ANGER CONTROL FOR PEOPLE WITH LEARNING DISABILITIES: A CRITICAL REVIEW

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Abstract. The literature on the use of cognitively based anger control packages of treatment for people with learning disabilities is reviewed. It is found that the experimental evidence for the effectiveness of such treatment is weak. There is, however, good evidence that two of the components of the package, relaxation and self-monitoring, can be effective in their own right, with relaxation being found to reduce anger and self-monitoring to reduce other challenging behaviours. The use of cognitive procedures with people who have learning disabilities is discussed.

Keywords: Anger control, learning disabilities, self-monitoring, relaxation, challenging behaviour.

Introduction

The literature on the challenging behaviours shown by people with learning disabilities is replete with studies that have successfully eliminated or reduced the behaviour (see Lennox, Miltenberger, Spengler, & Erfanian, 1988; Scotti, Evans, Meyer, & Walker, 1991; Whitaker, 1993 for reviews). The methods used fall into the following broad categories (cf., LaVigna & Donnellan, 1986; Whitaker, 1993):

– Contingency management, in which new contingencies of reinforcement and/or punishment are introduced, the challenging behaviour being punished (e.g., Foxx & Azrin, 1973) or alternative appropriate behaviours reinforced (e.g., Deitz, Repp, & Deitz, 1976).
– Ecological interventions, where a client's environment/routine is changed in such a way as to alter the contingencies supporting the challenging behaviour so that they no longer apply. For example, removing a client from a situation that provokes challenging behaviours (e.g., Touchette, MacDonald, & Langer, 1985) or providing him/her with exercise periods (e.g., Allison, Basile, & MacDonald, 1991).
– Positive programming, where the client is taught new skills and abilities that enable him/her to deal with their environment without the need for challenging behaviour. For example, teaching him/her to request the stimulus that is reinforcing the challenging behaviour from adults in a socially acceptable way (e.g., Durand & Carr, 1992).
– Reactive strategies, in which staff are given clear guidelines as to how to deal with the challenging behaviours when they occur. Although this is a way of managing challenging

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behaviour rather than reducing it, it is a very necessary part of its management as without effective reactive strategies the behaviour may become worse, due to staff inadvertently reinforcing it, or the client or other people may get injured.

Of these methods all but positive programming required external controls, usually in the form of staff to implement them. Once the active intervention is withdrawn and the contingencies of reinforcement/punishment that supported the challenging behaviour again apply, the challenging behaviour will return. This is a major limitation of these interventions as, in order to get a continued reduction in challenging behaviour, there will need to be continued external controls. This may well mean that clients with challenging behaviour will have to remain in services that can provide these continued external controls, which could severely limit their degree of independence.

In theory, positive programming should not have this limitation, as once the client has gained the skills that enable them to cope with provoking situations, they will have these skills whenever they are required, without the need for external controls.

According to Black, Cullen and Novaco (1997), a core element of challenging behaviour in people with learning disabilities is failure to regulate anger. Anger has been successfully treated using cognitive behavioural methods with people without learning disabilities (Chemtob, Novaco, Hamada, & Gross, 1977; Feindler & Fremouw, 1983; Novaco, 1977, 1979); there have now been attempts to modify such packages of treatment to make them suitable for people with learning disabilities, with manuals on such treatment being produced by Benson (1992) and O'Neill (1999). If this treatment were effective then people with a learning disability could learn to control their own anger and so live more independently and have a greater quality of life.

It is the purpose of this review to look in detail at the published studies on anger control, for people with learning disabilities, in order to identify if it is effective, under what circumstances it is effective, and what components of the package are the most effective. Table 1 lists all the studies that could be located that used an anger control package with clients who had a learning disability.

Comparing anger control studies

Duration of training

The amount of time taken to train the client in anger control varied across studies ranging from 12 hours used by Moore, Adams, Elsworth, & Lewis (1997), Rossiter, Hunnisett and Pulsford (1998) and Walker and Cheseldine (1997), to 102 hours used by Cullen (1993). It should be noted that several of the authors comment that ideally more time should have been spent in training.

Generalization and maintenance

Most of the studies (if we assume that they were effective) show generalization and/or maintenance, in that the anger behaviour appeared still to be suppressed away from the treatment sessions. The exceptions to this are studies such as Harvey, Karan, Bhargava and Morehouse (1978), and Murphy and Clare (1991) where behavioural components in the package of treatment were still in effect outside the treatment sessions, studies such as

Holland and Murphy (1990) and Rose and West (1999) where it was not clear what interventions were being given at any particular point in treatment, and studies such as Lawrenson and Lindsay (1998) and Walker and Cheseldine (1997) where there was no follow-up assessment. It should also be noted that, although Rose (1996), Rose, West and Clifford (2000) and Moore et al. (1997) did not explicitly have behavioural components in their packages of treatment, staff, who regularly worked with the clients, attended the sessions. Rose (1996) speculates that this may have resulted in better behavioural management of clients away from the group. The follow-up period also varied considerably, from between 9 and 12 months reported by Fleming and Tosh (1984), Lindsay, Overend, Allan, Williams, & Black (1998), Rose et al. (2000) and Rossiter et al. (1998), to 6 months or less reported by Black and Novaco (1993), Moore et al. (1997), and Golden and Consorte (1982); to the 1 to 2 weeks reported by Benson, Rice and Miranti (1986).

Critical analysis

On the face of it, given that 16 studies have been identified in which a cognitively based anger control package has been used with people with learning disabilities, some with severe learning disabilities (cf., Rose, 1996; Rossiter et al., 1998), there would seem to be clear evidence that this treatment can be effective. However, close inspection of these studies shows that many of them produced equivocal results and/or have poor experimental designs.

Experimental design

The best experimental designs were those used by Rose et al. (2000) and Benson et al. (1986), who used group designs, and Harvey et al. (1978) who used a multiple baseline design. However, there were additional problems with these studies. Benson et al. (1986) compared groups who were given the following treatments: relaxation only, problem solving only, self-instruction only and a combination of all three. The data were analysed statistically and some significant reduction in anger was found after training for all groups but no difference was found between groups. It was therefore not possible to say that the anger control package was more effective than any of its components used on their own, or indeed whether the effect was simply a placebo effect as there was no ''no treatment'' control group. Rose et al. (2000) compared a treatment group with a waiting list control group and found a statistically significant improvement in the treatment group as measured on the Anger Inventory (AI) (Benson & Ivins, 1992) and a depression inventory (Benson & Ivins, 1992). However, as noted above, it was unclear whether this effect was due to the cognitively based treatment package or to better management of the clients' behaviour by the staff who cared for the clients. Harvey et al. (1978) used a multiple baseline design across settings and appear to show a near zero rate of violent temper outbursts. However, part of the treatment package was a 3-minute time out, a procedure that had been demonstrated to be effective on its own with this type of behaviour (cf., Calhoun & Matherne, 1975; Luiselli & Greenidge, 1982; Poling & Ryan, 1977). It is therefore not possible to tell to what degree the reduction in the angry outbursts was due to the cognitive aspects of the treatment package or, indeed, if these parts of the package had any effect at all. The majority of studies used an AB design in which the degree of anger was observed before an anger control package was used (baseline), and then again during and/or after it was used. However, an AB design is

weak, as it does not preclude the possibility that the improvement was due to factors other than the intervention. Several of the studies failed to use any experimental design at all. There are therefore no studies that produce a clear demonstration of the effectiveness of a cognitively based anger control package with people who have learning disabilities.

Measures of change

Several of the studies measure success indirectly via questionnaires and rating scales (cf., Cullen, 1993; Lawrenson & Lindsay, 1998; and Lindsay et al., 1998; Rose et al., 2000; Walker & Cheseldine, 1997). Most of these studies give no indication of how valid or reliable these scales are. The exception is Rose and West (1999) who compared the scores on the Anger Inventory (AI) (cf., Benson & Ivins, 1992) with staff reports of incidents of challenging behaviour, and found only a loose relationship between the two measures. Therefore we do not know to what extent these indirect measures reflect actual anger. A close reading of these and other studies suggest that they may not be valid assessments. Black and Novaco (1993) found that as the staff ratings of aggression went down the client's self-rating of anger appeared to go up; Lawrenson and Lindsay (1998) report that although their client reported that he did not cause damage to property, staff reported that when he was angry he would throw objects, such as stools or chairs, which resulted in damage. Walker and Cheseldine (1997) suggest that one reason why they did not demonstrate change in anger as measured on a provocation inventory was that the clients were initially defensive in relation to feelings of anger and aggressive reaction in particular situations, thinking that admitting to such a response may result in punishment. Of those studies that did take a baseline of overt anger behaviour, there was often little or no indication of how this information was obtained or how reliable the data were.

   The studies, taken as a whole, provide some evidence that an anger control package can be effective in reducing anger in people with learning disabilities, though none of the studies provides unambiguously clear evidence. Also, if we assume that anger control can be effective, it is not clear which of the various components of the package of treatment is effective.

Effectiveness of individual components

From Table 1 it seems that there are a number of core components to anger control, the following being used in more than half of the studies cited:
– Relaxation.
– Self-monitoring of behaviour or feelings.
– Education about anger and other emotions.
– Self-instruction.
– Problem solving.
Other methods have included cognitive restructuring and Rational Emotive Therapy (RET) (Black & Novaco, 1993; Golden & Consorte, 1982) and social skills or assertiveness training (Black & Novaco, 1993; Golden & Consorte, 1982; Holland & Murphy, 1990; Murphy & Clare, 1991; Walker & Cheseldine, 1997).

   As these components are used as part of a package of treatment there is no way of telling from the studies cited in Table 1 which component is an effective part of the package. In

order to do this it is necessary to look at evaluations that have been done on these components as sole methods of intervention.

Relaxation

Relaxation as a method of getting the client to reduce their own level of arousal is commonly used in anger control packages, both with people who do not have learning disabilities (cf. Novaco, 1979) as well as those who have, it being part of the package in 12 of the studies cited in Table 1. Detailed descriptions of its use are given in the manuals on anger control with learning disabilities by O'Neill (1999) and Benson (1992). Relaxation therefore seems to be an important component of an anger control package and there seems to be evidence that it can be an effective component. There are now a number of studies demonstrating that people with learning disabilities can be taught to relax (e.g., Hughes & Davis, 1980; Lindsay & Baty, 1986a,b, 1989; Schroeder, Peterson, Solomon, & Artley, 1977; Williams, 1990). Although most of the studies use an AB experimental design, some of them have more controlled designs; for example, Hughes and Davis (1980) used an ABA design, Calamari, Geist and Shahbazian (1987), Lindsay, Baty, Michie and Richardson (1989) and Lindsay, Richardson and Michie (1989) used a randomized control group design, and Schroeder et al. (1977) used a multiple treatment design. Several studies have also demonstrated that the effect can generalize from the treatment setting and can be maintained after training (e.g., Lindsay et al., 1989; Lindsay, Fee, Michie, & Heap, 1994; Shaw & Walker, 1979; Steen & Zuriff, 1977).

Three studies use relaxation as the sole method of treating anger/aggression. Hughes and Davis (1980) trained a man suffering from autism and learning disabilities to relax himself with EMG biofeedback reducing his aggression. When training was discontinued he was observed for six further sessions and, although there was an initial increase in the rate of aggression, it then decreased to below the baseline level, suggesting maintenance of effect. McPhail and Chamove (1989) compared the effect of group relaxation using Abbreviated Progressive Relaxation (APR) (cf., Lindsay & Baty, 1986a,b), to reading a story to the group. After 12 training sessions the relaxation was shown to produce a significant reduction in aggressive and other disruptive behaviour for up to 4 hours after the end of the group. Unfortunately, the behaviour had returned to baseline levels when followed-up 3 months after the training had finished. They suggest that maintenance had not occurred as the clients had not been trained to use relaxation as a coping skill outside the training room. Lindsay et al. (1998) presented a case of a man with severe learning disabilities who became aggressive when he was stopped from ritually touching objects. This aggression was reduced by training him to relax using Behavioural Relaxation Training (cf., Lindsay & Baty, 1986b) and then to use cue words (''be calm'') to induce relaxation. There was still a considerable reduction in his aggression when he was followed up 22 weeks after the beginning of treatment, suggesting that the treatment had both generalized and been maintained. There therefore seems to be good evidence that relaxation used on its own can be effective in reducing both anxiety in general and aggression specifically, and can produce a generalized effect and be maintained over time. It is therefore likely that relaxation is an effective component of an anger management package.

Table 1. The studies in which a cognitively based anger control package has been evaluated together with: the number of clients used in each study, their degree of learning disability, the components used in the package of treatment (REM = Rational Emotive Therapy), the amount of training the client received in hours, the degree of reduction in number of angry incidents, whether there was generalization away from the treatment setting, whether there was maintenance of the treatment effect after training in anger control had stopped and the experimental design that was used

Study	Number of clients	Degree of LD	Components of package	Duration of training	Degree of success	General-ization	Maintenance	Design
Benson et al. (1986)	13–14	mod to mild	relaxation self-instruction problem solving	13.6 hours	not clear	yes	not clear	group
Black & Novaco (1993)	1	mild	self-monitoring ed re emotions relaxation self-instruction problem solving cognitive restructuring assertiveness training	18.7 hours	30+	yes	not clear	AB
Cullen (1993)	12	mod to mild	ed re emotions relaxation problem solving self-monitoring	102 hours	not clear	yes	yes	AB
Fleming & Tosh (1984)	2	not clear	self-monitoring recognition of anger praise for control	not clear	S1 not clear S2 70+%	yes yes	yes yes	none AB
Golden & Consorte (1982)	3	mild	assertiveness training relaxation problem solving self-instruction RET	56 sessions 30 sessions 20 wks sessions	S1 not clear S3 not clear S4 90+%	yes yes yes	no not clear yes	none AB
Harvey et al. (1978)	1	mod	self-monitoring self-instruction relaxation time-out	not clear	90+%	no	no	multiple-baseline

Table 1. *Continued*

Study	N	Severity	Components	Duration	%			
Holland & Murphy (1990)	1	mild	self-monitoring social skills praise for control	not clear	70+%	not clear	not clear	AB
Lawrenson & Lindsay (1998)	1	mild	ed re anger self-monitoring relaxation problem solving distraction self-instruction	22 hours	not clear	yes	no	AB
Lindsay et al. (1998)	1	mild	ed re emotions self-monitoring establishing motivation	26 sessions	not clear	yes	yes	AB
Moore et al. (1997)	6	profound to borderline	ed re emotions relaxation problem solving ed of staff	12 hours	30+%	yes	yes	AB
Murphy & Clare (1991)	1	mild	self-monitoring social skills training coping skills response cost	not clear	not clear	not clear	not clear	none
Rose (1996)	5	severe to mild	ed re emotions relaxation problem solving self-instruction thought stopping ed of staff	33 hours	30–90+%	yes	yes	AB

Table 1. *Continued*

Rose & West (1999)	5	mild to mod	ed re emotions relaxation problem solving self-instruction thought stopping ed of staff	24 hrs	not clear	not clear	not clear	none
Rose et al. (2000)	25	mild to mod	ed re emotions relaxation problem solving self-instruction thought stopping ed of staff	32 hrs	not clear	yes	yes	group
Rossiter et al. (1998)	6	severe to moderate	ed re anger relaxation self-monitoring self-instruction	12 hours	not clear	yes	yes	none
Walker & Cheseldine (1997)	4	not clear	social skills ed re emotions relaxation self-instruction	12 hours	not clear	yes	no	AB

Self-monitoring

Not only has self-monitoring been used in cognitively based anger control packages, it is an integral part of the behaviourally orientated treatment of self-management (cf., Shapiro, 1986), which also includes self-evaluation and self-reinforcing and/or self-punishing. There are a number of well controlled studies that have demonstrated the effectiveness of self-management in reducing challenging behaviour. For example, Gardner, Cole, Berry and Nowinski (1983) eliminated disruptive verbalization that could escalate to aggression in two clients with moderate learning disabilities. The package was initially assessed using an ABAB design, the external controls were then faded out. A near zero rate of challenging behaviour was found when the clients were followed up 6 months after the end of treatment, showing both maintenance and generalization. There are many similar examples: Gardner, Clees and Cole (1983), again with disruptive vocalization, Robertson, Simon, Pachman and Drabman (1979), Shapiro, McGonigle and Ollendick (1980), and Shapiro and Klein (1980) with disruptive behaviour, and Rosine and Martin (1983) with inappropriate tongue chewing and tongue protrusion.

Self-monitoring has been evaluated as a method of behaviour control in its own right. Table 2 lists those studies in which self-monitoring has been used as a sole form of intervention to reduce a variety of challenging behaviours. These studies have robust experimental designs, which have demonstrated considerable reduction in the target behaviours. It is also clear that the effect can both generalize and be maintained over time with follow-up periods ranging from 5 weeks, reported by Rudrud, Ziarnik and Colman (1984), to the 6 months used by Zegiob, Klukas and Junginger (1978). However, no study has been located in which self-monitoring was used as the sole form of intervention to reduce anger or temper outbursts. Therefore, although it may seem reasonable that self-monitoring used on its own should be effective in reducing anger, there is no evidence for this, so we cannot assume that self-monitoring is an effective component in an anger control package.

Education about emotion

Although some form of education about emotions is used in the packages, what has been taught to clients with regard to emotions has varied a great deal between studies, and has included: providing a rationale for treatment (Black & Novaco, 1993); assessing personal anger patterns (Black & Novaco, 1993); putting anger in the context of other emotions (Black & Novaco, 1993; Lawrenson & Lindsay, 1998; Lindsay et al., 1998; Moore et al., 1997); looking at consequences of temper loss (Black & Novaco, 1993); introduction to the concept of personal responsibility (Black & Novaco, 1993); discussion about the nature of anger, the relationship between events and feelings (Cullen, 1993; Lawrenson & Lindsay, 1998; Moore, et al., 1997); learning to use anger to cue the client to start to think (Cullen, 1993); encouragement to identify personal triggers to anger (Lawrenson & Lindsay, 1998; Rose, 1996; Rose et al., 2000); identification of anger (Lindsay et al., 1998); looking at cognitions relating to anger (Lindsay et al., 1998); looking at the effect and function of anger (Lindsay et al., 1998; Moore et al., 1997); looking at the individual difficulties with regard to anger and the importance of anger in their lives (Rose, 1996; Rose et al., 2000); and teaching terminology and concepts required for developing the work in greater detail (Rose, 1996; Rose et al., 2000). However, no study has been located where an educational

Table 2. The studies in which self-monitoring was used as a sole intervention together with: the number of clients used in each study, their degree of learning disability, the target behaviour, the amount of training the client received in hours, the degree of reduction in number of incidences of challenging behaviour, whether there was generalization away from the treatment setting, whether there was maintenance of the treatment effect after training in anger control had stopped and the experimental design that was used

Study	Number of clients	Degree of LD	Target behaviour	Duration of training	Degree of success	Gen	Maintenance	Experimental design
Pope & Jones (1996)	5	mod-mild	stereo	1.5 hours	60–90+%	yes	yes	Mult BL
Rudrud et al. (1984)	1	mod	inappropriate	2.5 hours	90+%	yes	yes	Mult BL
Sugai & Rowe (1984)	1	mild	out of seat	9 hours	90+%	no	yes	ABAB
Zegiob et al. (1978)	2	mild+mod	SIB+stereo	7 hours	70+%	no	yes	ABAB

procedure has been used on its own to reduce challenging behaviour, and therefore it is unclear if education is an effective component in an anger control package.

Cognitively based procedures

These procedures emphasize modifying the cognitive process that mediates overt behaviour. Within an anger control package the main cognitive procedures that have been used are self-instruction and problem solving. Self-instruction involves training a client to use their own language to direct their overt behaviour. For example, it has been used to make a distinction between ''coping statements'' (promote self-control) and ''trouble statements'' (maintaining or increasing anger) and to substitute one for the other (Benson et al., 1986; Black & Novaco, 1993); and to instruct self to relax or stay calm (Black & Novaco, 1993; Harvey et al., 1978; Lawrenson & Lindsay, 1998). Problem solving involves training the client to treat provoking situations as problems to be solved and then formally to solve them (cf., Benson et al., 1986; Benson, 1992). The procedures are treated as one here, as often self-instruction involves elements of problem solving (cf. Meichenbaum, 1977) and problem solving often involves elements of other cognitive methods, including self-instruction.

Only a few studies have been located where a cognitive procedure was used on its own. In their group comparisons study Benson et al. (1986) compared self-instruction, problem solving and relaxation as single interventions used alone with a package of all three, but failed to show that any one form of treatment was superior to the others. Loumidis and Hill (1997a,b), in a group control study, found that training a group of clients with mild learning disabilities to use social problem solving produced a drop in challenging behaviours as measured on Part 2 of the Adaptive Behaviour Scale (Nihira, Foster, Shelhaas, & Leland, 1974). Unfortunately, not only did the training involve problem solving, it also included components on education about emotions, relaxation and self-instruction, and therefore it is not possible to attribute the reduction in the challenging behaviour to the training in problem solving. One study that does show some success of a cognitive procedure on challenging behaviours is that of Woods and Lowe (1986). They used a multiple baseline design to evaluate the effect of teaching verbal rules to three adults with severe learning disabilities in order to stop them behaving in a socially inappropriate way. The rules were taught after a DRO schedule of token reinforcers was found not to be successful on its own, and may well have functioned to make the contingencies of reinforcement of this schedule clear to the clients. There was a reduction in the target behaviours as a result of training for two clients, which was still apparent at 2-month and 12-month follow-ups without booster sessions. There is therefore some evidence that giving people verbal rules on the contingencies of reinforcement that are operating can be effective; however, on the whole there is currently very little empirical evidence that cognitive procedures can be effective in reducing challenging behaviour.

Discussion

There seems to be some evidence that cognitively based anger control treatment can be effective with people who have learning disabilities. However, this evidence is not particularly strong due to methodological problems with the studies. Of the individual components, the ones that have the best supporting evidence are the non-cognitive procedures of relaxa-

tion, which has been successfully used as a sole intervention with anger, and self-monitoring, which has been demonstrated to be effective with other challenging behaviours. The lack of evidence for the effectiveness of cognitively based procedures is reinforced by some of the comments made in the papers on anger control. Moore et al. (1997) found that the use of distracter statements and positive self-talk were at best difficult for the participants to apply, and at worst confusing for them. Rose (1996) and Rose et al. (2000) also say that the techniques that seemed to be most effective were behavioural or educational in nature (e.g., teaching emotional recognition, role-play and relaxation), and Rose (1996) found that none of his group were able to remember complex statements.

A probable limitation of cognitive methods is that they require a minimum level of language and cognitive abilities to be effective, as the procedures make a number of linguistic and cognitive demands on clients. For example:

- The client will have to recall verbal instructions and self-instructions, requiring both language and memory.
- They will have to recognize when it is an appropriate time and place to use the skill they have learned. Whitman (1990) has argued that this is a complex skill requiring both linguistic and cognitive abilities and is a fundamental problem for people with learning disabilities.
- They may have to assess situations and problem solve to find the most appropriate cause of action, which will involve verbal reasoning and memory.
- And, in the case of anger, they will have to use these cognitive skills at times when they are in an aroused state, which Zillmann (1979) has argued will disrupt cognitive processes.

There are a number of ways in which training in the cognitive aspects of anger control could be modified to make it easier for people with limited cognitive and linguistic ability to acquire:

- The language used could be simplified.
- The number of decisions that have to be made could be limited, for example, when teaching clients to use self-instructions Benson (1992) suggests the use of a single all-purpose self-statement such as ''take it easy''.
- As suggested by Black and Novaco (1993), training could be done over a longer period of time, both generally and for particular topics such as identifying emotions (O'Neill, 1999).
- Presenting information visually, making use of such things as line drawing (e.g., Benson, 1992; Lawrenson & Lindsay, 1998; O'Neill, 1999; and Rose, 1996), may make abstract concepts more concrete. For example, using the visual image of a traffic light to prompt problem solving in response to stress (Rossiter et al., 1998) or a picture of a thermometer to indicate how aroused people are (O'Neill, 1999).
- Providing increased prompts from staff, for example, to generate possible solutions to problems (e.g., Benson, 1992, 1994) could reduce errors made by clients and so aid learning.

In addition to making use of the above in training, it has also been suggested (Rose et al., 2000) that training should put more emphasis on the contextual perspective of a client's anger. In this respect, training could be tailored so that it was far more specific to the situations in which a client has had problems with anger. So, for example, if they lose their temper only when others call them names, they should be taught the cognitive and behavioural skills to cope with this situation specifically, rather than controlling anger in any

situation. The client could then be taught specific ways of dealing with this, reducing the amount of information they have to remember and manipulate. It may also be possible, in the future, to tailor training to better meet a client's particular cognitive deficits or distortions. There is currently research looking at the difference between how aggressive and non-aggressive clients with learning disabilities appraise potentially provoking situations and decide to deal with them (Fuchs & Benson, 1995; Jahoda, Pert, Squire, & Trower, 1998; Pert, Jahoda, & Squire, 1999; Walz & Benson, 1996). An expansion of this work could lead to methods of assessing individual cognitions in relation to anger and so tailor treatment to specific needs. However, even with these modifications to the training methods, it is likely that many people with learning disabilities who have problems with anger will not have the prerequisite cognitive and linguistic abilities to benefit from cognitively based anger control treatment.

There is clearly a need for further research into this area. First, to demonstrate more clearly that cognitively based anger control packages are effective with people with learning disabilities will need a robust experimental design that makes use of randomized control groups. Work is currently under way on this with Taylor (2000) reporting on an ongoing study of anger control with people with learning disabilities using a waiting list control. Second, to find out which components are effective and under what circumstances, in particular what are the characteristics of the clients who benefit and those who do not. Third, to develop assessments of both situations and individuals so that treatment can be more accurately tailored to individual needs. In the meantime, the clinical use of anger control training possibly needs to put more emphasis on the non-cognitive aspects of treatment, in particular relaxation and self-monitoring, which seem to have stronger evidence for effectiveness. It should possibly also be used in conjunction with other methods of reducing challenging behaviours such as behaviour modifications or ecological change.

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