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# Cognitive behavioural anger treatment for adults with intellectual disabilities: effects of therapist experience on outcome

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## Abstract

**Background:** Anger has been shown to be associated with aggression and violence in adults with intellectual disabilities in both community and secure settings. Emerging evidence has indicated that cognitive behavioural anger treatment can be effective in reducing assessed levels of anger and violent behaviour in these patient populations. However, it has been suggested that the effectiveness of these types of interventions is influenced by the experience and training of the therapists.

**Method:** In this service evaluation study, the pre- and post-treatment and 12-month follow-up assessment scores of 88 detained in-patient adults with intellectual disabilities and forensic histories who received cognitive behavioural anger treatment were examined in order to investigate whether participants' responsiveness to treatment was associated with treatment being delivered by qualified versus unqualified therapists.

**Results:** Overall significant reductions in self-reported measures of anger disposition and anger reactivity were found with no significant time × therapist experience interaction effects. However, the patients treated by qualified therapists improved significantly on measures of anger control compared with those allocated to unqualified therapists.

**Conclusions:** Male and female detained patients with intellectual disabilities and forensic histories can benefit from an individual cognitive behavioural anger treatment intervention delivered by qualified and unqualified therapists, but therapist experience may be important in supporting patients to develop more complex anger control coping skills.

**Keywords:** anger treatment; CBT; intellectual disabilities; therapist experience; treatment outcome

## Introduction

Various surveys of populations of people with intellectual disabilities have found high rates of what has been termed 'challenging behaviour', in which aggression features prominently (see Taylor and Novaco, 2018 for a review). This epidemiological research, which has used survey and interview methods across three continents, indicates that aggression, and by implication anger, is a significant issue amongst populations of people with intellectual disability. Studies by Harris (1993), Hill and Bruininks (1984), Sigafos *et al.* (1994) and Smith *et al.* (1996) found that levels of aggression for people with intellectual disabilities in institutional settings were two to four times higher than for those in community settings. Rates of physical aggression were higher again for people with intellectual disabilities detained in secure

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settings. McMillan *et al.* (2004) and Novaco and Taylor (2004) investigated aggression exhibited by male offenders with intellectual disabilities detained in two specialist forensic hospital services in England. They both found that 47% of the in-patients assessed had physically assaulted staff or other patients following admission. Notably, in the Novaco and Taylor study, 73% of those patients that had been assaultive had carried out two or more physical assaults post-admission.

Aggression carries high costs for people with intellectual disabilities in terms of prolonged periods of detention and exposure to ineffective and harmful treatments (Taylor, 2002); for their direct carers who experience physical injury and consequent absence from work (Attwood and Joachim, 1994; Kiely and Pankhurst, 1998); and for services supporting them that are exposed to increased costs through sick-leave payments, worker compensation and high staff turnover (Singh *et al.*, 2008). Anger has been shown to be predictive of physical aggression both prior to and following admission to mental health facilities (Doyle and Dolan, 2006a; Novaco, 1994) and also following discharge from hospital (Doyle and Dolan, 2006b; Swogger *et al.*, 2012). The link between physical aggression and anger in hospital patients with intellectual disabilities was demonstrated by Novaco and Taylor (2004) who found that self-rated anger significantly accounted for patient assaults following hospital admission controlling for age, IQ, length of stay and violence history. Given that anger is a clear antecedent to violence by hospital patients, it is a legitimate target for treatment intervention.

Nicoll *et al.* (2013) systematically reviewed 12 studies of cognitive behavioural therapy (CBT) for anger in adults with intellectual disabilities published between 1999 and 2011. The nine studies included in a quality appraisal and meta-analysis yielded a large uncontrolled effect size. The authors concluded that there is an 'emerging evidence base' for CBT anger interventions, albeit based on a small number of studies with good levels of methodological rigour. Taylor and colleagues evaluated individual cognitive behavioural anger treatment with detained male patients with mild-borderline intellectual disabilities and significant histories of violence in a linked series of studies (Taylor *et al.*, 2002; Taylor *et al.*, 2004; Taylor *et al.*, 2005). Taylor *et al.* (2016) described an evaluation of the impact of their CBT anger treatment approach on violent behaviour by offenders with intellectual disabilities. Assault incident data were collected retrospectively from hospital case notes over a 24-month period. The total number of physical attacks against staff and patients fell by 56% in the 12-month period following treatment. Novaco and Taylor (2015) demonstrated that these reductions in physical assaults were associated with reductions in self- and informant-rated measures of anger disposition, anger reactivity and anger control as a result of CBT anger treatment.

### **Present study focus**

The central question addressed in the current study is whether a CBT anger treatment, modified for adults with intellectual disabilities (Taylor and Novaco, 2005), can be delivered effectively by inexperienced therapists under supervision. It is well recognised that the demand for mental health care far exceeds the delivery capacity of health care systems and that people seeking treatment for mental health problems often do not receive the treatment they require from mental health professionals (Health Education England, 2021; MIND, 2013). In the UK, this resource gap led to the implementation of the Improving Access to Psychological Therapies (IAPT) Programme for common mental health disorders that has produced positive patient outcomes utilising a workforce of both qualified experienced and newly trained staff consisting of mainly recent graduates (Fonagy and Clark, 2015; NHS Digital, 2022).

Michael *et al.* (2005) compared professional and graduate student therapists in a meta-analytic review of 19 outcome studies on child and adolescent depression and found that there were no significant differences in treatment outcome effect sizes by level of training, with both groups achieving large treatment effects. To account for this lack of differences, they speculated 'that the graduate students who delivered the treatments were being closely supervised by

professionals'. They suggested that trainees 'deliver therapy within a rich, multi-layered supervisory team, which often includes professionals, manualized interventions, and tightly supervised treatment protocols'.

Other support for the effectiveness of trainee therapists comes from US university counselling/medical centre studies. Beyebach *et al.* (2000) found no differences between expert versus trainee therapists in percentage of successful cases at termination or at follow-up. Minami *et al.* (2009) analysed treatment outcomes for over 892 cases over a 7-year period. Results showed that trainees had better outcomes than qualified staff, but more complicated cases were assigned to qualified therapists. Forand *et al.* (2011) reported that significant improvements on measures of anxiety and depression were obtained from start to end of treatment by trainee therapists delivering CBT to 249 patients. Rates of improvement compared favourably with those obtained in studies involving experienced professional therapists. In the UK, Mason *et al.* (2016) found that trainee and qualified therapists achieved comparable significant improvements using CBT for anxiety disorders experienced by patients in an NHS clinical service setting.

Of specific relevance to anger treatment with intellectual disabilities clients, Willner *et al.* (2005) conducted a small controlled study of a group-based anger intervention for adults with intellectual disabilities living in community settings delivered by inexperienced day-service staff who were trained and supervised by a clinical psychologist. The intervention group showed significant improvements on anger measures compared with the control group post-treatment and at follow-up. In an extension of this study, Willner *et al.* (2013) conducted a multi-site trial including 179 people with intellectual disabilities and reported no significant improvements for the primary study outcome measures. The intervention was again delivered by 'lay therapists' (day services staff) who were described as 'minimally trained therapists'. Rose (2013) found that both experienced clinical psychologists and unqualified therapists obtained significant reductions in anger reported by people with intellectual disabilities using an individualised CBT intervention in a community service – albeit with the qualified therapists obtaining greater change than the inexperienced therapists.

In this study, we examined whether unqualified therapists with active training, support and close supervision could achieve significant treatment gains with adult hospital patients with intellectual disabilities by comparing their outcomes on established anger measures with those attained by experienced therapists using a manual-guided treatment protocol.

## Method

### Setting and participants

The treatment study was conducted within the secure in-patient service of a National Health Service mental health and learning disability Trust in England. The service consisted of medium secure, low secure and locked rehabilitation single sex units that provided care and treatment to men and women with mild and borderline intellectual disabilities. Referrals were received from health authorities, the courts and prisons across the UK.

Study participants were in-patients referred by their clinical teams for anger treatment on the basis of their pre-admission history of anger and aggression, and their post-admission assessment and formulation of treatment needs. Eighty-eight patients (71 men and 17 women) for whom 12-month follow-up data were available were included in this service evaluation study. The mean age of the study group was 32.6 years ( $SD$  10.8; range 19–63). All participants were detained under the Mental Health Act 1983 with 23 subject to civil and 65 subject to criminal sections of the Act. At the outset of treatment, the participants' median length of stay in hospital was 3 years ( $M=4.3$ ,  $SD=3.6$ ). Intellectual functioning was assessed as part of the routine post-admission assessment battery using the Wechsler intelligence scales (Wechsler, 1997; Wechsler, 2008). The mean full-scale IQ for the study group was

67.8 ( $SD=7.1$ ; range 50–86) and the median was 68. Fifty-one (57.9%) participants had a co-occurring mental disorder, primarily personality disorder, psychosis and affective disorder. Thirty-six participants had convictions for violent offences and a further 35 had no convictions but a documented history of violence. Following admission to hospital, the mean number of assaults on others carried out by the study group was 2.1 ( $SD=3.7$ ; median = 1.0).

All participants consented to receive anger treatment and to have their clinical assessment data collated anonymously as aggregate group data for service evaluation purposes. Data collection and analysis was approved by the Trust research and development office and registered with its clinical audit department as an evaluation project for governance purposes.

### ***Treatment, therapists and supervision arrangements***

Study participants received treatment guided by a treatment manual described in detail by Taylor and Novaco (2005). In summary, the treatment was designed specifically for use with people with mild and borderline intellectual disabilities and utilises the stress inoculation paradigm (Meichenbaum, 1985). The treatment was delivered over 18 sessions to individual participants by the same therapist. Six 'preparatory phase' sessions aimed at engaging and motivating treatment-resistant participants was followed by a 12-session 'treatment phase', the core components of which are cognitive re-structuring, arousal reduction and behavioural skills training.

Treatment was provided by chartered psychologists, clinical psychologists in training and higher assistant psychologists. Ten qualified therapists (3 males and 7 females), eight of whom were clinical psychologists and two were forensic psychologists, provided treatment to 55 patients. There were 23 unqualified therapists (20 females and 3 males) who treated 33 patients. Of the unqualified therapists, 16 were graduate-level assistant psychologists and seven were trainee clinical psychologists on placement from doctoral-level clinical training courses.

Patients were allocated to therapists following consideration by a programme steering group (co-chaired by nominated lead consultant psychologists and the programme co-ordinator) that oversaw the delivery of the anger treatment in the host service. Whether a particular patient was allocated to a qualified or unqualified therapist was influenced by a number of factors including case complexity, current presentation, advice from the referring clinical team, and specific risk factors (e.g. previous history of targeting female staff members). In general, more complex and riskier patients would be allocated to qualified therapists.

All therapists (qualified and unqualified) received training in the delivery of the intervention by the programme co-ordinator. All therapists received routine individual clinical supervision when anger treatment cases would be discussed. In addition, there was mandatory weekly consultant-led peer-group supervision during which any difficulties with procedural progress could be discussed and treatment fidelity could be checked. In addition, structured session reports were routinely monitored to ensure treatment adherence.

### ***Study measures***

Self-report anger assessment measures were administered by trained assistant psychologists (under the supervision of qualified psychologists) within two or three weeks of commencing anger treatment, within two or three weeks of completing treatment, and 12 months following completion of treatment. The assistant psychologists administering the study measures were not involved in delivering treatment to the participants they assessed.

To measure anger disposition (i.e. the individual's inclination to become angry) the Novaco Anger Scale (NAS; Novaco, 2003) and the Trait Anger scale of the Spielberger State-Trait Anger Expression Inventory (STAXI; Spielberger, 1996) were used. The 48-item NAS assesses

**Table 1.** Treatment group means (and standard deviations) and GLM linear trend statistical values for pre-treatment, post-treatment and follow-up anger scale measures

Measure <sup>‡</sup>	Pre-treatment	Post-treatment	12 months follow-up	Degrees of freedom (d.f.)	F	p	r <sup>§</sup>
NAS (n = 66)							
NAS Total	102.84 (14.18)	95.53 (14.88)	90.01 (13.10)	1,65	50.64	.000	.66
Cognitive	34.74 (4.20)	33.06 (6.56)	31.09 (4.34)	1,65	39.42	.000	.61
Arousal	34.20 (6.28)	31.48 (5.57)	29.62 (5.60)	1,65	29.33	.000	.56
Behavioural	33.94 (6.23)	30.86 (5.48)	29.30 (5.60)	1,65	39.15	.000	.61
Regulation	23.77 (4.63)	25.71 (4.15)	24.93 (4.72)	1,65	3.29	.074	.22
STAXI (n = 61)							
Trait Anger	23.48 (6.90)	21.40 (5.95)	19.63 (5.88)	1,60	17.65	.000	.47
Anger Expression	37.72 (8.97)	32.13 (8.82)	30.16 (10.22)	1,60	33.90	.000	.60
Anger Control	18.11 (7.28)	19.03 (5.21)	20.44 (6.30)	1,60	4.78	.033	.27
PI (n = 56)							
PI Total	71.93 (13.40)	66.60 (16.04)	65.73 (16.57)	1,55	7.32	.009	.34

<sup>‡</sup>The numbers included in the analyses vary as not all participants were able to be assessed on all outcome measures at each assessment point.

<sup>§</sup>The calculation of effect size is  $r = \sqrt{F/(F+d.f. \text{ error})}$  (Rosnow and Rosenthal, 1988; p. 206). For this effect size calculation, Cohen (1992) suggests that an  $r$  of .1 should be considered a 'small' effect, an  $r$  of .3 be considered a 'medium' effect, and an  $r$  of .5 be considered a 'large effect' (p. 157).

cognitive, arousal and behavioural aspects of anger. The STAXI Trait Anger scale (10 items) and Anger Expression scale (24 items) measure the disposition to experience angry feelings as a personality-like trait over time.

The 25-item Provocation Inventory (PI; Novaco, 2003) was used to measure participants' anger reactivity across a range of potentially anger-provoking situations. The 8-item STAXI Anger Control sub-scale and the NAS Regulation scale (12 items) were used to measure participants' capacity to regulate their anger.

The NAS, STAXI and PI are self-report measures and all were modified for use with clients with intellectual disabilities and were administered in the form of structured interviews – as opposed to pencil-and-paper tests originally – to ameliorate the cognitive limitations of patients with intellectual disabilities. Novaco and Taylor (2004) established the reliability and validity for the modified self-rated anger measures used in the current study.

## Results

Table 1 gives the means, standard deviations and statistical values for the NAS, PI and STAXI scores at three assessment points: pre-treatment, post-treatment and 12-month follow-up. General linear model repeated measures analyses of linear trend showed significant effects for measures of anger disposition (NAS Total and sub-scales, STAXI Trait Anger and Anger Expression), anger reactivity (PI Total) and anger regulation (STAXI Anger Control). The NAS Regulation scale scores did not change significantly over the three assessment points.

To investigate whether treatment outcome was potentially a function of study therapists' experience, study participants were partitioned according to whether they had received treatment from a qualified or unqualified therapist. Linear trend analyses were then re-run with the qualified/unqualified therapist variable entered as a between-subjects factor. No interaction effects (for therapist experience  $\times$  assessment interval) were found for any of the measures tested, with the exception of STAXI Anger Control and NAS Regulation scales,  $F_{1,59} = 4.55$ ,  $p < .05$ ,  $r = .28$  and  $F_{1,64} = 7.51$ ,  $p < .01$ ,  $r = .32$ , respectively. The qualified therapists' patients' STAXI Anger Control scores significantly improved following treatment and this improvement was maintained at follow-up whereas there was no improvement

overall on this measure for the unqualified therapists' patients. This pattern was repeated for the NAS Regulation scale.

Change scores from pre- to post-treatment and pre-treatment to 12-month follow-up were calculated for the study measures included in Table 1. To further test whether treatment responsiveness was associated with therapist experience, patients who had treatment delivered by qualified therapists were compared with those who had unqualified therapists for differences on anger change scores from pre- to post-treatment and pre-treatment to 12-month follow-up. Using independent samples *t*-tests, no significant differences were found in treatment change scores between the qualified and unqualified therapist groups for any study measures, excepting for the STAXI Anger Control and NAS Regulation scales. Pre- to post-treatment improvement scores were greater for the qualified therapists group on both scales;  $t_{86} = 2.73$ ,  $p = .008$  for STAXI Anger Control and  $t_{86} = 3.07$ ,  $p = .003$  in the case of NAS Regulation. Similarly, pre-treatment to 12-month follow-up change scores were greater for the qualified therapists group on both these scales;  $t_{59} = 2.13$ ,  $p = .037$  for STAXI Anger Control and  $t_{64} = 2.74$ ,  $p = .008$  for NAS Regulation.

## Discussion

In this evaluation of clinical service delivery, male and female detained patients with intellectual disabilities and forensic histories benefited from an individual cognitive behavioural anger treatment intervention as assessed using a range of self-rated measures of anger disposition, reactivity and control. Significant improvements recorded following the intervention were maintained at 12-month follow-up. These findings are consistent with the results of previous concatenated controlled studies showing that male patients in this forensic population improved significantly compared with participants in wait-list control conditions (Taylor *et al.*, 2002; Taylor *et al.*, 2004; Taylor *et al.*, 2005). This is a positive finding, not least given that improvements on these measures have been shown to be associated with significant reductions in aggression and violence in this study population (Novaco and Taylor, 2015; Taylor *et al.*, 2016).

Overall, there was no evidence that responsiveness to the anger treatment was associated with whether the therapist was a qualified psychologist or an unqualified trainee or assistant psychologist, suggesting that CBT for anger control problems can be effective for people with intellectual disabilities and forensic histories when delivered by inexperienced therapists who receive training and close supervision in delivering a manual-guided intervention. These findings are consistent with those from studies looking at outcomes achieved by trainee therapists delivering psychological interventions to other patient populations (e.g. Mason *et al.*, 2016; Michael *et al.*, 2005; Minami *et al.*, 2009).

The previous research concerning the ability of inexperienced therapists to achieve good outcomes with cognitive behavioural anger treatment delivered to adults with intellectual disabilities is limited and has produced mixed results. The large-scale multi-site trial conducted by Willner *et al.* (2013) found that unqualified therapists (in this case day-services staff) did not obtain significant improvements following a group-based intervention. It should be noted, however, that in addition to these therapists not having any graduate level education in psychological theory, they were 'minimally trained' having received just one day of training on the intervention and minimal supervision during the delivery of the therapy. Furthermore, due to the inexperience of the therapists, whilst the intervention was 'constructed from a CBT-orientation', it 'did not include the full range of CBT techniques'. As such, it is difficult to know whether the lack of improvement found in this trial was due to the inexperience of the therapists, the less-than-optimal intervention provided, or a combination of both.

Rose (2013) found that whilst adult community clients with intellectual disabilities benefited from an individually delivered cognitive behavioural anger intervention delivered by experienced



and inexperienced therapists, experienced clinical psychologists achieved better pre-post treatment outcomes than graduate assistant psychologists who received close supervision and monitoring by qualified staff. The current study extends the Rose study in terms of more than doubling the patient participant numbers, assessing more domains of anger and including a 12-month follow-up assessment period – and it took place in a specialist in-patient setting with detained patients with significant forensic histories.

The question about whether trainee therapists can successfully deliver anger treatment is connected to the larger literatures on therapist training and therapist competence in psychotherapy in general and in CBT in particular. Concern with therapist level of training overlaps with the issue of therapist competence but is not isomorphic with it. Fairburn and Cooper (2011) defined therapist competence as ‘the extent to which the therapist has the knowledge and skills required to deliver a treatment to the standard needed for it to achieve its expected effects’. Training is intended to enhance competence, and higher levels of training are presumed to be associated with greater competence. A meta-analysis by Stein and Lambert (1995) that examined therapist training and therapy outcome in 36 studies found a ‘modest but fairly consistent treatment effect size associated with training level for a number of measures of client improvement’.

Therapist competence, especially in evidence-based practice, is expected to be related to therapeutic outcome; however, a review by Beidas and Kendall (2010) concluded that client change did not always follow as a result of training therapists in the gold standards for various treatments; and Liness *et al.* (2019) found that the competence of closely monitored and evaluated trainees on a formal UK university-based CBT training course was not significantly associated with patient outcome. Similarly, Weck *et al.* (2017) reported from a controlled study that patient outcomes were not significantly different for the more competent – versus the less competent – group of trainee CBT therapists following a university programme in Germany.

On the other hand, Branson *et al.* (2015) looked at the relationship between therapist competence and patient outcomes following CBT for common mental health disorders. This UK study involved 43 trainee therapists who delivered therapy to 1247 patients over a one-year period. Significantly more patients than expected experienced reliable clinical change when treated by the most competent therapists and significantly more patients treated by the least competent therapists experienced deterioration in their symptoms than would be expected by chance alone. In a large-scale US trial with a long follow-up period, Brown *et al.* (2013) found that novice therapists’ assessed competency was related to improved clinical outcomes for patients with anxiety disorders treated with computer-assisted CBT.

Although the inter-relationship between therapists’ level of training, competence and treatment outcome is complex, there are indications that whilst inexperienced/trainee/novice therapists can achieve significant clinical outcomes using protocol-guided CBT intervention under supervision, the improvements obtained by these therapists are not as great as those achieved by more experienced therapists (e.g. Forand *et al.*, 2011; Mason *et al.*, 2016). This was found to be the case also in the Rose (2013) study of CBT anger treatment for adults with intellectual disabilities – and mirrored to a limited extent in the findings of the current study in relation to anger regulation or control. It is interesting to speculate about the reasons why the unqualified therapists were unable to effect significant change in this domain. It is possible that the abilities required for better regulation of the emotional responses and control of the behavioural reactions to anger provocation are more complex and qualified therapists were better able to assist patients with developing the integrated cognitive, arousal reduction and behavioural skills necessary. This is the focus of the latter stages of the treatment programme used in this study. Closer supervision and support, or co-working with a qualified therapist during this more technically complex element of the intervention may be indicated.

The current study has a number of limitations. It is an evaluation of an intervention provided routinely in a clinical service setting and as such the groups used were convenience samples. Although the groups allocated to the qualified and unqualified therapists were not significantly different on demographic variables – bar age with older patients in the qualified therapists group – there were some differences on pre-treatment anger measures. The patients allocated to the qualified therapists group had significantly higher STAXI Trait Anger and Anger Expression and lower NAS Regulation scores. This reflects the reality of routine clinical service provision with older – potentially more intractable – patients with more severe anger problems being allocated to the most experienced therapists in a non-random manner.

A further limitation is that whilst therapists' progress in delivering the manual-guided therapy was closely monitored through weekly individual and group supervision – overseen by a lead consultant psychologist – there was no formal assessment of therapists' competencies or evaluations or treatment adherence. These important limitations aside, the results provide some support for notion of 'limited-domain intervention competence' of the unqualified therapists in this study (Barber *et al.*, 2007). That is, the ability to successfully implement a specific form of treatment with a defined patient group in a particular setting – in this case cognitive behavioural anger treatment with adults with intellectual disabilities detained in a secure hospital service – with close supervision and support from experienced qualified clinicians.

**Data availability statement.** The data that support the findings of this study are available from the corresponding author (J.L.T.) upon reasonable request.

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**Author contributions.** **John Taylor:** Conceptualization (equal), Formal analysis (equal), Investigation (lead), Project administration (lead), Writing – original draft (lead), Writing – review & editing (equal); **Ray Novaco:** Conceptualization (equal), Formal analysis (supporting), Investigation (supporting), Methodology (equal), Writing – original draft (supporting).

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**Conflicts of interest.** The authors declare none.

**Ethical standards.** The study was reviewed and approved by the Cumbria, Northumberland, Tyne & Wear NHS Foundation Trust's Research, Innovation and Clinical Effectiveness Department and was registered on the Trust clinical governance database (reference no. SER18-06). The authors have abided by the Ethical Principles of Psychologists and Code of Conduct as set out by the BABCP and BPS.

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