, to provide an individualised service to people with an intellectual disability who have high and complex needs) prior to their entry to the community service. Additionally, all participants presented with challenging behaviour and a comorbid mental illness. Participants were identified for a minimal level of verbal ability, (i.e., the ability to hold a conversation), and the ability to concentrate for a reasonable length of time.

### *Setting*

Participants were clients of a community vocational service, which supported individuals with intellectual disability who presented with challenging behaviour and a comorbid mental illness. Clients were assisted to reintegrate into the community with the aim of eventually finding vocational employment within the community.

### *Ethical Standards*

This study followed ethical guidelines set out by the New Zealand Psychological Society (1986) and the American Psychological Association (2001). It also adhered

closely to recommendations for working with individuals with intellectual disability as suggested by Bray (1998) from the Donald Beasley Institute (in particular to the means of gaining informed consent). Participants were encouraged to discuss the information sheet with their support workers before consent was provided. Informed consent was obtained through a signed consent form. The consent form was read aloud to the participant, and questions were asked to ensure that the participant understood what the study entailed. This process was recorded with an audio tape recorder. In line with University regulations, the proposed study was reviewed and approved by the Massey University Human Ethics Committee and the Auckland Ethics Committee.

## Measures

**AAMR Adaptive Behavior Scale—Residential and Community, Second Edition (Nihira, Leland, & Lambert, 1993).** This scale is designed to meet the AAMR definition of mental retardation and measures adaptive and maladaptive behaviour. The measure has been standardised with individuals who have developmental disabilities and demonstrates high internal consistency (from .80 to .99 for the domains and .92–.98 for the factors), stability coefficients (.80–.90), and inter-scoring reliability (.83–.99) (Nihira et al., 1993).

**Adapted Zung Anxiety Inventory (Lindsay & Michie, 1988).** Lindsay and Michie (1988) adapted the Zung Anxiety Inventory (Zung, 1971) for individuals with intellectual disability. Items had been simplified from the original, and a forced choice (*no/yes*) presentation replaced the original likert scale. An analysis of the factor structure showed that this adapted scale predicts anxiety on the basis of DSM III-R criteria, and shows significant test–retest reliability (Morrison, 1993).

**Adapted Zung Depression Scale (Reiss & Benson, 1985).** Reiss and Benson (1985) developed and adapted this 20-item self-report scale from the original Zung (1965) scale for use with individuals with mild intellectual disability. Part of the adaptation involved changing the original four-point response scale into a forced choice (*yes/no*) format and the item, ‘I still enjoy sex’ was removed. This revised scale has been used in previous studies with people with intellectual disabilities (Dagnan & Sandhu, 1999; Kazdin, Matson, & Senatore, 1983), and test–retest data show a Pearson’s correlation of .75 (Kazdin et al., 1983).

**Adapted Rosenberg Self-Esteem Scale (Dagnan & Sandhu, 1999).** Dagnan and Sandhu (1999) adapted the Rosenberg Self-Esteem scale (Rosenberg, Schooler, & Schoenbach, 1989) for individuals with mild intellectual disability. They simplified the wording but retained the original meaning of each item, and after psychometric evaluation of the scale concluded that concurrent validity seemed reasonable, and that the internal reliability and factor structure appeared as good and as similar to that predicted by Rosenberg’s theoretical model of self-esteem (Dagnan & Sandhu, 1999).

**Social Problem-Solving Skills Measure (Loumidis, 1993).** This measure was developed according to Goldfried and D’Zurilla’s (1969) behaviour–analytic model. The administration of the measure is carried out through a structured interview during which a series of questions are asked for each of eight problems. These are scored for components of social problem-solving skills.

## Case Summaries

### Case 1

Case 1 was a 19-year-old young man with mild intellectual disability, attention-deficit/hyperactivity disorder (i.e., a short attention span and/or hyperactivity) and paraphilia (i.e., he was sexually aroused by small children and would expose himself in their presence). He had diurnal enuresis (i.e., urinal and faeces incontinence) and very poor eyesight without his glasses. John was enthusiastic about the assessment and training, but needed constant refocusing to remain on task. He was easily distracted and became agitated very easily and quickly, but expressed a willingness to change his behaviour.

### Case 2

Case 2 was a 39-year-old woman with mild intellectual disability, and suffered from symptoms of depression. She was interactive, cooperative, and motivated towards the assessment and training. During her adolescent years, she had a history of fire setting with past legal convictions. Since being part of the present service, she had attempted suicide twice by taking overdoses of medication, and on one occasion had sat on a road during heavy traffic. These episodes were precipitated by feeling of hopelessness, by believing that others were talking negatively about her, and by problems with maintaining her finances. The vocational support service aimed to improve her self-esteem, to increase her social networks and natural supports, and to help her with budgeting.

### Case 3

Case 3 was a 52-year-old male with mild intellectual disability, diet-controlled diabetes and schizophrenia with predominantly negative symptoms. He had a history of physically assaulting others through pushing, grabbing, scratching, and throwing furniture and objects. These incidents were infrequent but short and explosive, and were associated with pressure from staff to perform tasks. Over the last few years he had become increasingly difficult to engage in social and vocational activity. He had a sleep pattern in which he watched television until 2 a.m. and then only woke at 2 p.m. At the time of the pretreatment assessment, the vocational support service had been unable to engage him in any daily activity, as he was often asleep during the day and often unable to get ready in time to attend activities at the vocational support centre.

## Procedure

Each session introduced a new component of social problem-solving skills and consisted of a common structure (as described in Loumidis, 1993). Sessions began with counselling for emotional problems, followed by a review of the previous session and homework, teaching of a new component, exercise on problem vignettes, application to individual problems, assignment of homework, a review of the session, and ended with a relaxation exercise. Each session introduced a new component on which the homework content was based (Table 1). Techniques used within the sessions included modeling, positive reinforcement, role-play, guided discovery, and discussion.

## Results and Discussion

Social problem-solving skills training showed improvement in social problem-solving skills for all three participants, and an improvement in depression for two

**TABLE 1**

Treatment Protocol for Social Problem-Solving Training (Loumidis, 1993)

Session	Component
1	Introducing the aims, rules, process and rationale
2	Impulse control and motivational boost
3	Use of feelings as cues to problem solving
4	Problem identification
5	Emotional ABC: Antecedents and consequences
6	Problem definition
7	Realistic self advocacy
8	Definition of needs/goals
9	Generation of alternative solutions
10	Introduction to decision making
11	Decision making criteria: I: effectiveness
12	Decision making criteria: II: social acceptability
13	Decision making criteria: III: consequences
14	Consideration of means to ends and obstacles
15	Solution implementation and verification

out of the three participants. An improvement in behaviour was noted by staff in their case notes.

**Social Problem-Solving Skill Acquisition**

The present study found some support for the notion that social problem-solving training improved *effectiveness of solution* (50% change<sup>1</sup>) for two participants (i.e., Case 1 and 3) and *social acceptability of solutions* (47% change) for the third participant (i.e. Case 3) (see Table 2). Previous studies that have demonstrated improvement in ‘*ends-thinking*’ (i.e., the number of alternative solutions generated in response to solutions), *effectiveness of solution*, the *number of relevant means to attain end*, and the *number of relevant preaction thoughts*, for individuals with mild and moderate intellectual disability (Castle & Glass, 1986; Loumidis & Hill, 1997).

**Effect of Training on Adaptive and Maladaptive Behaviour**

For all three cases there was no clinically significant change in adaptive or maladaptive behaviour, suggesting that social problem-solving training made little impact on behaviour for these participants (see Table 2). These results are similar to the Castles and Glass (1986) study in which training had no effect on maladaptive behaviour. Although the Nezu et al. (1991) study showed an improvement in maladaptive behaviour, social problem-solving training was given in combination with assertiveness training. Therefore, it is difficult to conclude that the Nezu et al. (1991) findings were due to social problem-solving training alone. In the Loumidis (1993) study, maladaptive behaviour significantly improved for the community group, but not for the hospital group. The study provides no explanation for this difference, but suggests that there may be individual differences between the community trained group, the hospital trained group, and the untrained control, which



**TABLE 2**

Individual Outcome and Percentage of Change for Social Problem-Solving Skills Measure (SPSSM) and Adaptive Behaviour Scale (ABS)

	Case 1			Case 2			Case 3		
	Time 1	Time 2	% change	Time 1	Time 2	% change	Time 1	Time 2	% change
<b>SPSSM</b>									
C1	16	13	-0.18	15	16	0.06	13	14	0.07
C2	15	28	0.46	25	38	0.34	15	29	0.48
C3	14	25	0.44	25	35	0.28	14	27	0.48
C4	33	34	0.20	35	37	0.05	14	22	0.36
C5	30	30	0.00	33	37	0.10	17	26	0.34
C6	33	27	-0.18	36	34	-0.05	33	33	0.00
C7	26	24	-0.07	30	31	0.03	28	25	-0.10
C8	09	15	0.40	19	27	0.29	06	20	<b>0.70</b>
C9	14	29	<b>0.51</b>	28	53	0.47	15	35	<b>0.57</b>
C10	28	30	0.06	39	37	-0.05	26	32	0.18
C11	17	14	-0.17	23	21	-0.08	20	19	-0.05
<b>ABS</b>									
A	107	98	-0.08	127	127	-0.00	122	125	0.02
B	103	100	-0.02	124	139	-0.10	106	108	0.01
C	87	83	-0.04	103	138	-0.25	91	96	0.05
D	55	55	0.00	92	111	-0.17	91	89	-0.02
E	69	56	-0.18	111	114	-0.02	97	98	0.01

Note: % change represents change at Time 2 (after treatment) relative to Time 1 (before treatment).

Figures in bold face font have achieved clinical significance (cut-off at 0.50 % change). C1, problem definition; C2, degree of autonomy; C3, number of statements; C4, number of alternative solutions; C5, number of irrelevant responses; C6, degree of comparative reasoning; C7, degree of justification; C8, degree of social acceptability; C9, degree of effectiveness; C10, number of relevant preaction thoughts; C11, number of relevant means to ends; C12, degree of realism of all means to ends; A, personal self-sufficiency; B, community self-sufficiency; C, personal-social responsibility; D, social adjustment; E, personal adjustment.

were not assessed. In the present study, although there was no evidence of measured clinically significant change in behaviour, staff had noticed behavioural improvement in the case notes for all three participants.

### Effect of Training on Psychological Distress

It appears that social problem-solving training had little impact on self-esteem (see Table 3). An explanation for the lack of change could be that the stability of self-esteem is such that long-term treatment is required before change will occur (Fennell, 1998). In addition, there was change in self-esteem scores between baseline and pre-treatment, leading to an unstable baseline and difficulty in distinguishing between the effects of treatment and other unmeasured factors.

Of the three psychological constructs measured (i.e., anxiety, self-esteem, and depression), depression showed the highest percentage of change (57%, 35% and 66% change, respectively for each case) between baseline and follow-up scores. When more conservative comparisons were made between pretreatment and follow-up scores, depression showed a 40% change for Case 1 and a 31% change for Case 2 (see Table 3). There are certain components within social problem-solving training that follow the cognitive behavioural therapy model for the treatment of depression; that

**TABLE 3**  
Psychological Distress Data

		Self-esteem	Depression	Anxiety
Case 1	Baseline	13	07	10
	Pre	16	05	08
	Mid	15	07	11
	Post	15	05	07
	Follow-up	16	03	07
	% change	0	0.40	0.13
Case 2	Baseline	09	14	14
	Pre	09	13	12
	Mid	09	13	14
	Post	16	08	15
	Follow-up	10	09	14
	% change	0.10	0.31	-0.14
Case 3	Baseline	12	06	06
	Pre	16	02	07
	Mid	15	09	06
	Post	14	03	07
	Follow-up	16	02	07
	% change	0	0	0.00

Note: 50% change is used as a cut-off to measure clinical significance.

is, establishing a relationship between thoughts, feelings and behaviour; generating and evaluating solutions, and learning basic cognitive skills towards successful problem solving (D’Zurilla & Nezu, 1999; Loumidis, 1997). All these components may have contributed towards the improvement in depression in the present study.

Case 3 showed no clinically significant change in self-esteem, depression, or anxiety, and yet support staff reported positive change in his behaviour (i.e., instead of sleeping all day, he was attending activities at the vocational centre). One strong possibility for this lack of data on measures of change could be that the participant had a tendency to answer self-reports in a similar manner, raising the possibility of a response set. This is a well-documented problem of self-reporting with individuals with intellectual disability (Reed, 1997). In addition, participants may be wary of reporting symptoms for which they have previously received criticism (Bramston & Fogarty, 2000).

The present study involved three participants from a vocational community centre that was experiencing major growth. This meant that there was a certain amount of disorganisation as staff and clients got to know each other and adapted to the new environment. It is likely that these major changes at the treatment centre had some influence on participants’ behaviour and level of psychological distress. In addition, the vocational centre undertook a geographical relocation during the time midtreatment data was collected, and may have had an impact on the minimal reduction of anxiety for all three participants

Although in the present study homework was set and reviewed at each session, encouraging between session tasks was difficult, and the lack of practice of new skills may have meant that learning did not reach its full potential. When support staff were present during sessions, there was greater continuity and follow through of problem solving. That is, staff were able to assist participants in practising skills

learned during sessions and providing the support when required. Future research should consider the measurement of homework completion as a possible mediator or moderator of outcome, as has been observed in other behaviour and cognitive-behaviour outcome research (Kazantzis, Deane, & Ronan, 2000; Kazantzis, Deane, Ronan, & L'Abate, 2005).

### Limitations of the Single-Case Research Design

This study was limited in its ability to demonstrate change by its lack of a stable baseline, limited data collection, small sample size, and the inclusion of stressful environmental events during the time of measuring individual change. However, it is important to remember the benefits of single case-study design, such as its use as a source of ideas and new hypotheses, and a source of developing therapy techniques (Kazdin, 2003). This study has suggested that individual social problem-solving training can improve social problem-solving skills, but has also tentatively shown that it can improve depression and behaviour in this population. This provides future direction for further studies in this area.

### Future Research

Although this study did not provide evidence that social problem-solving training can improve self-esteem, research has shown that both low self esteem and social problem-solving are risk factors for aggressive behaviour (D'Zurilla et al., 2003). It follows therefore, that if social problem-solving training was built into the vocational service as part of its daily routine, improvement in self-esteem and behaviour may improve over time. Some participants struggled with motivation during later sessions. Future research could reduce sessions to nine, and train support staff to apply social problem-solving training as a daily routine, in order to encourage generalisation and promote learning.

The treatment administered in this study did not use a manual, but followed limited session guidelines provided in the Loumidis (1993) study. This meant that supplemental information was required from the D'Zurilla and Nezu (1999) text. In addition, additional material was drafted for the standardisation of between session homework tasks. In order to establish treatment fidelity, future research could invest time in formulating a detailed manual of social problem-solving training for this population. Since cognitive-behaviour therapy leads the way in standardising treatments, ensuring therapist adherence and competence in tailoring treatment for clients is an important avenue for future research (Kazdin, 2003).

### Conclusion

These results contribute to the promising results from the Nezu et al. (1991) study in which social problem-solving training in combination with assertiveness training reduced psychological distress for this population. The present data also provide preliminary support for social problem-solving training as an effective intervention tool for the treatment of psychological distress in individuals with mild intellectual disability.

### Endnote

- 1 The use of 50% change to indicate clinical significance has been used in previous single case studies (Blanchard & Andrasik, 1985; Blanchard & Schwarz, 1988; Stravynski, Arbel,

Lachance, & Todorov, 2000). Alternatively, a 20% change has been used to define high end-state responding for the treatment of Generalised Anxiety Disorder (Orsillo, Roemer, & Barlow, 2003). In this study the more conservative 50% change is used as a cut-off to measure clinical significance (see Table 2).

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