Do People with Intellectual Disabilities and Psychosis have the Cognitive Skills Required to Undertake Cognitive Behavioural Therapy?

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Accepted for publication 14 February 2005

Background Cognitive skills thought to be necessary to undertake cognitive–behavioural therapy (CBT) include the ability to recognize emotions, link events and emotions, and recognize cognitive mediation. These skills have been assessed in people with intellectual disabilities, but not in those who also have psychosis.

Materials and methods Tasks assessing receptive language ability and cognitive skills including the ability to differentiate between behaviours, thoughts and feelings were administered to 50 participants who had intellectual disabilities and psychosis.

Results The majority of participants were able to link events and emotions and differentiate behaviours and feelings. Participants found any task involving cognitions significantly more difficult. Performance on recognizing emotions, linking events and emotions and on some of the cognitive mediation and differentiation tasks was associated with receptive language ability.

Conclusions People with intellectual disabilities and psychosis have some of the skills thought to be required to undertake cognitive behaviour therapy. Recognizing cognitions and cognitive mediation is particularly challenging. The differentiation task introduced in this study may usefully supplement existing assessments.

Keywords: cognitive behavioural therapy, intellectual disabilities, psychosis

References

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Stenfert Kroese et al. 1997

Safran et al. 1993

to participate in therapy, including alliance potential and security operations designed to reduce anxiety, ability to focus on selected problems and the chronicity of the problems. When assessing the suitability of people with intellectual disabilities for CBT, Willner (2005) suggests consideration of cognitive skills, motivation to engage in therapy, support available, self-efficacy and locus of control.

The quality of the therapeutic alliance has been identified as an important factor when considering outcome of therapy (Horvath & Symonds 1991) and a degree of what has been referred to as psychological-mindedness, or the tendency to reflect on the meaning of, and motivation for behaviour is also important (Farber 1985). However, as people with intellectual disabilities are, almost by definition, likely to have difficulties in 'thinking about thoughts' (metacognition), assessing this ability, and in the case of CBT in particular, assessing the ability to recognize cognitive mediation is clearly essential (Willner 2005). In line with this, there is some evidence that verbal ability is associated with outcome of CBT (Willner et al. 2002), although more specific skills are required for cognitive therapy and good verbal ability alone is clearly not sufficient to predict success (Safran et al. 1986; Willner 2005).

Assessing cognitive skills required for CBT

Dagnan & Chadwick (1997) have suggested adopting a similar approach to that used by Safran et al. (1993) when assessing whether people with intellectual disabilities have the cognitive skills to undertake CBT. This approach includes an assessment of whether the person can identify cognitions that are associated with their emotions and behaviours, identify and differentiate emotions and recognize the role of cognition in mediating emotion. This conceptualization is based on the ABC model (Trower et al. 1988), which has been widely applied in CBT in the general population – ‘A’ is the antecedent or activating event, ‘B’ the belief (the interpretation, appraisal or evaluation of the event) and ‘C’ the consequence or resulting emotion or behaviour.

A central tenet of this cognitive–behavioural model is the idea that beliefs are centrally important and changing unhelpful negative thoughts and dysfunctional assumptions can improve affect (Ellis 1977; Beck et al. 1979). In recognition of this importance, cognitive therapists have further distinguished between beliefs that are evaluative (good–bad judgements) and those that are inferential (situation-specific hypotheses) (Dagnan & Chadwick 1997). ‘Full’ CBT includes a focus on challenging and changing dysfunctional cognitive operations and an ability to make links between activating events (A), cognitions/beliefs (B) and consequent emotions (C). These may all be necessary for an individual with intellectual disabilities to participate in CBT.

A necessary part of the cognitive skills described above is the ability to make appropriate links between activating events and emotional responses (the A–C link). Reed & Clements (1989) developed an assessment for evaluating participants’ ability to recognize happy and sad facial expressions and make appropriate links between activating events and emotions (A–C). Their results demonstrated a statistically significant difference in scores on the British Picture Vocabulary Scale (BPVS) (Dunn et al. 1982) between those who passed and failed the assessment, indicating that the ability to make the A–C link is correlated with receptive language ability. These assessment findings provide information on some of the cognitive skills required for CBT but do not include information regarding an individual’s ability to recognize cognitive mediation.

Dagnan & Chadwick (1997) developed an assessment procedure that not only incorporated the Reed & Clements (1989) scenarios but also considered cognitive mediation by adding new elements to the procedure. Participants were presented with a scenario (e.g. ‘you see a group of friends but they do not say hello’) and shown a facial expression (happy or sad). They were then asked what the person depicted by the facial expression may be thinking. Some of the scenarios were incongruent in that the facial emotion depicted did not match the preceding story. Results suggested that participants found tasks where they had to identify a mediating cognition more difficult than tasks involving links between an event and an emotion.

On the cognitive mediation scenarios described above, participants who did less well, only provided an appropriate mediating link (the cognition B) when scenarios could be processed using a heuristic (a rule that is used to process the scenarios without full consideration of their content). For example, when the scenario described above was linked to a sad face the participant could give a ‘correct’ answer using the heuristic ‘being ignored is bad’. In these cases it is not possible to judge whether the participant is processing the entire A–B–C scenario or just using a heuristic applied to the antecedent (Dagnan & Chadwick 1997). These findings suggest that, ‘the best evidence for understanding the cognitive model will be obtained when people are able to link appropriately an antecedent and a heuristically incongruent emotion’ (Dagnan & Chadwick 1997, p. 116).
In an attempt to investigate these processes systematically, more recently Dagnnan et al. (2000) developed two sets of scenarios, with the first presenting an event and cognition where the participant was asked to select an appropriate emotion (AB–C) and the second including an event and emotion with the participant asked to select an appropriate cognition (AC–B). To avoid participants getting the answer right by using a heuristic or just considering the A–C link, five scenarios in each set included incongruent antecedents and beliefs/emotions.

Again, results supported Reed & Clements’ (1989) findings in that the ability to link events and emotions was positively associated with receptive language ability, as was the ability to recognize facial expressions of emotion. Results for the cognitive mediation assessment were more equivocal, with a positive association with verbal ability only found for three of the six subtests (the AB–C total task, the AB–C congruent subset and the AC–B incongruent subset). As discussed above, it is difficult to judge whether those getting congruent questions correct are actually attending to the full A–B–C links, using a heuristic or only attending to the event (A) and emotion (C) and it can be argued it is only the incongruent subsets that fully assess understanding of cognitive mediation (as acknowledged by Dagnan et al. 2000). Participants found all cognitive mediation tasks difficult but the incongruent subtests particularly hard with no more than five of 40 participants passing. Participants performed significantly better on the activating event–emotion task than in the cognitive mediation tasks.

Assessing skills required for ‘simple’ CBT

Dagnan et al. (2000) discuss using their assessment as part of a stepwise approach that will indicate areas in which the potential CBT participant needs structured intervention, designed to help them develop skills needed for cognitive therapy. However, the low pass rate on the cognitive mediation tasks means it is difficult to assess whether unsuccessful participants have any of the skills required for CBT, in addition to the ability to make a link between activating events and emotions.

A simpler approach might be to assess whether an individual can differentiate between activating events, cognitions and emotions and therefore may be able to make use of ‘simple’ CBT such as self-instructional training based on a ‘cognitive deficit’ model (Stenfert Kroese 1997). The present study includes an assessment designed to identify if a participant can differentiate between behaviours, thoughts and feelings adapted from an earlier assessment developed by Greenberger & Padesky (1985) and also used in an adapted form to assess children (Quakley et al. 2003).

Cognitive differences between people with psychosis and the non-psychotic population

There is no published work to date examining cognitive skills in people with mental health problems (who are likely to be the recipients of CBT) including people with psychosis. The literature has consistently suggested people with psychosis develop cognitive deficits including deficits in verbal learning and memory (Fowler et al. 1995). Although such deficits are also characteristic for people with intellectual disabilities it should not be assumed that an assessment used with people who have intellectual disabilities but do not have mental health problems is equally valid for those in this population with psychotic illness.

In the general population, there is evidence that people with psychosis perform poorly on many cognitive tasks with particular difficulties in judgment and social reasoning (Cutting & Murphy 1988). These findings also suggest that evidence regarding performance on cognitive tasks for people who have intellectual disabilities but no mental illness (Reed & Clements 1989; Dagnan et al. 2000) cannot be assumed to apply equally to people with psychosis and their performance must be differentially assessed.

Aims and hypotheses

The main aim of this study was to assess the cognitive skills of people with intellectual disabilities and psychosis thought to be necessary for cognitive behavioural therapy. The study also assessed abilities that may be necessary for ‘simple’ CBT including the ability to differentiate between behaviours, thoughts and feelings and the relationship between cognitive skills and receptive language ability.

The following specific hypotheses were tested:

1. That there is a positive association between receptive language ability and the ability of participants to differentiate emotions.
2. That there is a positive association between receptive language ability and the ability of participants to link events to an appropriate emotion.
3. That there is a positive association between receptive language ability and the ability of participants to recognize cognitive mediation.
That there is a positive association between receptive language ability and the ability of participants to differentiate between behaviours, thoughts and feelings.

That there are significant differences between participants' performances on different cognitive tasks.

**Method**

Participants were enrolled from four different services including one hospital and three community sites. Professionals (psychologists, psychiatrists and specialist nurses) working at each site suggested potential participants using the inclusion and exclusion criteria developed for the study. All community areas were served by specialist intellectual disability services and the local contact also confirmed each participant had a recognized intellectual disability. The hospital did not exclusively support people with intellectual disabilities and files were examined to ensure there was formal assessment evidence that they had an intellectual disability. A single group was recruited from a convenience sample and all participants met the following criteria.

**Inclusion criteria**

- Intellectual disability defined by the British Psychological Society criteria (2000) (IQ < 70, significant impairment of adaptive/social functioning, age of onset before the person is 18 years).
- English as a first language.
- Over 18 years of age.
- A diagnosis of schizophrenia or schizoaffective disorder meeting DSM-IV criteria (American Psychiatric Association 1994) validated by the Mini PAS-ADD (Moss 2002) and a case notes audit using the DSM-IV checklist (Lewis et al. 2002).
- A score on the BPVS (Dunn & Dunn 1997) equivalent to a level of language comprehension of 4 years 5 months (the cut-off for emotional awareness established by Reed & Clements 1989).

**Exclusion criteria**

- A formal diagnosis of autistic spectrum disorder.
- ‘Rare’ syndromes (to reduce the heterogeneity of the sample).
- Significant visual or hearing impairments (due to likely problems in completing the tasks which did not require the ability to read or write).

**Measures**

All measures had been used previously with people with intellectual disabilities with the exception of the questionnaire described below [the Behaviour/Thought/Feeling Questionnaire (BTFQ)] and the DSM-IV Checklist. The BPVS (Dunn & Dunn 1997) was used to assess receptive language ability. The ability to recognize different emotions was assessed using faces taken from the Symbols for Makaton (Walker 1985; Dagnan et al. 2000). Ability to link events and emotions and recognize cognitive mediation were assessed using scenarios devised by previous research studies (Reed & Clements 1989; Dagnan et al. 2000) with ability to recognize behaviours, thoughts and feelings assessed using a novel questionnaire (BTFQ). The Mini PAS-ADD (Moss 2002) and DSM-IV checklist (Lewis et al. 2002) were used to validate diagnosis and establish the presence of psychosis.

**Receptive language ability (the BPVS)**

The BPVS (Dunn & Dunn 1997) is a well-established assessment of receptive language ability using single words. The maximum score is 168 and a score of 48 (a score with an age equivalence for receptive language of 4 years 5 months) was used as an inclusion criterion.

**Emotion recognition**

The ability to recognize emotions was assessed used five faces from the Symbols for Makaton (Walker 1985) – happy, sad, angry, frightened and worried. The same emotions depicted by facial expression were used by Dagnan et al. (2000) and Harter (2003).

**Linking events and emotions (A–C)**

Ability to recognize links between events and emotions (the A–C link) was assessed using six simple scenarios developed by Reed & Clements (1989) and used in a number of other studies including Dagnan et al. (2000). Minor word changes were made to make the scenarios suitable for a non-day centre sample. Participants were asked to identify whether in a particular situation they would feel happy or sad (e.g. ‘You get out of bed. It’s your birthday. You go downstairs. There are a pile of birthday cards lying on the mat.’). A ‘pass’ level for the scenarios was set at 6/6 (the same level used by Dagnan et al. (2000) and Reed & Clements (1989), a score that has a chance probability of <0.05 (White et al. 1974).
Cognitive mediation (B–C)

The ability to recognize cognitive mediation was assessed using the same scenarios developed by Dagnan et al. (2000), all involving an activating event, evaluative belief and emotion. In 10 scenarios the participant was given the event and belief and was required to pick an emotion, happy or sad (‘If A and B, choose C’). An example was ‘You are given a job to do and you finish it quicker than everyone else (A) and you think I’m better than everyone else (B). Do you feel happy or sad? (C)’. In 10 scenarios, the participant was asked to choose an evaluative belief given an event and emotion (‘If A and C, choose B’). An example was ‘You are in a race and you win the race (A) and you feel happy (C). Would you be thinking I’m worse than everyone else or I’m better than everyone?’ (B). Ten scenarios across the two sets were positively valenced (e.g. ‘you’re in a race, you win the race’), 10 were negatively valenced (e.g. ‘you walk into a room and your friends start laughing’).

In each set, five scenarios were ‘congruent’ [activating event (A) and belief (B), or activating event (A) and emotion (C) were both positive or both negative] and five were incongruent [activating event (A) negative, belief (B) positive or vice-versa and activating event (A) positive, emotion (C) negative or vice versa]. An example of a congruent scenario was ‘You break your friend’s record player (A) and you think I’m a bad person (B). Do you feel happy or sad? (C)’. An example of an incongruent scenario was ‘Your friend shouts at you (A) and you feel happy (C). Would you be thinking I’m a bad person or I’m a good person? (B)’. The ‘pass’ level for each set was set at 8/10, a success rate that would occur by chance close to the maximum are guessing, or cannot demonstrate the ability to differentiate behaviours, thought and feelings consistently. Scores were calculated that had a probability of $P < 0.05$ of being due to chance and these were adopted as pass scores with data from the differentiation task analysed as categorical variables. Using the STATA Corporation (2003) statistics software, pass tests of the differentiation task it is likely that, even with three possible answers, participants who do not score close to the maximum are guessing, or cannot demonstrate the ability to differentiate behaviours, thought and feelings consistently. Scores were calculated that had a probability of $P < 0.05$ of being due to chance and these were adopted as pass scores with data from the differentiation task analysed as categorical variables. Using the STATA Corporation (2003) statistics software, pass scores on the subtests were calculated as 6 of 8 for the Behaviour and Feeling subtests and 5 of 7 for the Thought subtest.

Preliminary test–retest reliability was conducted by repeating the questionnaire with four of the last participants one week after initial administration. The percentage agreement between participants’ correct or incorrect responses was calculated and exceeded 80% agreement (83.3%).

Procedure

All measures were administered by the first author at participants’ homes, or in a quiet room or office. In all cases the BPVS was administered first as it formed part of the inclusion criteria, followed by the Faces for Makaton (Walker 1985), Reed & Clements (1989) scenarios, cognitive mediation scenarios (Dagnan et al. 2000) and the BTFQ. The Mini PAS-ADD (Moss 2002) was completed
with the participant or a member of staff who knew them well and the DSM-IV checklist (Lewis et al. 2002) was used to audit case notes after assessments were completed.

Assessment of ability to recognize emotions followed the same procedure as that of Dagnan et al. (2000), with participants asked to point at the Makaton face that represented a stated emotion (happy, sad, angry, worried and frightened) in the order in which emotions were requested being randomized across participants. For the activating event-emotion scenarios (Reed & Clements 1989) a happy and a sad face were placed in front of the participant. These were the same faces used in the previous assessment taken from the Symbols for Makaton and participants were asked to point to the appropriate face, or give a verbal response. Instructions on how to complete the task were given using a script designed to ensure consistency across participants.

The cognitive mediation scenarios (Dagnan et al. 2000) were arranged in four sets; (1) ‘If activating event (A) and belief (B), choose emotion (C)’ – B positive, (2) ‘If A and B choose C’ – B negative, (3) ‘If A and C, choose B’ – C positive, (4) ‘If A and C, choose B’ – C negative. The order in which the four sets were presented to participants was randomized to reduce order effects. The order the question was presented was counterbalanced (e.g. ‘Do you happy or sad?’ followed by ‘Do you feel sad or happy?’).

The BTFQ was administered using instructions appended to the questionnaire. Participants were given examples of a behaviour, thought and feeling, asked to identify it and given feedback if they were incorrect. The list of behaviours, thoughts and feelings were given in the same order with instructions designed to ensure consistency across participants.

Ethical approval for the study was obtained from the London Multi-centre Research Ethics Committee (MREC) and an information sheet and consent form approved by the MREC was used with participants having at least twenty-four hours following the initial meeting to decide if they wished to take part.

Statistical testing

Statistical analysis was conducted using SPSS Inc. (2003, version 12.0.1). All dependent and independent variables used to test hypotheses were assessed for normality using Kolmogorov–Smirnov tests. Where variables did not meet criteria for parametric analysis a transformation was attempted, but none were successful, therefore non-parametric tests were used.

Results from the BPVS (Dunn & Dunn 1997) were compared with the emotion recognition task using the Symbols for Makaton (Walker 1985), activating event-emotion task (Reed & Clements 1989), cognitive mediation task (Dagnan et al. 2000) and BTFQ to test predictions that the BPVS score would be positively associated with scores on the A–B–C assessments.

Power

Power analysis based on data from Dagnan et al. (2000) indicated $n = 50$ would have 80% power to detect correlations of 0.375 as significant at the 0.05 level between scores on the BPVS and number of emotions recognized. $n = 50$ assuming a pass/fail ratio on the activating event-emotion task of 3:1 would have 80% power to detect differences of 25+ in BPVS score (assuming a standard deviation of 26) between the pass/fail group.

Results

Fifty participants were enrolled. Thirty-five met the DSM-IV criteria for schizophrenia, 11 for schizoaffective disorder and four had clear evidence of psychotic symptoms (predominantly auditory hallucinations) but did not meet full diagnostic criteria for schizophrenia or schizoaffective disorder. All analyses to test hypotheses were performed twice, once with 50 participants and once with the four who did not meet diagnostic criteria for schizophrenia or schizoaffective disorder removed to ensure any diagnostic specific findings could be examined. Two participants did not complete the BTFQ. Seventy-four per cent of the participants lived in community settings, <5% (four) were Black and 54% were men. The mean age of the whole sample was 43 years (male = 43.15 years, SD 11.31; female = 43.09 years, SD 2.03).

Emotion recognition

On the emotion recognition task using the Symbols for Makaton faces (Walker 1985) almost all the participants (96%) recognized the happy face. The majority recognized ‘happy’ and ‘sad’ (58%). The most difficult expression to recognize was ‘worried’ recognized by approximately one-third (36%) of participants. The average number of faces recognized was 2.89 (SD 1.17).

Scores on the BPVS were correlated with the number of faces recognized to test Hypothesis 1. Scores on the BPVS (median = 88, semi-interquartile range = 63–99.75) and emotion recognition task (median = 3, semi-interquartile range = 2–3) were significantly positively
correlated indicating those participants with higher BPVS scores recognized more emotions than those with lower BPVS scores (Spearman’s rho = 0.389, P < 0.01, one-tailed test) and supporting Hypothesis 1.

Linking activating events and emotions (A–C)
The activating event-emotion task (Reed & Clements 1989) was passed by 36 participants (72%), and 14 participants (28%) failed. The mean number of participants who answered ‘sad’ when the correct answer was ‘happy’ (4) and those who answered ‘happy’ when the correct answer was ‘sad’ (3.67) is similar indicating they did not find either weighting more difficult than the other.

Hypothesis 2 was tested by comparing pass group BPVS scores with scores on the BPVS for the fail group. The difference in BPVS scores between the pass group (36 participants, BPVS median = 91.5, semi-interquartile range = 81.75–104.75) and fail group (14 participants, BPVS median = 60.5, semi-interquartile range = 56–85) on the activating event-emotion task was examined using a Mann–Whitney U-test, which indicated a highly significant difference [Z = 3.912, P < 0.01 (one-tailed test)]. This result suggests that there was an association between high scores on the BPVS and a pass on the activating event-emotion task, i.e. a higher level of receptive language ability was associated with being better at making links between an activating event (A) and an emotional response (C).

Recognizing cognitive mediation (A–B–C)
Hypothesis 3 was tested by comparing BPVS scores for pass groups on cognitive mediation tasks with scores on the BPVS for the group who failed each task. Table 1, shows the number of participants who passed and failed the cognitive mediation tasks (‘If A and B, choose C’, the ‘If A and C, choose B’) and the congruent and incongruent subsets. Moreover, the BPVS scores for each group and the results of Mann–Whitney U-tests comparing scores for pass/fail groups are shown.

When the Mann–Whitney U-tests were performed without the four participants who did not meet full diagnostic criteria, the same results were obtained with the exception of the result for the ‘If A and C, choose B’ task where the difference for pass/fail groups was not significant.

The results shown in Table 1 suggest that better receptive language ability was associated with the ability to recognize cognitive mediation in that pass groups had higher BPVS scores on two of the six cognitive mediation tasks. However, there was no association between verbal ability and the mediation tasks that required the participant to supply an emotion (C) and there was no association between verbal ability and the mediation tasks that required the participant to provide a cognition (B) when the activating event (A) and the emotion (C) provided by the researcher were incongruent.

Differentiating behaviours, thoughts and feelings
Hypothesis 4 was tested by comparing BPVS scores for pass groups on each differentiation task with scores on the BPVS for the group who failed each task. Table 2, shows the number of participants who passed and failed the differentiation tasks (Behaviour, Thought, Feeling subtests). Moreover, the BPVS scores for each group and the results of Mann–Whitney U-tests comparing scores for pass/fail groups are shown.

Table 1 British Picture Vocabulary Scale median and semi-interquartile range, 25th to 75th centiles (SIR) for pass/fail groups on the cognitive mediation (A–B–C) tasks (numbers in each group are shown plus the results of Mann–Whitney U-tests)

<table>
<thead>
<tr>
<th>Cognitive mediation task</th>
<th>Pass (%)</th>
<th>Fail (%)</th>
<th>Pass</th>
<th>Fail</th>
<th>Mann–Whitney U-Test (one-tailed tests)</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘A and B, choose C’</td>
<td>6 (12)</td>
<td>44 (88)</td>
<td>76.50 (57–98.25)</td>
<td>88 (65–102)</td>
<td>Z = −0.791, P = 0.211</td>
</tr>
<tr>
<td>ABC congruent subset</td>
<td>15 (30)</td>
<td>35 (70)</td>
<td>97 (63–108)</td>
<td>85 (63–94)</td>
<td>Z = 1.387, P = 0.084</td>
</tr>
<tr>
<td>ABC incongruent subset</td>
<td>1 (2)</td>
<td>49 (98)</td>
<td>89</td>
<td>87 (63–100.50)</td>
<td>Z = 0.104, P = 0.500</td>
</tr>
<tr>
<td>‘If A and C, choose B’</td>
<td>5 (10)</td>
<td>45 (90)</td>
<td>97 (86.50–116.50)</td>
<td>85 (62.50–98.50)</td>
<td>*Z = 1.682, P = 0.047</td>
</tr>
<tr>
<td>ACB congruent subset</td>
<td>7 (14)</td>
<td>43 (86)</td>
<td>97 (92–107)</td>
<td>85 (62–98)</td>
<td>*Z = 1.902, P = 0.028</td>
</tr>
<tr>
<td>ACB incongruent subset</td>
<td>2 (4)</td>
<td>48 (96)</td>
<td>79 (59–99)</td>
<td>88 (63.25–101)</td>
<td>Z = −0.248, P = 0.411</td>
</tr>
</tbody>
</table>

*Significant at the P < 0.05 level (one-tailed test).

Results shown in Table 2 indicated a highly significant difference in BPVS scores between pass/fail groups on the Behaviour and Feeling subtests. The higher BPVS scores for the pass groups on these tests suggested an association between receptive language ability and the ability to differentiate behaviours and feelings, with those participants who scored higher on the BPVS more likely to pass these tasks. The difference in BPVS scores between pass/fail groups on the Thought subtest was not significant.

Comparing participants’ performance on different cognitive tasks

We tested Hypothesis 5 by comparing participants’ performances on different cognitive tasks. Analyses using Sign tests were carried out to compare participants’ performance on the cognitive mediation tasks and the activating event-emotion task (A–C). There were highly significant differences ($P < 0.001$) in participants’ performance on all cognitive mediation tasks and the activating event-emotion task with participants performing significantly better on the activating-event emotion task.

These results suggest that participants found recognizing how cognitions mediate emotions more difficult than making a link between an activating event and an appropriate emotion.

Analyses using Sign tests were carried out to compare participants’ performance on the BTFQ and the activating event-emotion task (A–C). There was a highly significant difference between participants’ performance on the Thought subtest and the activating event emotion task ($P < 0.001$) indicating that they found identifying thoughts harder than linking events with an appropriate emotion. There was a significant difference ($P < 0.05$) between participants’ performance on the Feeling subtest and the activating event-emotion task indicating that they found identifying feelings harder.

Sign tests were used to compare participants’ performance on the BTFQ subtests and the cognitive mediation tasks. There was a highly significant difference ($P < 0.001$) between performance on the Behaviour subtest and all cognitive mediation tasks indicating participants found all cognitive mediation tasks harder than identifying behaviours. The differences between participants’ performance on the Thought subtest and cognitive mediation tasks were not significant with the exception of the ‘If A and B, choose C’ incongruent subtest that was significant ($P < 0.05$), indicating that participants found the incongruent subtest harder. The differences between participants’ performance on the Feeling subtest and cognitive mediation subtests were highly significant ($P < 0.05$) with the exception of the comparison between the Feeling subtest and the ‘If A and B, choose C’ congruent subtest that was not significant.

Comparisons of subtests ‘within’ tasks

Analyses using Sign tests found a highly significant difference between participants’ performance on the congruent and incongruent subtests of the ‘If A and B, choose C’ cognitive mediation task ($P < 0.01$) indicating that they found the incongruent subtest harder. Differences between participants’ performance on the total cognitive mediation tasks and congruent and incongruent subtests of the ‘If A and C, choose B’ cognitive task were not significant.

Analyses using Sign tests found a highly significant difference in participants’ ability to recognize thoughts ($P < 0.001$) when compared with their ability to recognize feelings and behaviours indicating that they found recognizing thoughts harder. The difference between participants’ ability to recognize feelings and behaviours was not significant.

Discussion

The mean number of emotions recognized (2.89) and proportion of participants who passed the activating...
event-emotion (72%) were similar to the results found by Dagman et al. (2000) (2.7) whose sample included 40 people with intellectual disabilities who were not known to have a mental health problem. These results suggest that people with intellectual disabilities and psychosis may be as successful at differentiating emotions as those who do not experience mental health problems and the large majority can link events and emotions; an ability that is positively associated with receptive language ability.

The percentages passing the cognitive mediation tasks was similar to those found by Dagman et al. (2000), although for the second set of tasks ('If A and C, choose B') the pass rate in this study was even lower. These results suggest that both groups found cognitive mediation tasks difficult, particularly when they are incongruent.

Results on incongruent scenarios are of particular interest as it could be suggested (as discussed in the 'Background' and acknowledged by Dagman et al. 2000) that it is only the incongruent subtests that assess recognition of cognitive mediation, as the congruent subsets can be processed correctly by attending only to the A–C link, or using a heuristic.

If this conclusion is drawn, it could be argued that there is little evidence from this study that receptive language ability was associated with ability, to recognize cognitive mediation. However Dagman et al. (2000) did find a significant difference in BPVS score on the incongruent subtest ('If A and C, choose B'), where five participants passed. This was the only test group in either study where more than two participants passed incongruent subtests and this floor effect implies that, in most cases, statistically significant differences could not be assessed.

More sustainable conclusions may be that people with intellectual disabilities find recognition of the role of cognitive mediation very difficult, or that the assessment itself has questionable validity. Harter (2003) used the cognitive mediation tasks with older adults with and without dementia and also included a control sample of young adults. Results suggested that the control sample of young adults performed better on the cognitive mediation tasks than older adults, people with dementia and the Dagman et al. (2000) sample, but still did poorly on incongruent subtests with 14% passing the ‘If A and B, choose C’ and 20% the ‘If A and C, choose B’ subtest. Although the ability to recognize how cognition mediates affect is known to be difficult for people who do not have intellectual disabilities, and it should not be assumed (Safran et al. 1993), these pass scores still appear lower than might be predicted.

The finding that there were significant differences even between the activating event-emotion task and the congruent subtests, suggests that participants were attending to the fact that the scenario includes a thought and attending to that thought. This point is made by Dagman et al. (2000) and Costello (1992) and may be as a challenge to the conclusion above that congruent subtests do not examine individual’s ability to recognize cognitive mediation. However, as the interceding cognition in the congruent subtests does not alter the direction set by the activating event (changing it from positive to negative, or negative to positive), it is still not possible to establish that the participant recognizes how the thought mediates the emotion.

The finding that participants did less well on congruent subtests than on the activating event-emotion task may be explained by their recognition that a thought/belief was present and this recognition obfuscating their understanding of the links between A (the situation) and C (the emotion). A scenario containing three component parts (A–B–C) is likely to impose more information processing demands than one that only includes two (A–C). This may result in attention to the cognitive component, but in a way that does not help the participant understand the role of the thought (B) and makes processing the link between A and C more difficult.

The novel assessment, the BTFQ, explicitly addressed this implied limitation of existing assessments, in that so few people pass the incongruent subtests of the cognitive mediation tasks that their ability to differentiate between thoughts and emotions cannot be clearly established. If participants are successful at differentiating between behaviours, thoughts and emotions, this would suggest they have the skills necessary to undertake ‘simple’ CBT and may have the underpinning skills required to learn how to recognize the mediating effects of cognition on affect.

Thirty-two participants passed (66.67%) the Behaviour subtest. Nine participants (18.75%) passed the Thought subtest and 25 participants (52.1%) the Feeling subtest. These results suggested that participants were generally successful at recognizing behaviours, half were successful at recognizing feelings and most found recognizing thoughts difficult. There was a significant difference in BPVS score between pass/fail groups on the Behaviour and Feeling subtests, indicating that performance was linked with receptive language ability. The difference in BPVS score between pass/fail groups on the Thought subtest was not significant.

Comparisons between participants’ performance on the differentiation tasks, activating event-emotion and
cognitive mediation tasks indicated that identifying behaviours was not more difficult than linking events and emotions but identifying thoughts and feelings was. The cognitive mediation tasks were harder than identifying behaviours and feelings but not thoughts, with the exception of the incongruent subtest of one cognitive mediation task, which was even harder. These results suggest that any task involving cognitions is harder than one that does not, but cognitive mediation tasks are not harder than recognizing thoughts, except when the thought and emotion are incongruent.

Limitations of the study/future research

Limitations include the fact that the faces used have limited ecological validity. It is also unclear as to whether participants who correctly identified emotions displayed can identify the same emotions in 'real life' when displayed on real faces. The same criticisms can be made of the other measures used to assess skills required for cognitive therapy (the activating event-emotion task, Reed & Clements 1989) and cognitive mediation tasks (Dagnan et al. 2000). Reed & Clements (1989) have suggested that behaviourally observation would increase the validity of the activating event-emotion task, if it could be shown that successful participants displayed appropriate emotional response to environmental stimuli.

It is also unknown how well all the assessments used predict engagement in therapy, or outcome. There is some evidence that adherence to and understanding of the cognitive behavioural model is associated with positive outcome in the general population (Safran et al. 1993) but there are no studies assessing this relationship in people with intellectual disabilities. Future studies could include administering these assessments before participants undertake CBT, which may establish how effective they are as outcome predictors and assist clinicians when considering the suitability of cognitive therapy for individuals referred.

If cognitive skills assessments are to be used to indicate when an individual requires training to learn how to recognize cognitive mediation it is necessary to establish that such skills can be taught. There is no direct evidence that this can be done with people with intellectual disabilities and this could be a focus for future research.

Conclusions/clinical implications

Findings from this study indicate that people with intellectual disabilities and psychosis were generally as successful, or unsuccessful, as those with intellectual disabilities who do not have mental health problems, in demonstrating skills thought to be useful for cognitive behavioural therapy. Together with a very small evidence base indicating the successful use of CBT with this population (Leggett et al. 1997; Haddock et al. 2004) this suggests that clinicians should consider the use of CBT treatment when faced with the often complex psychological and social problems experienced by people with intellectual disabilities and psychosis.

The differentiation task (BTFQ) – clinical implications

Success on the Feeling and Thought subtests of the differentiation task may indicate that an individual has the skills required for self-instructional approaches and self-monitoring, even if they do not pass cognitive mediation tasks, indicating the use of 'full' CBT. Use of these assessments together may allow clinicians to more accurately assess the type of cognitive behavioural therapy a person could access (or pre-therapy intervention required) and reduce the risk of starting therapy that fails because the individual does not have the necessary cognitive skills.

An ability to differentiate and make links between behaviours or events, thoughts and feelings is not just specific to cognitive behavioural therapy. Any therapy using a collaborative approach needs to consider the referred client’s ability to understand how their own and other peoples’ actions affect how they and others think and feel. This is a particularly relevant concern for clinicians attempting psychological work with people with intellectual disabilities and the assessments used in this study, including the novel questionnaire, may assist clinicians working from a variety of therapeutic orientations.

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References


Appendix


I am now going to read a list of words and I’d like you to tell me if the word is something you do, something you think or something you feel.

Examples: Going shopping, Excited, I’ve got a lot to do.

Give feedback if incorrect.

OK, That’s great. Now lets try some more. Remember I want you to tell me if the word is something you do, something you think or something you feel.

*Repeat these instructions as often as you think is necessary, or as often as is requested by the participant, but retain the same wording*

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1)</td>
<td>Sad</td>
<td>F</td>
</tr>
<tr>
<td>2)</td>
<td>Talking to a friend</td>
<td>B</td>
</tr>
<tr>
<td>3)</td>
<td>Angry</td>
<td>F</td>
</tr>
<tr>
<td>4)</td>
<td>Working</td>
<td>B</td>
</tr>
<tr>
<td>5)</td>
<td>This is hard</td>
<td>T</td>
</tr>
<tr>
<td>6)</td>
<td>Answering the phone</td>
<td>B</td>
</tr>
<tr>
<td>7)</td>
<td>Happy</td>
<td>F</td>
</tr>
<tr>
<td>8)</td>
<td>I’m missing my friend</td>
<td>T</td>
</tr>
<tr>
<td>9)</td>
<td>Making a cup of tea</td>
<td>B</td>
</tr>
<tr>
<td>10)</td>
<td>I’m good at things</td>
<td>T</td>
</tr>
<tr>
<td>11)</td>
<td>Worried</td>
<td>F</td>
</tr>
<tr>
<td>12)</td>
<td>I don’t know what to do for the best...</td>
<td>T</td>
</tr>
<tr>
<td>13)</td>
<td>Gardening</td>
<td>B</td>
</tr>
<tr>
<td>14)</td>
<td>I hope this works out</td>
<td>T</td>
</tr>
<tr>
<td>15)</td>
<td>Having a bath</td>
<td>B</td>
</tr>
<tr>
<td>16)</td>
<td>Frightened</td>
<td>F</td>
</tr>
<tr>
<td>17)</td>
<td>I’ve achieved something</td>
<td>T</td>
</tr>
<tr>
<td>18)</td>
<td>Frustrated</td>
<td>F</td>
</tr>
<tr>
<td>19)</td>
<td>Washing up</td>
<td>B</td>
</tr>
<tr>
<td>20)</td>
<td>I’m a good person</td>
<td>T</td>
</tr>
<tr>
<td>21)</td>
<td>Playing darts</td>
<td>B</td>
</tr>
<tr>
<td>22)</td>
<td>Upset</td>
<td>F</td>
</tr>
<tr>
<td>23)</td>
<td>I’m looking forward to my holiday</td>
<td>T</td>
</tr>
<tr>
<td>24)</td>
<td>Miserable</td>
<td>F</td>
</tr>
</tbody>
</table>

Behaviour = 8/8 (pass = 6).

Feeling = 8/8 (pass = 6).

Thought = 7/7 (pass = 5).

*Question 8 is retained here but was not included in the analysis, or should be counted in the score for the Thought subtest.*