An evaluation of the EQUIP treatment programme with men who have intellectual or other developmental disabilities.

Peter E. Langdon
University of East Anglia
&
Hertfordshire Partnership NHS Foundation Trust - Norfolk

Glynis H. Murphy
University of Kent

Isabel C.H. Clare
University of Cambridge
&
Cambridgeshire and Peterborough NHS Foundation Trust

Emma J. Palmer
University of Leicester

Joanna Rees
Suffolk Mental Health Partnership NHS Trust

Author Note

Peter E. Langdon, Department of Psychological Sciences, Norwich Medical School, University of East Anglia, UK and Broadland Clinic, Hertfordshire Partnership NHS Foundation Trust - Norfolk, UK; Glynis H. Murphy, Tizard Centre, University of Kent, UK; Isabel C.H. Clare, Cambridge Intellectual & Developmental Disabilities Research Group, Department of Psychiatry, University of Cambridge, UK and Cambridgeshire and Peterborough NHS Foundation Trust; Emma J. Palmer, School of Psychology, University of Leicester, UK; Joanna Rees, Suffolk Mental Health Partnership NHS Trust, UK.

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Correspondence concerning this article should be addressed to Dr Peter E Langdon, Department of Psychological Sciences, Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ, United Kingdom. Email: P.Langdon@uea.ac.uk

Abstract

Background: The Equipping Youth to Help One Another Programme (EQUIP) was designed for young offenders to address a developmental delay in moral reasoning, distorted cognitions and social skills.

Materials and Methods: We undertook a single case series study and piloted an adapted version of the EQUIP programme with three men with intellectual disabilities (ID) and four men with a diagnosis of Asperger Syndrome, all of whom were detained in a medium-secure forensic unit for people with ID. Treatment was delivered over a 12-week period, and participants took part in four one-hour sessions per week.

Results: The results suggest that treatment was successful at increasing moral reasoning ability, reducing distorted cognitions and improving ability to choose effective solutions to problems. However, treatment did not have a significant effect upon anger.

Conclusions: The EQUIP programme is a promising treatment, but further research is needed to investigate its effectiveness with men with intellectual or other developmental disabilities.

KEYWORDS: Learning Disabilities, Moral Development, Intellectual Disabilities, Autism, Asperger Syndrome, SRM-SF, Criminal Offending, Offenders, Moral Reasoning, Moral Judgement, EQUIP, Perspective Taking

An evaluation of the EQUIP treatment programme with men who have intellectual or other developmental disabilities.

Piaget (1932) is often credited as the first to examine the moral development of children from a psychological perspective. Kohlberg (1969, 1976) later revised this theory and also increased its scope beyond childhood, to adolescence and adulthood. While some have criticised Kohlberg (Gilligan, 1982; Krebs & Denton, 2005; Schweder, 1982; Sullivan, 1977), others have revised and developed his work into a sociomoral stage theory (Gibbs, 1979, 2003, 2010), which has been shown to have cross-cultural validity (Gibbs, Basinger, Grime, & Snarey, 2007). Gibbs' (1979, 2003, 2010) revised theory comprises four stages, and three transition stages, nested within a single phase, which is spread across two levels and labelled Immature and Mature (Table 1).

Insert Table 1 about here

Gibbs (2003, 2010) placed moral reasoning within the context of traditional information processing theory, drawing parallels between moral stages and schema. He argued that illegal behaviour is driven by delays in moral reasoning, interacting with social skills problems and distorted cognitions. This sociomoral reasoning theory has been used widely to examine the relationship between such behaviour and moral reasoning, and has led to further developments in the theory. Different approaches have been adopted, nesting theories of moral development within the social (Semetana, 1999; Turiel, 1983, 2002) or emotional (Eisenberg, Reykowski, & Staub, 1989; Hoffman, 2000) domains. However, with some very limited exceptions (such

as Bolton, 2007), none have been applied to people with intellectual or other developmental disabilities.

In order to address this shortcoming, Langdon, Clare and Murphy (2010a) undertook a structured review of the moral reasoning literature regarding people with intellectual and other developmental disabilities. They noted that many of the studies pre-dated more recent theoretical developments, but concluded that the moral development of children, adolescents and adults with intellectual disabilities (IDs) tends to occur at a slower pace than that of typically developing peers, and these differences may be accounted for by their limited cognitive abilities. However, they also suggested that these conclusions must be viewed cautiously because many of the studies made use of idiosyncratic and unstandardised assessment methods.

As a consequence, Langdon, Clare, Murphy and Palmer (2010b) examined the psychometric properties of two measures of moral reasoning abilities amongst men with and without IDs who had no known history of illegal behaviour. They concluded that the Sociomoral Reflection Measure-Short Form (Gibbs, Basinger, & Fuller, 1992) had superior psychometric properties to the Moral Theme Inventory (Narvaez, Gleason, Mitchell, & Bentley, 1999) when used with men with IDs. They also found that men with IDs have moral reasoning abilities that are developmentally immature in comparison to men without IDs. Given the evidence that links immature moral reasoning and illegal behaviour (Blasi, 1980; Nelson, Smith, & Dodd, 1990; Stams et al., 2006), this is of considerable interest. However, the men with IDs who participated in the study by Langdon et al. (2010b) had no known history of illegal behaviour. As a consequence, they interpreted their findings in light of a previous paper (Langdon, Clare, & Murphy, 2011a), arguing that the relationship between moral reasoning and illegal behaviour may be moderated by intelligence and therefore

approximate an inverted U-curve (Figure 1). The implication is that those with IDs and no history of illegal behaviour may tend to show developmentally less mature moral reasoning, associated with justifications that appeal to unilateral authority and avoidance of punishment; therefore as a group, they may demonstrate lower rates of illegal behaviour (see Langdon et al., 2011a) Consistent with this prediction, Langdon et al. (2010b) found that men with IDs and no known history of such behaviour engaged in moral reasoning about property, law and legal justice in a way that was developmentally less mature. In contrast, those without IDs, who also had no known history of illegal behaviour, engaged in more mature moral reasoning.

Insert Figure 1 About Here

Langdon and his colleagues (Langdon, Murphy, Clare, Steverson, & Palmer, in press) went on to examine the moral reasoning of men with and without IDs who had, or did not have, a known history of illegal behaviour leading to one or more criminal convictions. Their findings were similar to those of Langdon et al. (2010b) regarding men with IDs with no known criminal history: again, the moral reasoning of such men fell within the less mature stages associated with rule-governed behaviour and avoidance of punishment. However, the moral reasoning of their peers with IDs and a history of criminal offending was *more* mature. Indeed, the moral reasoning of offenders with IDs was actually very like that of young offenders (Blasi, 1980; Nelson et al., 1990; Stams et al., 2006).

Given the similarities between the moral reasoning of men with IDs and a history of criminal offending and young offenders, Langdon et al. (2011b) considered whether interventions drawing on moral reasoning theory might be effective for those

with IDs Interventions for young offenders, grounded in theories of moral development, aim to enhance moral reasoning ability as a protective factor. However, when such interventions focus only upon moral reasoning, their impact on behaviour is very limited (Arbuthnot & Gordon, 1986; Gibbs, Arnold, Alhborn, & Cheesman, 1984; Gibbs, Potter, & Goldstein, 1995; Niles, 1986). This should not be surprising, according to Gibbs and his colleagues (2003, 2010; Gibbs et al., 1995), since moral reasoning is a distal factor in illegal behaviour.

Gibbs (2003, 2010) has argued that behaviour leading to criminal convictions among young offenders is associated not only with distal factors, but also with proximal factors, such as distorted cognitions and limited social skills. According to Gibbs(2003, 2010), and also Palmer (2003a, 2003b), illegal behaviour is driven by cognitive distortions that stem from schema reflecting moral reasoning abilities (Gibbs, 2003, 2010). Effective interventions therefore need to target moral reasoning, distorted cognitions, and social skills limitations. A programme designed to enhance moral development, tackle distorted cognitions through a process of perspective taking, and address social skills limitations has been designed by Gibbs and his colleagues (Gibbs, Potter, Barriga, & Liau, 1996; Gibbs et al., 1995; Potter, Gibbs, & Goldstein, 2001). The Equipping Youth to Help One Another Programme (EQUIP; Gibbs et al., 1996; Gibbs et al., 1995; Potter et al., 2001) has its roots in Aggression Replacement Training (Goldstein, Glick, & Gibbs, 1998) in the context of a positive peer culture (Vorrath & Brendtro, 1985). Through anger-management training, the programme explicitly targets distorted cognitions, with role play to teach appropriate social skills, and facilitated discussion around moral dilemmas to encourage moral development.

There are very few outcome studies evaluating the effectiveness of EQUIP. Leeman, Gibbs and Fuller (1993) demonstrated that the programme is effective in reducing misconduct and recidivism, and improving social skills amongst young offenders. Others, again working with young offenders, have shown that it is effective in reducing cognitive distortions (Brugman & Bink, 2010; Nas, Brugman, & Koops, 2005). Unfortunately, however, it seems to have little impact on moral reasoning or social skills (Nas et al., 2005) and does not even always reduce recidivism (Brugman & Bink, 2010). In contrast, an intervention study, again with young offenders, and using similar techniques to those of EQUIP, namely group sessions where moral dilemmas were discussed, reported significant improvements in moral reasoning (Gibbs et al., 1984). In this study, all the groups included participants who demonstrated some developmentally more mature moral reasoning. Gibbs and his colleagues (Gibbs et al., 1984) argued that this may have had a crucial role in enhancing the moral reasoning of their less developmentally mature peers.

Given the findings that men with IDs may demonstrate moral reasoning similar to that of young offenders, and evidence that EQUIP may have some beneficial effects, the aim of this study was to evaluate the effectiveness of an adapted version of the EQUIP programme for use with men with intellectual or other developmental disabilities. Using a single case series design, seven men with intellectual or other developmental disabilities and a history of illegal behaviour leading to criminal convictions took part in an EQUIP treatment programme over 12 weeks. Participants completed pre- and post-treatment measures of moral reasoning, problem solving ability, cognitive distortions, and anger. We hypothesised that treatment would lead to an increase in moral reasoning and problem solving abilities, and a decrease in distorted cognitions and anger.

Methods

Participants

Seven men (representing 29% of the total patient population within the hospital) were recruited from a single NHS medium-secure hospital for men with intellectual and other developmental disabilities in the East of England. The specific inclusion criteria were 1) diagnosis of an intellectual disability or other developmental disability, and 2) history of illegal behaviour leading to conviction and detention within hospital under s.37 of the Mental Health Act (England and Wales) 2003 (as amended 2007) for treatment. Specific exclusion criteria were judgements by the potential participant's clinical team that he either a) lacked capacity to consent to take part and/or 2) had an acute mental illness that would impair his ability to take part in the group. With the exception of participant 6, all participants were detained under s.41 of the MHA, meaning that they could not be discharged from hospital without the approval of the Secretary of State for Justice. Further information about each participant is found in Table 2.

Insert Table 2 about here

Design

Using a single case series design, assessment measures were completed within two to three weeks of the start, and again at the end, of the intervention.

Measures

Moral Reasoning. The Sociomoral Reflection Measure (SRM-SF) is a production measure of moral reasoning (Gibbs et al., 1992) and has been shown to

possess high levels of test-retest reliability (r=0.88; Gibbs et al., 1992), and excellent internal consistency (α=0.92; Gibbs et al., 1992). Langdon et al. (2010b) demonstrated that the SRM-SF has substantial internal consistency and good test-retest reliability when used with men with IDs. The SRM-SF appears valid as it is correlated with the Moral Judgement Interview, and discriminates between children of differing chronological ages, as well as between 'delinquent' and 'non-delinquent' adolescents (Gibbs et al., 1992).

The SRM-SF comprises eleven questions, and generally takes about twenty minutes to present. The questions relate to the following seven constructs, a) Contract (questions one to three), b) Truth (question four), c) Affiliation (questions five and six), d) Life (questions seven and eight), e) Property (question nine), f) Law (question ten), and g) Legal Justice (question eleven). Each question is relatively brief, and invites the participant initially to consider the importance of behaving in a certain manner, or making a certain decision, and choose one of three response options. For example, when asked the question, "Think about when you've made a promise to a friend of yours. How important is it for people to keep promises, if they can, to their friends?", the participant is asked to choose whether this is very important, important, or not important. Next, participants are asked to consider their initial response by answering the following question, "Why is that very important / important / not important?". Participants write their answers on the questionnaire, or provide them orally to be recorded by the interviewer.

Verbatim answers are scored according to a set of complex rules and heuristics, and the development of proficient and reliable scoring occurs through the use of practice scoring material (Gibbs et al., 1992). Responses to each question are assigned a developmental rating which corresponds to a moral stage associated with

Gibb's Socio-Moral Reasoning Theory. At least seven of the eleven questions must be answered with scoreable material in order for a questionnaire to be scored reliably. Once a developmental rating is assigned to each question, it is converted to a number (e.g. a developmental rating of 1 corresponds to moral Stage 1, and is assigned the numerical value 1). Scores across all the questions are then summed and the mean is calculated and multiplied by 100, yielding a possible score between 100 to 400. As shown in Table 3, these scores correspond to a person's moral stage. Additionally, moral stage ratings can be generated for the seven constructs examined by the SRM-SF: a) Contract, b) Truth, c) Affiliation, d) Life, e) Property, f) Law, and g) Justice. The scores generated across these constructs are interpreted using Table 3. The inter-rater reliability of the scoring of the SRM-SF was calculated using a *blind* rater who scored all of the completed questionnaires. Inter-rater reliability was determined to be $r_i(7)=0.987$ at pre-treatment and $r_i(7)=0.994$ at post-treatment using intraclass correlations.

Insert Table 3 About Here

Cognitive Distortions. The How I Think (HIT) Questionnaire (Barriga, Gibbs, Potter, & Liau, 2001) is a measure of cognitive distortions based upon the four-categories proposed by Gibbs and colleagues (Gibbs, 1991, 1993; Gibbs et al., 1995). These are: a) Self-Centred, b) Blaming Others, c) Minimizing/Mislabelling, and d) Assuming the Worst. The HIT has 54 items and respondents are asked to indicate their degree of agreement along a six-point scale from "agree strongly" to "disagree

strongly". Total and mean scores are derived for the four-categories of distorted thinking as well as four behavioural referent subscales: a) Opposition-Defiance, b) Physical Aggression, c) Lying and d) Stealing. An Anomalous Responding scale is also calculated, along with three Summary Scales: a) Overt Scale, b) Covert Scale, and c) Total Score. The Overt Scale is calculated from the Opposition-Defiance and Physical Aggression subscales, while the Covert Scale is calculated from the Lying and Stealing subscales. The Total Score is calculated from all subscales. Barriga et al. (2001) reported that confirmatory factor analysis supported the structure of the HIT. Internal consistency of the HIT has been reported to range from 0.63 to 0.96, and the measure has been shown to possess convergent, divergent and discriminant validity (Barriga et al., 2001). The measure has been previously used with men who have IDs (Langdon et al., 2011b), although there is no reliability and validity data regarding the measure when used with this population.

Problem Solving Ability. The Problem Solving Task (PST; Rees, 2009) was developed specifically for use with people with IDs. The PST was adapted from a similar set of tasks developed for use with sexual offenders with IDs (Nezu, Nezu, Good, & Saad, 1998). The original version has been used as an outcome measure in problem-solving training groups (Nezu, Nezu, & Arean, 1991), and contained problem situations that were relevant to sexual offenders. Rees (2009)amended the situations to include general problems that were more appropriate to people with intellectual or other developmental disabilities who may not be offenders. For example, one of the five vignettes read as follows, "You borrowed your friend's CD, but you accidentally broke it. You would like to buy him/her a new one but you don't have enough money at the moment. You feel bad because he/she likes the CD and asked you to be very careful with it".

The PST consists of five problem situations that are read to the participant. Participants are then asked a series of questions concerning: a) problem identification, b) generation of solutions, c) selection of appropriate solutions, and d) evaluation of solutions. These steps are based on the model outlined by D'Zurilla and Goldfried (1971). Responses to questions are scored according to a set of criteria regarding the appropriateness of each response (along a five-point Likert scale). The mean score across each of the four types of questions and the mean total score are calculated for each participant.

Rees (2009) reported that the test-retest reliability of the PST was excellent (r_i=0.976), as was interrater reliability (r_i=0.939). For the current study, interrater reliability was calculated using a *blind* rater who scored all of the questionnaires. Interrater reliability at pre-treatment was $r_i(7)$=0.934 and $r_i(7)$=0.921 at post-treatment calculated using intraclass correlations.

Anger. The Anger Inventory for "Mentally Retarded" Persons (AI-MRP; Benson, 1992) was used to index anger problems within the current study. The AI-MRP is based on the Children's Inventory of Anger (Nelson & Finch, 2000) and is a thirty-five item instrument that presents situations that may make someone angry. Participants are asked to respond to each situation by choosing one of four cartoon pictures that indicates how angry they would feel. Responses to items are summed, giving a total score. Hendrix (1983, cited in Benson & Ivins, 1992) found the test-retest reliability of the AI-MRP to be 0.62, and factor analysis indicated the measure has a single factor solution. The measure has been used as part of an anger managements training programme for adults with IDs (Benson, 1992) and to evaluate the outcome of such training (Benson, Rice, & Miranti, 1986).

Procedure

Following a favourable ethical opinion from the Cambridge 4 NHS Research Ethics Committee, potential participants were approached, after consultation, during ward rounds, with the clinical team responsible for their care, and provided with written information about the study. Potential participants who expressed an interest in the study met with a researcher who explained it in more detail. Those who then wished to take part were then asked to provide written consent. They all had the opportunity to have someone else present during this process. No one was involved whose capacity to consent to participate in the research was uncertain.

Intervention

The Equipping Youth to Help One Another (EQUIP) Programme. The EQUIP programme (Gibbs et al., 1996; Gibbs et al., 1995; Potter et al., 2001) is a manualised treatment programme that was adapted and delivered over 4 sessions per week for 12 weeks. The EQUIP programme is a multicomponent programme comprising two types of treatment sessions: a) Mutual Help Meetings, and b) Equipment Meetings. Mutual Help Meetings provide a forum for participants to discuss their difficulties within a framework that allows for an appropriate resolution. Group members are encouraged to report problems and thinking errors that have occurred since the last meeting and one individual is chosen collaboratively by the group to discuss his/her problem in greater depth. The group is provided with a list of "12 potential problems" that they may have or may develop, which is used as a reference to aid participants' understanding of their difficulties. The group then works together to actively solve this problem, while paying attention to the type of difficulty it is and the thinking errors experienced. Equipment Meetings are "active

treatment" meetings comprising three different types of sessions: a) anger management and thinking error correction, b) social skills training, and c) social decision-making training. There are 30 sessions spread equally across these three domains. Anger management and thinking error correction involves psychoeducation about anger, and the teaching of skills to manage anger more effectively, including relaxation training. Cognitive strategies for challenging distorted cognitions are also taught. Social skills training involves the active teaching of skills, using role play and other methods, that would be required within a variety of social situations, including difficult situations (e.g. expressing a complaint, keeping out of fights, dealing constructively with someone who is angry at you). Finally, social decision-making aims to enhance moral development through a process of guided discussion and debate about problem situations. Detailed information about the treatment programme can be found in Potter et al. (2001) and Gibbs et al. (1995).

The treatment programme was delivered over 12 weeks, with four one-hour sessions taking place each week. The first week of four sessions involved orientating the group to the Mutual Help Meetings and the Equipment programme. Each of the following ten weeks involved one session of anger management, one session of social skills training, and one session of social decision making, followed by one Mutual Help Session. The final week comprised four Mutual Help Sessions. All sessions were led by a clinical psychologist (PL) with support from unit staff and another psychologist. For all sessions, there were three facilitators present.

Initially, aspects of the EQUIP programme were modified for use with people with intellectual or other developmental disabilities. Homework tasks were simplified, although the purpose of these tasks was not changed. Throughout the EQUIP programme, participants were encouraged to make reference to the list of "12

potential problems". The names of some of these problems were considered confusing and were therefore modified. For example, an "authority problem" was re-labelled a "hates being told what to do problem". Each problem was accompanied by a cartoon character, and the description of each problem was simplified. The revised problem list and accompanying characters are shown in Table 4. Participants were also asked to make reference to four possible categories of distorted cognitions, or thinking errors, throughout the EQUIP programme. These four categories are: a) self-centred, b) minimising/mislabelling, c) assuming the worst, and d) blaming others. Some augmentation of the explanation of these thinking errors was required in order to improve understanding, and this is found in Table 5. The material in Table 4 and Table 5 was incorporated into posters that were placed in the ward areas within the medium-secure service. Participants and staff were encouraged to use these posters as a reference when discussing or dealing with problems outside the treatment groups.

Insert Table 4 and 5 about here

The social decision making sessions within EQUIP made use of guided discussion about a problem situation. The problem situations provided as part of the EQUIP programme required modification because they were more culturally appropriate for the U.S.A., and for use with young offenders. However, the original purpose or problem within each situation was retained. An example of a modified problem situation is as follows "Leon has been in a secure unit for a while and then he tried to escape. As a result, all of his leave was cancelled and he was moved to a different unit. It took Leon one year to earn the trust of the staff again. He now thinks it is stupid to try to escape. However, Bob, who is also in the secure unit, tells Leon

he is planning to escape that night. "I've got it all figured out," Bob says. "I'll hit the staff on the head and take their keys." Bob asks Leon to come along. Leon tries to talk Bob out of it, but Bob won't listen". Following the reading of a problem situation, participants were asked a series of questions to guide discussion and encourage perspective taking.

Data Preparation and Analysis

All data were analysed using SPSS Version 18.0.2. Scores across all the questionnaires for individual participants are reported. Mean pre- and post-treatment scores were calculated across the measures and comparisons across time were made using the Wilcoxon Signed-Rank Test. Exact significance was calculated and is reported.

Results

Individual participant scores across all of the measures used in this study are found in Table 6. Examination of the moral reasoning scores on the SRM-SF revealed that Participants 1 and 4 were reasoning at stage 3 pre-treatment, while the remaining participants fell below stage 3; two were reasoning at stage 3(2), two were reasoning at stage 2(3) and one was reasoning at stage 2. All of the participants demonstrated moral reasoning below stage 3 in relation to Legal Justice. Participant 4 provided a justification that fell at stage 4 for Law, while the remaining participants provided justifications that fell below Stage 3. Table 7 shows that as a group, overall pre-treatment moral reasoning scores fell just inside moral stage 3(2).

Insert Table 6 about here

Post-treatment, scores on the SRM-SF increased for all participants, which is in the desired direction. However, Participants 1 and 5 did not shift a developmental stage. Participants 2 and 3 shifted one stage, to stage 3 and stage 3(2), respectively. Participants 4 and 6 shifted two stages, to stage 4(3) and stage 3, respectively, while Participant 7 shifted three stages, to stage 3 (Table 4). Following treatment, there was a significant increase in scores on Life ($z=1.90$, $p=0.047$), Property ($z=2.26$, $p=0.016$), Law ($z=2.21$, $p=0.016$), Legal Justice ($z=2.02$, $p=0.031$) and SRM-SF Total Score ($z=2.37$, $p=0.008$; Table 7).

Insert Table 7 about here

Looking at distorted cognitions pre-treatment, Participants 3 and 7 had Anomalous Responding scores above 4 on the HIT. Barriga et al. (2001) recommend that when participants score higher than 4 on this scale, the findings on the questionnaire should be treated cautiously, and when participants score higher than 4.25, the questionnaire should be discarded. Participant 3 scored above the 4.25 cut-off at pre-treatment, while participant 7 scored above this cut-off at post-treatment (Table 6). However, the results were not discarded because it is possible that the intellectual or developmental disabilities of these participants accounted, in part, for their elevated scores. Nevertheless, this should be considered when interpreting the findings. The remaining subscales on the HIT at pre-treatment were examined for each participant. Comparing the findings with normative data for young people aged 14 to 19 (Barriga et al., 2001), the results indicated that the scores of Participant 1 fell above the lower 'borderline-clinical' cut-off across all subscales, except Stealing. Participant 2's scores fell above this cut-off across all subscales, except on Physical

Aggression and Lying, while Participant 5's scores fell above the cut-off on Blaming Others and Lying. Only the scores of Participant 1 and 2 fell above the cut-off for the Total Score; those of the remaining participants did not.

Post-treatment, none of the participants' scores fell above the 'borderline-clinical' cut-off; lower scores are in the desired direction. Post-treatment scores were significantly lower than pre-treatment scores on the Self-Centred ($z=1.86$, $p=0.031$), Assuming the Worst ($z=2.21$, $p=0.016$), Minimising/Mislabelling ($z=1.99$, $p=0.031$), Opposition Defiance ($z=2.03$, $p=0.023$), Physical Aggression ($z=1.78$, $p=0.047$), and Lying ($z=2.38$, $p=0.008$) subscales. Post-treatment scores were also significantly lower than pre-treatment scores on the Overt ($z=2.03$, $p=0.008$), Covert ($z=1.86$, $p=0.039$) and Total Score ($z=1.86$, $p=0.039$) scales (Table 7).

Finally, turning to problem-solving, ability to choose effective solutions improved significantly with treatment ($z=2.16$, $p=0.023$), indicating that participants were more able to select solutions that were likely to overcome the relevant obstacles, achieve the desired goal, and minimise negative consequences (Table 6 and 7).

Discussion

We hypothesised that, following treatment, participants would show enhanced moral reasoning and problem solving, and reduced levels of distorted cognitions and anger. The findings indicated that participants' moral reasoning, and ability to choose solutions that were more likely to overcome the relevant obstacles, achieve the desired goal, and result in a minimum of negative consequences, increased. There was also a significant reduction in overall levels of distorted cognitions. Disappointingly,

however, overall problem solving ability did not change significantly, and there was no significant reduction in anger scores following treatment.

Other studies have reported that group-based discussion of moral dilemmas can bring about developmental increases in moral reasoning abilities (Arbuthnot & Gordon, 1986; Fleetwood & Parish, 1976; Gibbs et al., 1984; Rosenkoetter & Landman, 1980), but this has not been previously reported for the EQUIP treatment programme (Brugman & Bink, 2010; Leeman et al., 1993; Nas et al., 2005). One possible explanation of the discrepancy between our findings relating to moral reasoning and those of other studies is the composition of the groups. In contrast with our study, other studies have involved young offenders, whose moral development may be homogeneous. Kohlberg (1969, 1976) argued that social perspective-taking was necessary for developmental progression through the stages of moral reasoning, and Berkowitz, Gibbs and Broughton (1980) commented that developmental shifts from more immature levels of moral reasoning to more mature levels are promoted when one member of a social pair engages in more mature levels of moral reasoning. They demonstrated this experimentally by having two individuals, who were rated at different stages of moral reasoning, take part in a discussion. Following the discussion, a notable developmental shift took place in the participant whose moral reasoning had initially been less mature.

In this study, two participants in the EQUIP group were reasoning at "mature" moral reasoning stages prior to treatment, while the remainder demonstrated less developmentally mature moral reasoning. Gibbs et al. (1984) explicitly set out to ensure that treatment groups were "heterogeneous with respect to both dilemma discussions and sociomoral stages" (p.42), and reported significant increases in the moral reasoning of young offenders as a consequence of delivering eight sessions of

group discussion about moral dilemmas. It appears most likely that our finding that scores on the measure of moral reasoning increased post-treatment reflected the heterogeneity within the moral reasoning abilities of the participants. Indeed, Langdon et al. (2011a) commented that moral development theory provides a theoretical framework that supports the use of group-based interventions in preference to individual-based interventions within forensic contexts. However, the supposed superiority of group-based interventions may be affected if there is homogeneity in the moral reasoning of the members..

The findings from this study regarding distorted cognitions are consistent with those of Leeman et al. (1993), Nas et al. (2005) and Brugman and Bink (2010), who all reported distorted cognitions decreased following EQUIP treatment. However, it is worth noting that several of our participants did not appear to have pre-treatment difficulties with distorted thinking. It is possible that this reflected their experience of similar treatment programmes (e.g. group treatment for sexual offending or fire-setting) during their detention in hospital.

The finding that participants' ability to choose effective solutions to problem situations increased after treatment is encouraging. It is likely that, within the context of a larger trial, further effects on problem-solving ability may become evident. The absence of a significant effect on anger scores may be reflect the particular characteristics of the participants in the study. None of the seven self-reported clinically significant problems with anger, and all of them scored below the mean score on the AI-MRP (97.09 (SD=17.21)), calculated by Benson and Ivins (1992) from a sample of 118 people with IDs drawn from the community. Using these data as normative, the pre-treatment mean anger scores of the participants in our study fell at the 13th percentile, while the post-treatment mean anger score fell at the 6th

percentile. supporting the suggestion that anger was not a major difficulty for the participants.

The overall findings are promising, and are consistent with more recent findings from other studies that have attempted to address social problem solving amongst offenders with IDs (Lindsay et al., 2010). However, there are some obvious difficulties that require attention. First, the study used a case series design and as a consequence, little can be said about causality. Although post-treatment moral reasoning and the ability to choose problem solutions improved, while distorted cognitions decreased, we cannot know whether this change in scores resulted from the EQUIP treatment; it is possible that other confounding variables may have had an effect. The only way to address this problem is to undertake a larger study incorporating randomisation and appropriate control-groups. Secondly, some of the participants had previously received treatment, such as group-based treatment for their sexual offending or fire-setting behaviour. This is a problematic confound that was unavoidable within the context of research within a medium-secure hospital. The same difficulty arises in all studies drawing on samples from medium-secure hospitals where patients are receiving or have received additional treatments from mental health practitioners. Additionally, in future studies, follow-up data should be collected, as this was not possible within the current study. Finally, it is important to note that the three men with Asperger Syndrome, who are likely to have difficulties with social perspective-taking, appeared to benefit from this intervention. This was unexpected, but promising, although caution should be exercised when interpreting the findings.

Despite these shortcomings, the study suggests that the EQUIP programme represents a genuinely promising addition to existing psychological therapies available within medium- or high-secure hospitals. There are multiple benefits. First,

in contrast to many treatment programmes for people with intellectual or other developmental disabilities (e.g. sexual offending programmes; SOTSEC-ID, 2010), EQUIP is not offence-specific. Individuals with differing offence histories can attend the same group, helping ensure heterogeneity amongst participants. Secondly, it is a multi-component programme that is theoretically driven and aims to address problematic psycho-social difficulties common to many groups of criminal offenders. Thirdly, it can be easily modified to meet the needs of those with intellectual or other developmental disabilities. Fourthly, the programme provides a way of socialising participants into group-work so that they may go on and participate more effectively in programmes that aim to address specific offences, such as sex offending. Moreover, the "12 problems" and four types of distorted thinking that are the focus of EQUIP, and some of the techniques, could easily be included within existing offence-specific treatment programmes for specific offence types, enhancing continuity between treatments. The implication is that EQUIP may be the first line group-based intervention for people with intellectual or other developmental disabilities within secure services, with more specialist work following from this initial treatment. Fifthly, the programme can be delivered by staff working in secure units, and as a consequence, this may encourage generalisation outside the group, while giving those providing everyday treatment and support a framework for dealing with difficult situations that is linked to treatment. Finally, EQUIP is meant to lead to the creation of a positive-peer culture within organisations, and therefore should have a positive effect upon the social climate of a service. Langdon, Swift and Budd (2006) examined the social climate within a medium-secure service for people with intellectual disabilities, but to date, no studies have examined how this variable explicitly relates to treatment outcome within these services. In the present study, an

assessment of social climate was not carried out but we suggest that social climate should be included as part of future studies examining the effectiveness of EQUIP in secure services. A positive social climate is likely to have positive effect upon staff and participant groups.

In conclusion, the findings and their implications indicate that a much larger controlled trial of EQUIP with people with intellectual or other developmental disabilities detained in secure services is justified. This would allow for appropriate investigation of treatment effects and clarification of the benefits for participants and services.

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Table 1

Gibbs' Sociomoral Stage Theory

Level and Stage	***Description***
Level 1: Immature	
Stage 1: Unilateral and Physicalistic	Moral justifications are based upon unilateral authority and rule based, or related to punitive consequences of the violation of rules.
Stage 2: Exchanging and Instrumental	Moral justifications based upon an understanding that has arisen from social interaction with others. For example, decisions to help others may be justified because that person may help you in the future. Justifications remain superficial.
Level 2: Mature	
Stage 3: Mutual and Prosocial	Moral justifications are characterised by further decentration, and are based upon a prosocial understanding of emotional states (e.g. empathy), care and good conduct.
Stage 4: Systemic and Standard	Further maturity is indexed by the development of an understanding of the complex social structures in which we live. Justifications are also based upon constructs such as rights, values and character within society. Other justifications may be based upon social justice and responsibility or conscience.

Table 2

Participant Information

Participant 1 was 34 years old, with a Full Scale IQ of 77. He was diagnosed with Asperger Syndrome after pleading guilty to manslaughter. He had previous convictions for violent offences.
Participant 2 was 28 years old, with a Full Scale IQ of 88. He was diagnosed with Asperger Syndrome after being convicted of arson. He had previous convictions for theft.
Participant 3 was 21 years old, with a Full Scale IQ of 65. He had a diagnosis of mild intellectual disability and had been convicted of sexual offences involving a child under the age of 13 years. He had previous convictions for theft and sexual offending.
Participant 4 was 25 years old, with had a Full Scale IQ of 111. He was a man with a diagnosis of Asperger Syndrome who had pleaded guilty to arson.
Participant 5 was 30 years old, with had a Full Scale IQ of 65. He had a diagnosis of mild intellectual disability and depression. His had pleaded guilty to arson and had previous convictions for assault.
Participant 6 was 23 years old, with a Full Scale IQ of 69. He had a mild intellectual disability and had been convicted of sexual offences involving children under the age of 13. He had previous convictions for theft and assault.
Participant 7 was 36 years of age, with a Full Scale IQ of 77 and a diagnosis of Asperger Syndrome. He had pleaded guilty to manslaughter and had previous convictions relating to firearms.

Table 3

The relationship between scores on the Sociomoral Reflection Measure – Short Form (SRM-SF) and moral stages.

Score	***Moral Stage***
100 to 125	Stage 1
126 to 149	Transition Stage 1(2)
150 to 174	Transition Stage 2(1)
175 to 225	Stage 2
226 to 249	Transition Stage 2(3)
250 to 274	Transition Stage 3(2)
275 to 325	Stage 3
326 to 349	Transition Stage 3(4)
350 to 374	Transition Stage 4(3)
375 to 400	Stage 4

Table 4

List of augmented problems used within the adapted EQUIP programme

What problems might you have?

"LOW SELF ESTEEM" PROBLEM

You don't feel very good about yourself
You think others put you down
You quit things easily
You think you are a victim, even when you are hurting others

"TRICKS OTHERS" PROBLEM

You get others to do bad things for you
You get others to do your "dirty work"
You manipulate others
You pretend you had nothing to do with it when others get caught and you blame the other person

"MEAN TO YOURSELF" PROBLEM

You do things that hurt yourself
You run away from your problems
You don't think you have any problems

"EASILY MISLED" PROBLEM

You hang around with people who do bad things
You are willing to go along with friends when they do something bad
You are willing to break the rules or do bad things for others because you want them to like you

"MEAN TO OTHERS" PROBLEM

You do things that hurt other people
You don't care about other people's feelings
You enjoy making fun of other people, laughing at them, and calling them names

"DRUG AND ALCOHOL" PROBLEM

You abuse alcohol and drugs
You are afraid to face life without using drugs or alcohol
You think that drug and alcohol abuse are not bad
You blame the drugs or alcohol when you do something wrong

"HATES BEING TOLD WHAT TO DO" PROBLEM

You get into arguments with those in authority (like staff, or the police, or even a teacher) sometimes over small things
You hate others telling you what to do
You hate people giving you advice
You won't listen
You sulk and glare or even swear when you are being told to do something you don't want to do

"STEALING" PROBLEM

You take things that belong to other people
You don't respect others
You are willing to hurt people to take what you want

"ANGER" PROBLEM

You get offended too quickly
You get frustrated or irritated too quickly
You throw tantrums

"TELLING LIES" PROBLEM

You cannot be trusted
You tell lies and twist the truth
You tell lies to benefit yourself
When caught, you deny you told lies
Sometimes you lie for fun

"AGGRAVATES OTHERS" PROBLEM

You threaten and hassle other people
You bully other people
You tease other people
You try to "get back" at other people

"PUTTING ON A FRONT" PROBLEM

You try to impress others
You puff yourself up
You put on an act
You clown around to get attention
You are afraid to show your true feelings

Table 5

List of thinking errors and examples used within the augmented EQUIP programme.

Sometimes we make ERRORS when we think about situations.

ERRORS can cause problems.

When you make an ERROR, your BEHAVIOUR might get you into trouble with others.

Being	Blaming	Minimising	Thinking
Examples	*Examples*	*Examples*	*Examples*
"I can do what I want!"	"I got mixed up with the wrong crowd!"	"Drugs are only fun!"	"Why bother? It never works out for me!"
"No one can tell me what to do!"	"He was asking for it!"	"Everyone gets pissed!"	"I never do anything right!"
"I'm the boss!"	"It's his fault!"	"I just want to have a good time, what's so bad about that?!"	"They are all trying to get me!"
"Who does he think he is?!"	"She was asking for it!"	"I didn't really hurt him or her anyway!"	"What's the point? I'm going to prison anyway!"
"I'm better than you!"	"They made me do it!"	"All my mates do it!"	"No one cares about me. Everyone hates me!"

Table 6

Pre- and post-treatment scores across all measures for all participants

	Pre-treatment Scores							Post-treatment Scores						
	Participant Number							Particpant Number						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Sociomoral Reflection Measure- Short Form														
Contract (*M*)	300	300	250	300	317	250	267	333	300	283	367	250	317	317
Truth	300	250	250	250	250	250	200	350	250	250	350	250	400	250
Affliation (*M*)	275	300	275	325	250	225	200	350	200	275	325	325	275	325
Life (*M*)	325	300	225	275	250	250	175	300	300	300	350	300	275	300
Property	250	200	250	250	150	200	N.S.	300	250	300	400	250	250	250
Law	250	200	150	400	150	150	150	300	350	250	400	300	250	350
Legal Justice	250	200	250	250	200	250	200	350	350	200	400	300	250	300
Total Score	286	255	241	295	250	232	211	318	282	272	364	268	291	305
Moral Stage	3	3(2)	2(3)	3	3(2)	2(3)	2	3	3	3(2)	4(3)	3(2)	3	3
How I Think Questionnaire														
Anomalous Responding	2.50	3.00	4.63	3.25	2.38	3.13	4.13	2.88	2.00	2.88	3.00	2.25	3.00	5.75
Self-Centred	3.33	3.11	1.00	1.78	1.56	1.78	2.11	2.44	1.00	1.44	1.22	1.00	1.89	1.00
Blaming Others	5.50	2.90	1.50	1.40	3.50	2.00	1.50	2.10	1.00	1.80	1.40	1.00	2.50	1.00
Minimising Mislabelling	3.44	2.78	1.44	1.78	1.89	1.67	1.00	2.44	1.00	1.11	1.22	1.00	1.89	1.00
Asssuming the Worst	3.45	2.82	1.64	1.64	1.73	2.36	1.00	2.64	1.00	1.36	1.36	1.55	1.91	1.00
Opposition-Defiance	4.10	3.10	1.80	1.60	2.00	2.60	1.50	2.70	1.00	2.20	1.40	1.30	1.80	1.00
Physical Aggression	5.70	2.60	1.00	1.20	2.30	1.80	1.50	2.30	1.00	1.00	1.10	1.00	2.00	1.00
Lying	3.88	3.00	2.00	2.13	3.38	2.50	1.63	2.88	1.00	1.63	1.25	1.38	1.88	1.00
Stealing	2.27	2.91	1.00	1.73	1.36	1.18	1.00	1.91	1.00	1.00	1.73	1.36	1.18	1.00
Overt Scale	4.90	2.85	1.40	1.40	2.15	2.20	1.50	2.50	1.00	1.60	1.25	1.15	1.90	1.00
Covert Scale	3.07	2.95	1.50	1.93	2.37	1.84	1.31	2.39	1.00	1.31	1.35	1.19	2.16	1.00
Total Score	3.96	2.90	1.42	1.66	2.21	1.99	1.40	2.43	1.00	1.44	1.30	1.15	2.04	1.00
Problem Solving Task														
Problem Identification	4.40	3.40	4.20	4.20	3.60	3.80	3.40	3.60	3.80	4.40	4.60	4.20	4.60	4.20
Generation of Solutions	1.40	1.40	2.60	3.80	1.80	2.40	1.80	2.60	2.20	2.00	2.80	2.20	2.20	1.60
Solution Selection	3.60	2.60	2.60	3.20	3.00	3.00	3.00	3.40	3.00	3.00	3.60	3.40	3.60	3.20
Evlauation of Solutions	5.00	4.40	3.20	5.00	4.40	4.80	3.20	4.40	5.00	4.40	4.40	3.80	5.00	2.60
Total Score	18.00	14.75	15.75	20.25	16.00	17.50	14.25	17.50	17.50	17.25	19.25	17.00	19.25	14.50
Anger Inventory for Mental Retarded Persons														
Score	91.00	85.00	49.00	63.00	93.00	93.00	72.00	87.00	85.00	44.00	72.00	75.00	78.00	65.00

N.S. Not Scorable

Table 7

Mean (SD) scores at pre- and post-treatment across all measures.

	Pre-treatment *M* (SD)	**Post-treatment** *M* (SD)
Sociomoral Reflection Measure- Short Form		
Contract (*M*)	283.43 (27.25)	309.52 (37.09)
Truth	250.00 (28.89)	300.00 (64.55)
Affliation (*M*)	264.29 (43.96)	296.43 (50.89)
Life (*M*)	253.57 (56.70)	303.57* (22.49)
Property	216.67 (40.83)	285.71* (55.64)
Law	207.14 (93.22)	314.29* (55.64)
Legal Justice	228.57 (26.73)	307.14* (67.26)
Total Score	252.86 (26.73)	300.00** (33.32)
How I Think Questionnaire		
Anomalous Responding	3.29 (0.82)	3.12 (1.22)
Self-Centred	2.10 (0.84)	1.43* (0.55)
Blaming Others	2.61 (1.50)	1.54 (0.61)
Minimising Mislabelling	2.00 (0.83)	1.38* (0.57)
Asssuming the Worst	2.09 (0.84)	1.55* (0.57)
Opposition-Defiance	2.39 (0.95)	1.63* (0.64)
Physical Aggression	2.30 (1.60)	1.34* (0.56)
Lying	2.64 (0.81)	1.57** (0.66)
Stealing	1.64 (0.72)	1.40 (0.58)
Overt Scale	2.34 (1.24)	1.49 *(0.56)
Covert Scale	2.14 (0.69)	1.49 *(0.56)
Total Score	2.22 (0.93)	1.48 *(0.55)
Problem Solving Task		
Problem Identification	3.86 (0.41)	4.20 (0.38)
Generation of Solutions	2.17 (0.85)	2.23 (0.39)
Solution Selection	3.00 (0.35)	3.31* (0.25)
Evlauation of Solutions	4.29 (0.78)	4.23 (0.82)
Total Score	16.64 (2.09)	17.46 (1.60)
Anger Inventory for Mental Retarded Persons		
Score	78.00 (17.18)	72.29 (14.55)

**p<0.05*
***p<0.001*
****p<0.0001*