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**TALKING ABOUT REAL LIFE EVENTS: AN INVESTIGATION OF  
THE ABILITY OF PEOPLE WITH INTELLECTUAL  
DISABILITIES TO MAKE LINKS BETWEEN THEIR BELIEFS  
AND EMOTIONS WITHIN DIALOGUE.**

Major Research Project & Clinical Research Portfolio

Volume One

(Volume Two bound separately)

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Submitted in partial fulfilment of the requirements for the degree of  
Doctorate in Clinical Psychology

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## SYSTEMATIC LITERATURE REVIEW

Title: Emotional understanding and establishing the link between emotions and the interpretation of events: the evidence concerning the ability of people with intellectual disabilities to carry out key cognitive therapy tasks

Running Title: Evidence concerning key cognitive therapy tasks

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## **Abstract**

### **Background**

A key focus of the current research on cognitive therapy with people with intellectual disabilities has been to determine who will benefit from therapy and how this can be assessed. The review examines the evidence concerning the abilities of people with intellectual disabilities to understand emotions and carry out key cognitive therapy tasks.

### **Method**

An electronic search of four databases, together with hand searches of key journals and reference lists identified thirteen papers for review. Studies were reviewed using a structured quality rating scale.

### **Results**

The ability to understand emotions depended on the tasks administered and the types of emotions assessed. Performance improved when more realistic stimuli were used.

Making links between events, beliefs and emotions was particularly difficult for this population. Several methodological weaknesses of the existing research were highlighted.

### **Conclusions**

Evidence concerning the ability of people with intellectual disabilities to understand emotions and carry out key cognitive therapy tasks is still limited. There is a need for future research to use stimuli, which incorporates a range of contextual and dynamic cues. In clinical practice, a more sophisticated approach to assessment of these skills should be taken.

## **Introduction**

Traditionally, people with intellectual disabilities have been excluded from many types of psychological therapy, as it has been assumed that they do not have the skills to participate. However, recent policies have stated that people with intellectual disabilities should have the same access to healthcare, including psychological therapies, as the general population (Department of Health, 2001, Scottish Executive, 2000). Despite these policy initiatives, reviews of recent research with people with intellectual disabilities have concluded that outcome data for psychological therapies in this population are limited (e.g. Hatton, 2000, Willner, 2005).

One area on which recent research has focussed is cognitive therapy. Cognitive therapy is a widely used psychological therapy which has been shown to be effective for a number of mental health problems in the general population (Roth & Fonagy, 1996). It is based on the assumption that emotions and behaviour are not directly influenced by situations or events, but are influenced by the individual's interpretation of events, in other words, their beliefs associated with an event. Consequently, maladaptive emotional and behavioural responses to an event are a result of distorted beliefs about the self, others and the world. In order to participate in cognitive therapy, it is proposed that the individual must be able to i) talk about an event (A), an associated belief (B) and an associated emotion (C) and ii) recognise the link between the emotion and the belief (Dagnan & Chadwick, 1997). For example, feeling frightened at night because you hear a loud noise in the house would represent a link between an event and an emotion (AC

link). Interpreting that noise as somebody breaking into your house and feeling frightened as a result of this thought, is an example of a link between an event, a belief and an emotion (ABC link). In a recent special issue of the *Journal of Applied Research in Intellectual Disabilities*, several of the papers explored whether people with intellectual disabilities have the skills necessary to take part in cognitive therapy (Joyce et al., 2006, Oathamshaw & Haddock, 2006, Sams et al., 2006). A key focus of the current research on cognitive therapy for people with intellectual disabilities has therefore been to determine who will benefit from therapy and how this can be assessed.

A crucial component of cognitive therapy is the person's ability to recognise and reflect on their own emotional experience and that of others. Reed and Clements (1989) argued that in order to be able to report on their emotional experience, individuals must be able to recognise and understand different emotions. In their study, which assessed the emotional understanding of adolescents and young people with intellectual disabilities, they found that performance on an emotional understanding task was highly correlated with language comprehension. Subsequently, there has been a substantial body of research examining emotion recognition in this population (McAlpine et al., 1991, Simon et al., 1995, Simon et al., 1996). However, although Reed and Clements' (1989) work is used within clinical practice, as a method of assessing an individual's ability to understand emotions and link them with events, the subsequent research on emotion recognition has been largely separate from the therapeutic literature. Indeed, research on emotional understanding has so far focussed on the cognitive processing aspects of emotion recognition.

A major debate within this literature has centred on whether people with intellectual disabilities have a specific deficit in processing emotion-related stimuli or whether difficulties on emotion recognition tasks can be attributed to general cognitive impairments. Rojahn et al. (1995a) proposed that existing evidence showed support for specific deficits in emotional understanding. However, a later review by Moore (2001), which provided a thorough analysis of evidence in this area, argued that poor performance by people with intellectual disabilities in research on emotional understanding can often be accounted for by the difficulties people have with task demands, rather than specific impairments in emotion perception. Moore proposed a number of recommendations for future research in this area. These included the use of more robust designs with mental and chronological age matched control groups, to determine whether individuals with intellectual disability and typically developing individuals are equally able to deal with task demands. In addition, it was recommended that a variety of control tasks are employed to account for the additional information processing demands of an experimental test. Moore also emphasised the importance of using ecologically valid stimuli, so that tasks reflect the demands of everyday events and behaviour as closely as possible.

Indeed, it can be argued that the experimental tasks used in previous research have been a simplistic representation of how people understand emotions in themselves and others. The symbolised or abstract depictions of emotions, which are frequently presented to participants, do not contain contextual information or cues and therefore may not relate to an individual's intuitive understanding of emotions within an everyday context.

Furthermore, although symbols are often designed to make tasks more accessible, the evidence suggests that people with intellectual disabilities need to be familiar in their use and meaning before they can facilitate understanding (Poncelas & Murphy, 2007).

Symbolised task or therapy stimuli will therefore not necessarily assist the comprehension of concepts, unless a shared understanding of the symbols has been established between the individual and the therapist or researcher.

The current review will take account of these methodological issues, which have been raised by previous papers and reviews, and will consider the recent research evidence on the ability of people with intellectual disabilities to carry out key cognitive therapy tasks. This relates to the recent focus of the literature on who may benefit from cognitive therapy and in what ways this can be assessed. The review will consider the evidence on specific cognitive therapy skills, such as differentiating and making links between events, beliefs and emotions. It will also include evidence on general emotional understanding abilities, much of which has not been considered in terms of therapeutic competence. Although a more recent review on emotion recognition has been conducted by Zaja and Rojahn (2008), they did not report any systematic assessment of the quality of research included, and therefore relevant studies included in their paper will also be reviewed here.

## **Review Questions**

In relation to attempts to determine the skills necessary for cognitive therapy and who may benefit from this therapy, the current review will consider:

- 1) What is the evidence concerning the ability of people with intellectual disabilities to recognise and understand emotions?
- 2) What is the evidence concerning the ability of people with intellectual disabilities to carry out specific cognitive therapy tasks, including:
  - i) Differentiating between beliefs, emotions and behaviours?
  - ii) Making links between events and emotions?
  - iii) Making links between events, beliefs and emotions?

## **Methods**

### **Search Strategy**

A search for papers was carried out on the following electronic databases: Medline, PsychInfo, EMBASE and EBM reviews (ACP Journal Club, Cochrane Register of Controlled Trials, Cochrane Methodology Register, Database of Abstracts of Reviews of Effects). To identify papers on emotional understanding in people with intellectual disabilities (Review Question 1) the following search terms were used: 'Intellectual Disability', 'Mental Retardation', 'Mental Deficiency', 'Developmental Disability' and 'Learning Disability'. These search terms were combined with 'Emotion' and

‘Recognition’, ‘Perception’, ‘Understanding’ and ‘Comprehension’. To search for papers on specific cognitive therapy skills (Review Question 2), the search terms for intellectual disability were combined with ‘Cognitive Therapy’, ‘Cognitive Behaviour Therapy’ and ‘Skill’ and ‘Ability’. The search terms used were standard Medical Subheadings (MeSH). Searches were carried out for papers published up until April 2009.

A hand search of the following key journals was also completed: Journal of Applied Research in Intellectual Disabilities, American Journal of Mental Retardation, Journal of Intellectual Disability Research and Cognitive Therapy and Research. In addition, the reference lists of previous literature reviews and key articles were searched for additional papers.

### **Criteria for Inclusion and Exclusion**

Studies meeting the following criteria were included in the review: i) studies of individuals with an intellectual disability, ii) studies examining emotional understanding or studies examining the skills necessary for cognitive therapy, iii) studies with an adult population (studies which included broader age ranges were considered only if age was accounted for in the analysis and if participants were twelve years or older), iv) studies published in the English language and v) studies published since 2000.



Studies were excluded on the basis of the following criteria: i) studies on a non-intellectually disabled population, ii) studies with a child population (studies with a mixed adult and child population were not considered if age was not accounted for in the analysis, or if any participants were younger than twelve years), iv) studies on individuals with autism spectrum disorders, as social cognitive deficits associated with these disorders are likely to affect the emotional understanding abilities of these individuals, v) discussion papers, expert opinions and unpublished dissertations, vi) case studies, vii) studies published in languages other than English and viii) studies published prior to 2000.

The titles and abstracts of papers were read to identify which studies were eligible for inclusion. In cases where it was not possible to identify inclusion or exclusion criteria from the title or abstract, the full text was obtained.

## **Search Results**

Using the above search strategy for papers on emotional understanding, 218 papers were initially identified. Once duplicates and papers not meeting the inclusion criteria had been removed, twelve papers remained. Three of these papers were excluded as they did not meet the quality criteria. One of the papers used tasks which assessed the ability to make links between events and emotions and this study was reviewed with the papers on specific cognitive therapy skills. Eight papers on emotional understanding were therefore identified for inclusion in the review.

The search for papers on specific cognitive therapy skills identified 25 research articles, four of which were relevant to the review question. These papers also reported data on emotion recognition skills in this population and were therefore reviewed for both their evidence on emotional understanding, and their evidence on specific cognitive therapy skills.

A total of thirteen papers were included in the current systematic review. Flowcharts of the search strategy and results and reasons for exclusion of papers are detailed in Figures 1 and 2 and Tables 1 and 2.

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INSERT FIGURES 1 & 2 AND TABLES 1 & 2 ABOUT HERE

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### **Methodological Quality**

The quality of papers was assessed using a rating scale devised specifically for this review. As the studies reviewed were not outcome research, the use of established criteria, such as the CONSORT guidelines (Altman et al., 2001), was inappropriate. However, in designing the current quality rating scale, appropriate general methodological criteria were drawn from established guidelines, including the SIGN guidelines (SIGN, 2008). In addition, criteria relating specifically to research on emotion recognition and cognitive therapy skills were developed. These criteria were

established by taking account of recommendations from previous research and reviews (Moore, 2001, Zaja & Rojahn, 2008). In particular, the use of a robust design with mental and chronological age matched control groups and appropriate control tasks was emphasised. Previous research also highlighted the importance of using realistic task stimuli.

The quality rating scale consisted of seven key areas, as shown in Table 3.

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INSERT TABLE 3 ABOUT HERE

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For each key area except Design, a study was awarded a score of 0, 1, 2 or 3, with higher scores reflecting greater quality. Possible scores of 0, 1, 2, 3, 4, 5, 6 or 7 were awarded for the area of Design. This higher range of scores reflected the particular importance of design in this area of research. In addition the Design category covers both the inclusion of control groups and control tasks and the greater range of scores allows for acknowledgement of both these important factors.

Studies were then categorised as Excellent, Good, Adequate or Poor, based on both a numerical score and the achievement of certain specific criteria. This system was chosen in order that the higher quality papers were accurately identified. A system based solely on specific criteria would have failed to acknowledge the range of strengths

in the papers. However, a purely numerical score would have given less sense of which criteria were more important in determining the quality of a paper. The chosen approach therefore acknowledges both the key aspects of study design and experimental tasks, which are important for literature in this area, as well as the overall methodological strengths of the research. A full description of the requirements for each category is included in Table 4.

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INSERT TABLE 4 ABOUT HERE

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In order to be included in the review, studies had to be rated as Adequate or above. This rating required papers to score a minimum of one point on all categories, with the exception of Link to Therapy, on which they could receive no score. As many of the emotion recognition papers were not written with a therapeutic purpose in mind, it would have been mistaken to exclude them on this basis of this category. Papers were reviewed independently by the author of this paper and another Trainee Clinical Psychologist to ensure reliability of the quality ratings. An inter-rater reliability analysis using the Kappa statistic was found to be = 0.95. Disagreements were resolved through discussion. Tables 5 and 6 show the ratings for each of the reviewed papers and a summary of each study.

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INSERT TABLES 5 & 6 ABOUT HERE

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## **Results**

The evidence concerning emotional understanding and specific cognitive therapy tasks will be presented separately. The section on emotional understanding will begin by considering the types of tasks and stimuli which were administered. The following will then be reviewed: i) the types of emotion recognised and ii) the links between emotional understanding and level of ability. The majority of studies were not carried out with the direct aim of relating findings to therapy participation, therefore this review will draw out the implications of the evidence for cognitive therapy with adults with intellectual disabilities. For the section on specific cognitive therapy tasks, the review will highlight the nature of tasks and stimuli used, and will then discuss the evidence relating to the ability to i) differentiate between beliefs, emotions and behaviours, ii) make links between events and emotions (AC links), and iii) make links between events, beliefs and emotions (ABC links). Evidence will be discussed in relation to the methodological quality of the papers.

## **1) Evidence concerning Emotional Understanding**

As shown in Table 5, three of the reviewed papers obtained a 'good' rating and the remaining nine papers achieved an 'adequate' rating.

### **Tasks used in assessing emotional understanding.**

The twelve reviewed papers assessed emotional understanding using a variety of experimental tasks. Table 5 details the type of task used in each study. Due to differences in the task type, stimuli and response format adopted by the studies, it was difficult to conclude which tasks might be optimal for assessing emotional understanding. However, the results of some of the higher quality studies did differentiate between different task formats. Plesa-Skwerer et al. (2006a) assessed facial and vocal emotion identification in adults and young people with Williams Syndrome and achieved a 'good' quality rating, due to their use of non intellectually disabled individuals as chronologically age matched controls. Their research suggested the importance of tasks with visual facial stimuli, as scores were considerably lower when participants had to identify emotions from sound.

Hippolyte et al. (2008) examined emotion recognition in adults with Down Syndrome and in mental age matched control participants, using a variety of emotion and control tasks. As a result of the study's robust design, they received a 'good' quality rating. Their findings indicated that picture identification tasks, which involved receptive understanding of emotion words, but a non-verbal response, resulted in higher levels of

emotional understanding in participants. This finding was also supported by one of the 'adequate' rated papers (Joyce et al., 2006), which assessed emotion recognition abilities as part of a wider study looking at cognitive therapy skills in adults with intellectual disabilities.

### **Effect of task demands on performance.**

It was difficult to establish the role of task demands on emotion perception performance, as only three studies included control tasks (Matheson & Jahoda, 2005, Rojahn et al., 2006, Hippolyte et al., 2008) and one of these did not make within group comparisons of the emotion and control tasks (Hippolyte et al., 2008). Matheson & Jahoda (2005) assessed the ability to recognise emotions in aggressive and non-aggressive individuals, and found that performance was significantly better on control tasks than emotion tasks in both groups. This was the only reviewed study to design a control task to match each emotion task administered. However, despite this careful consideration to the tasks used, the study was rated as 'adequate' because it failed to include a non-intellectually disabled control group. Furthermore, the tasks employed to control for the information-processing demands of the emotion tasks involved activity labelling and matching and, as Moore (2001) argued, it cannot be assumed that such tasks are of comparable complexity to emotion tasks. It is therefore not certain that the tasks did in fact control for task demands. In contrast to Matheson and Jahoda's findings, Rojahn et al. (2006) reported that participants obtained higher scores for the emotion tasks. This suggests that the control tasks were not of equal complexity and therefore may not have been a suitable control for information-processing demands.

In addition, only one study incorporated a mental age matched control group (Hippolyte et al., 2008) and this research was limited to a specific Down Syndrome population. The majority of studies did not include any non-intellectually disabled controls. There is therefore no evidence to suggest impairments in emotion perception specific to the intellectually disabled population.

### **Evidence concerning task stimuli.**

One of the key recommendations made by Moore (2001) centred around the use of ecologically valid, non-ambiguous stimuli. However, the majority of reviewed studies used static photos or line drawings of faces, which may have underestimated the emotion recognition capacities of people with intellectual disabilities. Indeed, the higher quality studies, which made attempts to increase the ecological validity of task stimuli, found that more naturalistic stimuli improved performance. Matheson and Jahoda (2005) asked participants to label emotions shown in photographs and reported that scores increased by 9% for aggressive individuals and 25% for non-aggressive individuals when the photographs included contextual information. A 'good' quality study by Plesa-Skwerer et al. (2006b) on adults and young people with Williams Syndrome, compared a task using videoed dynamic, facial expressions with a task using photos of eyes and found that performance improved by 24% for participants with non-specific intellectual disabilities and 16% for participants with Williams Syndrome. It should however be noted that the video task contained a more restricted range of emotions, and may have been easier for this reason.



Despite attempts by some studies to increase the ecological validity of tasks, no study incorporated stimuli with cues from several modalities, such as facial, vocal, dynamic and contextual cues. Furthermore, none of the papers included data on the participants' abilities to report on their own emotional experience or that of others, as would be required in cognitive therapy.

### **Evidence concerning understanding of different types of emotion.**

The types of emotions which participants found easiest to recognise were generally consistent across studies and tasks. Six studies analysed the different emotions separately and all found that happiness was the most correctly recognised emotion (Matheson & Jahoda, 2005, Jahoda et al., 2006, Oathamshaw and Haddock, 2006, Plesa-Skwerer et al., 2006a, Plesa-Skwerer et al., 2006b, Hippolyte et al., 2008). The recognition of happiness in these studies was followed by anger or sadness. The emotions that participants found more difficult to recognise included fear, disgust and surprise.

Two studies included neutral facial stimuli and reported separate analyses of these items. Both Hippolyte et al. (2008) and Plesa-Skwerer et al. (2006b), found that people with intellectual disabilities had significantly more difficulty than the control groups at labelling neutral expressions and more difficulty at reporting neutral expression words than most other emotion words.

**Evidence concerning the link between emotional understanding, language ability and overall IQ scores.**

The majority of papers found a link between receptive language ability and emotional understanding (Dagnan et al., 2000, Matheson & Jahoda, 2005, Jahoda et al., 2006, Joyce et al., 2006, Oathamshaw & Haddock, 2006, Sams et al., 2006, Woodcock & Rose, 2007). However, the higher quality studies (Hippolyte et al., 2008, Plesa-Skwerer et al., 2006a, Plesa-Skwerer et al., 2006b) reported that receptive language ability was only linked to certain tasks or participant groups and these findings were not consistent between studies.

Five studies analysed task performance in relation to general intellectual ability. Only one 'good' quality paper reported an association between emotional understanding and IQ (Plesa-Skwerer et al., 2006b). A further study by Kroeger et al. (2001), which examined the relationship between facial emotion recognition and cognitive abilities, also found an association. However, the other three papers, two of which were 'good' quality (Plesa-Skwerer et al., 2006a, Hippolyte et al., 2008) and one of which was 'adequate' (Matheson & Jahoda, 2005), found no significant relationship.

**Evidence concerning the link between emotional understanding and therapy.**

None of the studies reviewed provided data to link performance on emotional understanding tasks with therapeutic engagement or outcome.

### **Summary of evidence on emotional understanding.**

The overall evidence on emotional understanding is limited. The research gives a clear indication of the types of emotions recognised by participants with intellectual disabilities. However, methodological issues, in particular the lack of control groups and control tasks, limit the conclusions which can be made regarding emotion recognition deficits in this population. Some of the studies focussed on specific syndromes and results may not generalise to other intellectually disabled populations. In addition, several of the studies had small sample sizes and only one paper reported a power calculation. Results must therefore be interpreted with caution. Nevertheless, it did appear that providing contextual and dynamic cues was important in eliciting optimal performance from participants. The relationship between emotional understanding, language ability and IQ requires further investigation, as results were not consistent between studies.

### **2) Evidence concerning Specific Cognitive Therapy Skills**

As shown in Table 6, the five papers included in this section of the review all obtained an 'adequate' rating.

#### **Tasks used to assess cognitive therapy specific skills.**

Papers by Dagnan et al. (2000), Joyce et al. (2006), Oathamshaw and Haddock (2006) and Sams et al. (2006) all investigated a range of cognitive therapy skills in adults with intellectual disabilities. They used story labelling tasks, which involved choosing an

emotion, belief or behaviour in response to hypothetical scenarios. A further study by McEvoy et al. (2002) used similar task formats to assess the ability of adults with intellectual disabilities to make links between events and emotions in relation to bereavement. As the studies all used the same or similar tasks, it was not possible to determine which type of task might provide the most accurate assessment of the ability to make AC and ABC links.

### **Effect of task demands on performance.**

The experimental tasks within this literature are likely to present participants with demands different to those which would be required as part of cognitive therapy. However, it is difficult to establish the effect of task demands on the performances of people with intellectual disabilities, as none of the research included control tasks or groups, and no studies made a comparison with participants' abilities to make links with events and beliefs when reporting on their own emotions.

### **Evidence concerning the ability to differentiate between beliefs, emotions and behaviours.**

Two studies (Oathamshaw & Haddock, 2006, Sams et al., 2006) examined the ability to differentiate between beliefs, emotions and behaviours using tasks which required participants to identify a series of statements as thoughts ('I've achieved something'), feelings ('Sarah was very upset') or behaviours ('Making a cup of tea'). Results were inconsistent. Sams et al. (2006) found that the majority of participants identified less than two thirds of the statements accurately, but were able to correctly identify more

thoughts than behaviours or feelings. In contrast, Oathamshaw and Haddock (2006) reported evidence that participants found it easiest to identify behaviours and had considerably more difficulty identifying thoughts.

**Evidence concerning the ability to make links between events and emotions (AC links).**

Four papers considered the ability to make AC links using the Reed and Clements (1989) Assessment of Emotional Understanding. The assessment is passed if individuals can correctly identify happy or sad emotions in response to six hypothetical scenarios. In both the Dagnan et al. (2000) and Oathamshaw and Haddock (2006) studies, over 70% of participants passed the task. However, only 40-50% of participants in papers by McEvoy et al. (2002) and Joyce et al. (2006) achieved pass scores. This discrepancy may be a result of differences in the cognitive abilities of the participants, with the latter two studies potentially including people with more severe intellectual disabilities. In McEvoy et al.'s (2002) study, 76% of participants were able to describe an appropriate emotion in response to a more detailed story about a bereavement. This suggests that the ability to make AC links can be improved with an increase in contextual information. The reviewed research provided no evidence concerning the ability of individuals to make links between their own emotions and events, nor to make links between events and emotions other than happy or sad.

**Evidence concerning the ability to make links between events, beliefs and emotions (ABC links).**

Three studies (Dagnan et al., 2000, Joyce et al., 2006, Oathamshaw & Haddock, 2006) assessed the ability of participants to make ABC links, using a cognitive mediation task developed by Dagnan et al. (2000). This task consists of ten hypothetical scenarios and requires participants to choose an emotion, given an event and belief or to choose a belief, given an event and emotion. Half of the scenarios on this task are paired with a congruent emotion or belief and half with an incongruent emotion or belief. An example of a congruent pairing would be ‘You’re in a race and you win the race...and you feel happy.’ An example of an incongruent pairing would be ‘Your friend shouts at you...and you feel happy.’ Dagnan et al. (2000) argue that the incongruent pairings are particularly important in assessing ABC links, as the individual has to give greater weighting to the belief than the event in order to account for the emotion. All three studies reported that participants had considerable difficulty on the cognitive mediation task, and found this more difficult than making links between events and emotions. There was also some evidence from both the Dagnan et al. (2000) and Oathamshaw and Haddock (2006) papers that making links was more difficult when beliefs were incongruent with the event. None of the papers reviewed included any research data on the ability of participants to make links between real life events and their own beliefs and emotions.

**Evidence concerning the link between cognitive therapy skills, language ability and overall IQ scores.**

Dagnan et al. (2000), McEvoy et al. (2002), Joyce et al. (2006) and Oathamshaw and Haddock (2006) all reported an association between receptive language skills and the ability to make links between events and emotions. The relationship between receptive vocabulary and the ability to make ABC links is less clear. Dagnan et al. (2000), Joyce et al. (2006) and Oathamshaw and Haddock (2006) found a significant difference in receptive language ability between those who passed and those who failed certain aspects of the cognitive mediation task, however the particular aspects of the task to which language ability was linked varied between studies. Only one study by Sams et al. (2006) included a measure of IQ and no association was found between overall intellectual ability and performance on cognitive therapy tasks.

**Evidence concerning the link between cognitive therapy skills and therapy engagement and outcomes.**

None of the studies reviewed provided data on therapeutic engagement or outcomes, therefore there is currently no evidence for a link between performance on assessments of cognitive therapy skills and favourable therapy outcomes.

**Summary of evidence on key cognitive therapy skills.**

The evidence indicates that people with intellectual disabilities are often able to make links between events and emotions, but that identifying mediating beliefs is more difficult. The research is still at an early stage, and it was difficult to differentiate

between papers as the methodological quality of the studies was similar. Although there were attempts to make the assessments relevant to adults with intellectual disabilities, the cognitive demands of the experimental tasks appeared high and the lack of control groups and tasks made it difficult to establish the impact of these demands on performance. Furthermore, only one study examined a clinical population and, although sample sizes were reasonable, most papers did not report clear inclusion and exclusion criteria, thus limiting the interpretation of the findings.

### **Discussion**

The results of this review indicate that evidence concerning the abilities of people with intellectual disabilities to understand emotions and carry out key cognitive therapy tasks is limited. The research on key cognitive therapy tasks is restricted to a few papers and, although a wider range of studies have been published in relation to emotional understanding, the majority of papers have not incorporated previous recommendations concerning robust research designs and the use of realistic stimuli (Moore, 2001). The lack of mental age matched control groups and adequate control tasks do not allow us to determine whether poor performance is due to specific skill deficits within this population or the demands of task performance. In addition, small sample sizes and differences in the tasks administered limit the conclusions which can be made. Despite these limitations, some of the higher quality studies have highlighted issues which are of relevance for cognitive therapy assessments in this population.



Evidence concerning the types of emotions recognised by people with intellectual disabilities is consistent with the findings of previous literature on emotion recognition (Rojahn et al., 1995b). In terms of cognitive therapy with this population, therapists may need to do pre-therapy work with some individuals to improve their understanding of more complex emotions, and to develop a shared emotional language.

The results of this review highlight the type of task stimuli which may be more effective in clinical assessments of therapy skills. Although the evidence is limited, those studies which attempted to make tasks more relevant to everyday behaviour, by providing contextual or moving stimuli, reported improved performance. The higher quality studies suggested that including facial stimuli, avoiding subtle or ambiguous material and providing non-verbal response formats can also result in better emotion recognition abilities. These findings support the argument made by Moore (2001) that experimental tasks often underestimate emotional understanding abilities and can lead to poorer performance due to the additional information processing demands they place on participants. In both research and clinical practice, people often try to simplify assessment task stimuli for this population, but in everyday life people draw upon a range of cues. Using assessment material which incorporates both contextual and dynamic cues, for example videotaped scenarios, may access people's intuitive emotional understanding more effectively and provide a more accurate estimation of their skills.

These findings also relate to the available evidence on specific cognitive therapy tasks. The reviewed evidence indicates that many people with intellectual disabilities can make links between hypothetical events and basic emotions, however the ability to link beliefs with events and emotions was more difficult. In a paper currently in press, Dagnan et al. (2009), acknowledge that the cognitive mediation task, which was used to assess these ABC links, was too demanding for participants. Furthermore, McEvoy et al. (2002) argue that the Reed and Clements' assessment of AC links is a simplistic measure of emotional understanding, which may be inadequate or misleading within a clinical context. These tasks, or similar versions, are often used within clinical practice to provide a quick, structured method of assessing emotional understanding and cognitive therapy skills. However, findings from the broader literature on emotion recognition suggest that more sophisticated assessment materials are required and there is recognition in the therapeutic literature that these structured tools may not reflect how people understand emotions and beliefs in a real life context. Indeed, it is the ability to construct a narrative around one's own emotional experiences which is key to participation in psychological therapy. However, it is not clear what association there is between this skill and performance on structured assessment tasks, as none of the papers provided evidence on the ability of people to report on their own emotions and beliefs in relation to events that they themselves have experienced.

There is also a lack of evidence about the relative importance of key cognitive therapy skills for positive therapeutic engagement and outcomes. The ability to understand emotions and link them to the interpretation of events is considered to be important for

participation in cognitive therapy (Dagnan & Chadwick, 1997). However a number of other factors, such as motivation, self-efficacy and environmental support, are also likely to be important for this population (Willner, 2006). As no studies have considered the association between these various factors and therapeutic outcomes, it is not possible to draw conclusions about which skills clinicians should focus on when assessing potential candidates for cognitive therapy.

### **Conclusions**

The evidence concerning the abilities of people with intellectual disabilities to understand emotions and carry out specific cognitive therapy tasks is limited. The results of the current review indicate that further research in this area is required, but that future studies should adopt a different approach to the assessment of emotional understanding and specific cognitive therapy skills than that previously undertaken. In particular, as recommended by an earlier review on emotional understanding, more complex, ecologically valid task stimuli should be used (Moore, 2001). Furthermore, a broader approach to assessment should be taken within research and clinical practice, taking account of the abilities of people with intellectual disabilities to report on their own emotional experience and associated beliefs. Lastly, there is a need to establish the link between key cognitive therapy tasks and therapeutic competence, in order that the relevant skills are prioritised in any pre-therapy assessments.

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Table 1: Reasons for exclusion of papers during search for papers on emotional understanding

<b>Source</b>	<b>No. of papers identified</b>	<b>No. of papers excluded</b>	<b>Reasons why did not meet inclusion criteria</b>	<b>No. excluded as did not meet quality criteria</b>
<b>MEDLINE electronic database</b>	23	22	<ul style="list-style-type: none"> <li>• Not relevant for review question (18)</li> <li>• Review papers (2)</li> <li>• Autism population (1)</li> </ul>	1
<b>PSYCHINFO electronic database</b>	100	95	<ul style="list-style-type: none"> <li>• Not relevant for review question (80)</li> <li>• Review paper (1)</li> <li>• Published pre-2000 (12)</li> <li>• Not published in the English language (1)</li> </ul>	1
<b>EMBASE electronic database</b>	41	35	<ul style="list-style-type: none"> <li>• Not relevant for review question (27)</li> <li>• Review paper (1)</li> <li>• Published pre-2000 (3)</li> <li>• Autism population (2)</li> <li>• Child population (2)</li> </ul>	0
<b>EBM REVIEWS electronic database</b>	49	49	<ul style="list-style-type: none"> <li>• Not relevant for review question (48)</li> <li>• Published pre-2000 (1)</li> </ul>	0
<b>Hand search of key journals and reference lists</b>	5	3	<ul style="list-style-type: none"> <li>• Child population (1)</li> <li>• Study on facial, not emotion recognition (1)</li> </ul>	1

Table 2: Reasons for exclusion of papers during search for papers on cognitive therapy skills

<b>Source</b>	<b>No. of papers identified</b>	<b>No. of papers excluded</b>	<b>Reasons why did not meet inclusion criteria</b>	<b>No. excluded as did not meet quality criteria</b>
<b>MEDLINE electronic database</b>	4	4	<ul style="list-style-type: none"> <li>• Not relevant for review question (4)</li> </ul>	0
<b>PSYCHINFO electronic database</b>	6	5	<ul style="list-style-type: none"> <li>• Not relevant for review question (5)</li> </ul>	0
<b>EMBASE electronic database</b>	6	5	<ul style="list-style-type: none"> <li>• Not relevant for review question (5)</li> </ul>	0
<b>EBM REVIEWS electronic database</b>	7	7	<ul style="list-style-type: none"> <li>• Not relevant for review question (7)</li> </ul>	0
<b>Hand search of key journals and reference lists</b>	4	0		0

Table 3: Quality Rating Scale

<b>Item</b>	<b>Criteria</b>	<b>Score</b>
<b>Design</b>	Cross sectional design with MA and CA matched control groups and control task(s).	7
	Cross sectional design with MA matched control group and control task(s).	6
	Cross sectional design with MA matched control group and no control task(s).	5
	Cross sectional design with CA matched control group and control task.	4
	Cross sectional design with CA matched control group and no control task.	3
	Cross sectional design with no control group, but with control task.	2
	Cross sectional design with no control group and no control task.	1
	Inappropriate design or not enough detail to rate.	0
<b>Sample</b>	Adult ID sample, power calculation reported.	3
	Adult ID sample, sample size of >15 participants per group.	2
	Mixed age ID sample with age accounted for in analyses (all participants over 12 years) sample size of >15 participants per group.	1
	Mixed age ID sample with age not accounted for in analyses or not all participants over 12 years, sample size of <15 participants per group.	0

Item	Criteria	Score
<b>Assessment Of IQ &amp; Language Ability</b>	Standardised assessment of IQ and language ability.	3
	Standardised assessment of IQ or language ability.	2
	Non standardised assessment of IQ or language ability.	1
	No assessment of IQ or language ability.	0
<b>Key Measure</b>	Measure standardised for use with ID population.	3
	Measure standardised on non-ID population, appropriate to design and for use with ID population.	2
	Non standardised measure appropriate to design and for use with ID population.	1
	Measure inappropriate to design and/or population.	0
<b>Task Stimuli</b>	Good ecological validity of task stimuli (i.e. moving or contextualised image/real life scenario).	3
	Reasonable ecological validity of task stimuli (i.e. photos/hypothetical vignette appropriate to ID population).	2
	Poor ecological validity of task stimuli (i.e. line drawings/hypothetical vignette not appropriate to ID population).	1
	Inappropriate task stimuli, or not enough detail given to rate.	0

Item	Criteria	Score
<b>Statistical Analysis</b>	Statistical analysis appropriate to design and data, justify use of parametric/non-parametric statistics, and IQ and/or language ability analysed in relation to performance on measures.	3
	Statistical analysis appropriate to design and data, and IQ and/or language ability analysed in relation to performance on measures.	2
	Statistical analyses appropriate to design and data.	1
	Inappropriate statistical analyses or not enough detail given to rate.	0
<b>Link To Therapy</b>	Link made between findings and therapeutic outcomes/therapeutic engagement.	3
	Discussion about findings and implications for therapeutic outcomes/engagement.	2
	Discussion about findings in relation to clinically relevant issues (e.g. anger, aggression, social skills).	1
	No discussion about therapy/clinical issues.	0

Table 4: Quality Rating Scale Categories

<b>Rating</b>	<b>Essential Criteria</b>	<b>Score (maximum 25)</b>
<b>Excellent</b>	<ul style="list-style-type: none"> <li>• Cross sectional design with MA matched control group and control task(s).</li> <li>• Standardised assessment of IQ and language ability.</li> <li>• Key measure standardised for use with ID population.</li> <li>• Good ecological validity of task stimuli (i.e. moving or contextualised image/real life scenario).</li> <li>• IQ and language ability analysed in relation to performance on measures.</li> <li>• At least 1 point on all categories except Link to Therapy.</li> </ul>	Minimum of 19 points
<b>Good</b>	<ul style="list-style-type: none"> <li>• Cross sectional design with MA or CA matched control group.</li> <li>• Standardised assessment of IQ or language ability.</li> <li>• Reasonable ecological validity of task stimuli (i.e. photos/hypothetical vignette appropriate to ID population).</li> <li>• IQ or language ability analysed in relation to performance on measures.</li> <li>• At least 1 point on all categories except Link to Therapy.</li> </ul>	Minimum of 13 points
<b>Adequate</b>	<ul style="list-style-type: none"> <li>• At least 1 point on all categories except Link to Therapy.</li> </ul>	Minimum of 7 points
<b>Poor</b>	<ul style="list-style-type: none"> <li>• Failure to meet criteria for Adequate category</li> </ul>	Minimum of 0 points

Table 5: Papers reviewed for evidence concerning emotional understanding

Study	Quality Rating and Overall Score	Research Question	Participant Characteristics	Design	Measures	Type of Task and Stimuli for Emotion Task <sup>1</sup>	Results	Methodological Issues
Dagnan, Chadwick & Proudlove (2000)	ADEQUATE 11	Assessment of the ability of people with ID to recognise emotions	Community based sample of adults with ID, n=40	Cross sectional, no control group, no control task.	<b>Emotion Task:</b> Symbols for Makaton (Dagnan & Proudlove, 1997) <b>Language:</b> BPVS (Dunn et al., 1982)	Picture identification task using symbols	<ul style="list-style-type: none"> <li>• Mean 2.7 out of 5 emotions correctly identified</li> <li>• Language ability associated with performance on emotion recognition task</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Measure association between emotion recognition and language ability</li> <li>• Compare emotion recognition with other cognitive therapy skills</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• No non-ID control group, no control task</li> <li>• Measure lacks ecological validity</li> </ul>
Kroeger, Rojahn & Naglieri (2001)	ADEQUATE 11	Relationship between facial emotion recognition and cognitive processes	Community based sample of adults with ID, n=50	Cross sectional, no control group. Control task.	<b>Emotion Task:</b> Facial Discrimination Task (Rojahn et al., 1995) <b>Age Recognition Task:</b> Facial Discrimination Task (Rojahn et al., 1995) <b>IQ:</b> Cognitive Assessment System Basic Battery (Naglieri & Das, 1997)	Picture identification tasks using photos	<ul style="list-style-type: none"> <li>• Emotion recognition linked to intellectual ability.</li> <li>• Control task more difficult than emotion task.</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Control task</li> <li>• Balancing of items in emotion task.</li> <li>• Clear exclusion criteria.</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• No control group</li> <li>• Control tasks not of comparable complexity</li> <li>• No assessment of language ability</li> <li>• Measure lacks ecological validity.</li> </ul>



Study	Quality Rating and Overall Score	Research Question	Participant Characteristics	Design	Measures	Type of Task and Stimuli for Emotion Task <sup>1</sup>	Results	Methodological Issues
Matheson & Jahoda (2005)	ADEQUATE 16	Assessment of emotion recognition in aggressive & non-aggressive people with ID	Community based sample of adults with ID, n=34 (19 aggressive, 15 non-aggressive)	Cross sectional, no non-ID control group. Control tasks for all 3 emotion tasks.	<b>Emotion Task:</b> 1).Photos from The Pictures of Facial Affect (Ekman & Friesen, 1976) 2).Contextual photos 3). Contextual cartoons <b>Activity/Costume Recognition Task:</b> 1).Photos 2).Contextual photos 3). Contextual cartoons <b>IQ:</b> Raven's Coloured Progressive Matrices (Raven, 1965) <b>Language:</b> BPVS (Dunn et al., 1982)	Picture labelling task using photos  Picture labelling task using contextualised photos  Picture matching task using cartoons	<ul style="list-style-type: none"> <li>Significantly better performance on control than emotion tasks for aggressive and non aggressive groups.</li> <li>Happiness= easiest emotion to identify in each task for both groups, followed by sadness, then anger.</li> <li>Both groups more accurate on contextual, than non contextual photos.</li> <li>Language ability correlated with emotion recognition on all emotion tasks.</li> <li>No association between IQ estimate and emotion recognition.</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>Attempts to increase ecological validity of emotion recognition material</li> <li>Includes non-verbal assessment of emotion recognition</li> <li>Control tasks for each emotion task</li> <li>Assessment of IQ &amp; language ability</li> <li>Exclusion of autism</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>Small sample size</li> <li>No non ID control group</li> <li>Control tasks may not be of comparable complexity</li> <li>Ecological validity/reliability of non-verbal cartoon measure</li> </ul>
Jahoda, Pert & Trower (2006)	ADEQUATE 15	Assessment of emotion recognition in aggressive & non-aggressive people with ID	Community based sample of adults with ID, n=89 (43 aggressive, 46 non-aggressive)	Cross sectional, no non-ID control group, no control task.	<b>Emotion Task:</b> 12 photos from The Pictures of Facial Affect (Ekman & Friesen, 1976) <b>IQ:</b> Raven's Coloured Progressive Matrices (Raven, 1965) <b>Language:</b> BPVS (Dunn et al., 1982),	Picture labelling task using photos	<ul style="list-style-type: none"> <li>No difference between aggressive &amp; nonaggressive groups on emotion recognition task</li> <li>Happiness = most correctly recognised emotion for both groups followed by anger, then sadness</li> <li>Disgusted= least correctly identified emotion for both groups</li> <li>Language ability associated with emotion recognition</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>Assessment of IQ &amp; language ability</li> <li>Exclusion of autism/psychiatric disorder/visual impairments</li> <li>Control for differences in IQ/language ability between groups</li> <li>Discuss implications of findings for therapy.</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>No non ID control group</li> <li>No control tasks</li> <li>Measure lacks ecological validity</li> </ul>

Study	Quality Rating and Overall Score	Research Question	Participant Characteristics	Design	Measures	Type of Task and Stimuli for Emotion Task <sup>1</sup>	Results	Methodological Issues
Joyce, Globe & Moody (2006)	ADEQUATE 12	Assessment of the ability of people with ID to recognise and label emotions	Community based sample of adults with ID, n=52	Cross sectional, no control group, no control task.	<b>Emotion Task:</b> Idiosyncratic assessment of ability to recognise and label 12 emotions using photos <b>Language:</b> BPVS (Dunn et al., 1982), CASP (van der Gaag, 1988)	Picture identification task using photos  Picture labelling task using photos	<ul style="list-style-type: none"> <li>• Mean 4.4 out of 12 emotions correctly identified</li> <li>• Mean 2.7 out of 12 emotions correctly labeled</li> <li>• Significant difference in ability to identify vs. label emotions</li> <li>• Language ability associated with ability to identify and label emotions</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Measure of ability to label emotions as well as identify them</li> <li>• Measure association between emotion recognition and language ability</li> <li>• Compare emotion recognition with other cognitive therapy skills</li> <li>• Use of photo based task, rather than symbols</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• No non-ID control group, no control task</li> <li>• Measure lacks ecological validity</li> </ul>
Oathamshaw & Haddock (2006)	ADEQUATE 13	Assessment of the ability of people with ID and psychosis to recognise emotions	Community and hospital based sample of adults with ID and psychosis, n=50	Cross sectional, no control group, no control task.	<b>Emotion Task:</b> Symbols for Makaton (Dagnan & Proudlove, 1997) <b>Language:</b> BPVS (Dunn et al., 1982)	Picture identification task using symbols	<ul style="list-style-type: none"> <li>• Mean 2.89 out of 5 emotions correctly identified</li> <li>• 96% correctly identified happy, 58% sad, hardest was worried 36%</li> <li>• Language ability associated with performance on emotional recognition task</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Clear inclusion &amp; exclusion criteria, including language ability</li> <li>• Measure association between emotion recognition and language ability</li> <li>• Case note review to ensure evidence of ID</li> <li>• Power calculation stated</li> <li>• Standardised measures of psychosis used</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• No non-ID control group, no control task</li> <li>• Measure lacks ecological validity</li> </ul>

Study	Quality Rating and Overall Score	Research Question	Participant Characteristics	Design	Measures	Type of Task and Stimuli for Emotion Task <sup>1</sup>	Results	Methodological Issues
Plesa-Skwerer, Faja, Schofield, Verbalis & Tager-Flusberg (2006a)	GOOD 14	Assessment of facial and vocal emotion identification in Williams Syndrome (WS)	Community based sample of adults and young people with WS, n=47  Non WS ID control group, n=49  Non-ID CA control group, n=58	Cross sectional with ID and CA control groups. No control task.	<b>Emotion Task:</b> Computerized version of DANVA2 (Nowacki & Duke, 1994). Faces & Paralanguage subtests <b>IQ:</b> K-BIT (Kaufman & Kaufman, 1990) <b>Language:</b> PPVT-III (Dunn & Dunn, 1997)	Picture labelling task using photos  Sound Labelling	<ul style="list-style-type: none"> <li>CA control group significantly better than WS and ID group at identifying emotions in both facial and vocal modalities.</li> <li>All 3 groups better at facial recognition than vocal recognition.</li> <li>Language ability = significant predictor of performance in facial &amp; vocal tasks for WS only.</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>CA matched control group</li> <li>Control task</li> <li>Assessment of IQ</li> <li>Control for age, language, IQ &amp; facial recognition ability</li> <li>Good discussion of task demands &amp; of ecological validity.</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>No typically developing MA matched control group</li> <li>Control task may not be of comparable complexity</li> <li>Didn't counterbalance tasks</li> <li>Measures lack ecological validity</li> </ul>
Plesa-Skwerer, Verbalis, Schofield, Faja & Tager-Flusberg (2006b)	GOOD 13	Assessment of facial emotion identification in Williams Syndrome (WS)	Community based sample of adults and young people with WS.  Experiment 1: WS group, n=43 Non WS ID control group, n=42 Non-ID CA control group, n=46  Experiment 2: WS group, n=37	Cross sectional with ID and CA control groups. No control task.	<b>Emotion Task:</b> Eyes task, revised version (Baron-Cohen et al., 2001) Dynamic facial expressions of emotion from Mindreaders software application (Baron-Cohen & Tead, 2003) <b>IQ:</b> K-BIT (Kaufman & Kaufman, 1990) <b>Language:</b> PPVT-III (Dunn & Dunn, 1997)	Picture labelling task using photos of eyes  Video labelling task using dynamic images	<ul style="list-style-type: none"> <li>Control group significantly better at emotion recognition in both tasks</li> <li>Eyes task performance associated with IQ for non WS ID group.</li> <li>Dynamic stimuli task performance associated with language ability for WS group and with IQ for non WS ID group.</li> <li>On dynamic stimuli task, approx. 50% participants in ID groups scored within normal range. On eyes task only approx. 30% scored within normal range.</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>CA matched control group &amp; non WS ID control group</li> <li>Assessment of IQ &amp; language ability</li> <li>Separate adolescents &amp; adults in analysis.</li> <li>Control for between group differences in age &amp; gender</li> <li>Introduce more ecologically valid measure of emotion recognition.</li> <li>Account for potential practice effects in analyses.</li> </ul>

Study	Quality Rating and Overall Score	Research Question	Participant Characteristics	Design	Measures	Type of Task and Stimuli for Emotion Task <sup>1</sup>	Results	Methodological Issues
Plesa-Skwerer et al. (2006b) (continued)			Non WS ID control group, n=32 Non-ID CA control group, n=38					<b>Weaknesses:</b> <ul style="list-style-type: none"> <li>No typically developing MA matched control group</li> </ul>
Rojahn, Esbensen & Hoch (2006)	ADEQUATE 12	Assessment of link between emotion recognition and social adjustment in adults with ID	Community based sample of adults with ID, n=62	Cross sectional with no control group. Control task.	<b>Emotion Task:</b> Facial Emotion Discrimination Battery (Erwin et al., 1992) <b>Age and Facial Recognition Task:</b> Facial Emotion Discrimination Battery (Erwin et al., 1992) <b>Language:</b> Communication domain of Vineland Adaptive Behaviour Scales (Sparrow et al., 1984)	Picture labelling task using photos  Picture matching task using photos  Picture-story matching task using photos  Picture identification task using photos	<ul style="list-style-type: none"> <li>Only emotion picture labeling &amp; picture matching tasks correlated with prosocial behaviour.</li> <li>Higher scores on emotion tasks, than non-emotion tasks</li> </ul>	<b>Strengths:</b> <ul style="list-style-type: none"> <li>Counterbalanced tasks</li> <li>Control tasks</li> </ul> <b>Weaknesses:</b> <ul style="list-style-type: none"> <li>No control group</li> <li>Control tasks not of comparable complexity</li> <li>Measures lack ecological validity</li> <li>Missing data for some participants</li> </ul>
Sams, Collins & Reynolds (2006)	ADEQUATE 13	Assessment of the ability of people with ID to recognise emotions	Community based sample of adults with ID, n=59	Cross sectional, no control group, no control task.	<b>Emotion Task:</b> Symbols for Makaton (Dagnan & Proudlove, 1997) <b>IQ:</b> WASI (Wechsler, 1999) <b>Language:</b> BPVS (Dunn et al., 1982)	Picture identification task using symbols	<ul style="list-style-type: none"> <li>Mean 3.6 out of 5 emotions correctly identified</li> <li>44% correctly identified all 5 emotions</li> <li>Language ability associated with performance on emotion recognition task</li> <li>FSIQ and VIQ not associated with performance on emotion recognition task.</li> </ul>	<b>Strengths:</b> <ul style="list-style-type: none"> <li>Assessment of IQ</li> <li>Measure association between emotion recognition and language ability</li> <li>Counterbalancing of tasks</li> </ul> <b>Weaknesses:</b> <ul style="list-style-type: none"> <li>No non-ID control group, no control task</li> <li>Measure lacks ecological validity</li> </ul>

Study	Quality Rating and Overall Score	Research Question	Participant Characteristics	Design	Measures	Type of Task and Stimuli for Emotion Task <sup>1</sup>	Results	Methodological Issues
Woodcock & Rose (2007)	ADEQUATE 12	Assessment of relationship between emotion recognition and self-reported anger	Community based sample of adults with ID, n=30	Cross sectional, no control group, no control task.	<b>Emotion Task:</b> Test of Facial Emotion Recognition (FER) taken from Ekman 60 Faces Test (Young et al., 2002) <b>Language:</b> BPVS (Dunn et al., 1997)	Picture labelling task using photos	<ul style="list-style-type: none"> <li>Language ability associated with emotion recognition scores.</li> <li>No correlation between self-reported anger and emotion recognition.</li> <li>Significant negative correlation between level of anger and accuracy in recognizing neutral emotions.</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>Consideration of suitability of emotion recognition measure for different levels of ID</li> <li>Counterbalancing of task items</li> <li>Control for language ability</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>Small sample size</li> <li>No non ID control group</li> <li>No control task</li> <li>Measure lacks ecological validity</li> </ul>
Hippolyte, Barisnikov & Van der Linden (2008)	GOOD 18	Assessment of emotion recognition in adults with Down Syndrome (DS)	Community based sample of adults with DS and moderate ID, n=17  Control participants, n= 17	Cross-sectional with MA matched control group and control task.	<b>Emotion Task:</b> Face Processing Tests (Bruce et al., 2000) Facial Discrimination Task (Rojahn et al., 1995)- <b>Facial Recognition Task:</b> Face Processing Tests (Bruce et al., 2000)- <b>IQ:</b> Raven's Coloured Progressive Matrices (Raven et al., 1998) <b>Language:</b> French Adaptation of PPVT-R (Dunn et al., 1993)	Picture identification task using photos  Picture matching task using photos  Picture labelling task using photos  Rating task using photos	<ul style="list-style-type: none"> <li>No significant between group differences on control task</li> <li>On facial emotion identification task, control group significantly better at identifying 'surprise', no difference for emotions sad, happy &amp; anger</li> <li>Control group significantly better at matching facial emotions.</li> <li>Correlation between language ability and angry &amp; surprise emotions for DS group.</li> <li>On facial discrimination task, DS group recognised significantly fewer neutral faces than controls.</li> <li>No relationship between IQ estimate &amp; tasks.</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>MA matched control group</li> <li>Control task</li> <li>Measure association between emotion recognition and language ability</li> <li>Good discussion of task demands</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>Control task may not be of comparable complexity</li> <li>Measures lack ecological validity</li> </ul>

Table 6: Papers reviewed for evidence concerning specific cognitive therapy skills

Study	Quality Rating and Overall Score	Research Question	Participant Characteristics	Design	Measures	Type of Task and Stimuli for Cognitive Therapy Task <sup>1</sup>	Results	Methodological Issues
Dagnan, Chadwick & Proudlove (2000)	ADEQUATE 12	Assessment of the ability of people with ID to make 1). event-emotion links, 2). event-belief-emotion links	Community based sample of adults with ID, n=40	Cross sectional, no control group, no control task.	<b>AC links:</b> Assessment of emotional understanding (Reed & Clements, 1989) <b>ABC links:</b> Assessment of cognitive mediation (Dagnan et al., 2000) <b>Language:</b> BPVS (Dunn et al., 1982)	Story labelling tasks using hypothetical scenarios	<ul style="list-style-type: none"> <li>75% participants passed event-emotion task</li> <li>10-25% participants passed different aspects of cognitive mediation task.</li> <li>Performance on event-emotion task correlated with cognitive mediation task</li> <li>Performance on both tasks associated with language ability</li> <li>Some evidence that incongruent links on cognitive mediation task harder than congruent links</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>Use of cognitive mediation task with incongruent/ congruent items.</li> <li>Assessment of language ability</li> <li>Counterbalancing of emotional understanding and two cognitive mediation tasks.</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>No non-ID control group, no control task</li> <li>Measure lacks ecological validity</li> </ul>
McEvoy, Reid & Guerin (2002)	ADEQUATE 11	Assessment of emotional understanding of people with ID in relation to bereavement	Community based sample of adults with ID, n=41	Cross sectional, no control group, no control task.	<b>AC links:</b> Assessment of emotional understanding (Reed & Clements, 1989) Story labeling task, based on bereavement scenario. <b>Language:</b> BPVS (Dunn et al., 1982)	Story labelling tasks using hypothetical scenarios/ story	<ul style="list-style-type: none"> <li>41% participants passed event-emotion task</li> <li>Language ability associated with performance on event-emotion task.</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>Assessment of language ability</li> <li>Good discussion of issues with task stimuli</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>No non-ID control group, no control task</li> <li>Measure lacks ecological validity</li> </ul>

Study	Quality Rating and Overall Score	Research Question	Participant Characteristics	Design	Measures	Type of Task and Stimuli for Cognitive Therapy Task <sup>1</sup>	Results	Methodological Issues
Joyce, Globe & Moody (2006)	ADEQUATE 12	Assessment of the ability of people with ID to make 1). event-emotion links, 2). event-belief-emotion links	Community based sample of adults with ID, n=52	Cross sectional, no control group, no control task.	<b>AC links:</b> Assessment of emotional understanding (Reed & Clements, 1989) <b>ABC links:</b> Assessment of cognitive mediation (Dagnan at al., 2000) <b>Language:</b> BPVS (Dunn et al., 1982), CASP (van der Gaag, 1988)	Story labelling tasks using hypothetical scenarios	<ul style="list-style-type: none"> <li>50% of participants passed event-emotion task</li> <li>11.5-13.5% participants passed different aspects of cognitive mediation task.</li> <li>Language ability associated with performance on event-emotion and cognitive mediation tasks.</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>Use of cognitive mediation task with incongruent/ congruent items.</li> <li>Assessment of language ability</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>No non-ID control group, no control task</li> <li>Measure lacks ecological validity</li> <li>No clear exclusion criteria</li> </ul>
Oathamshaw & Haddock (2006)	ADEQUATE 14	Assessment of the ability of people with ID and psychosis to make 1). event-emotion links, 2). event-belief-emotion links, 3) differentiate between thoughts, behaviours and feelings	Community and hospital based sample of adults with ID and psychosis, n=50	Cross sectional, no control group, no control task.	<b>AC links:</b> Assessment of emotional understanding (Reed & Clements, 1989) <b>ABC links:</b> Assessment of cognitive mediation (Dagnan at al., 2000) <b>Thoughts/Feeling/Behaviour Discrimination:</b> Questionnaire, adapted from Greenberger & Padesky. (1985) <b>Language:</b> BPVS (Dunn et al., 1982)	Story labelling tasks using hypothetical scenarios/ statements	<ul style="list-style-type: none"> <li>72% passed event-emotion task</li> <li>10-12% participants passed different aspects of cognitive mediation task.</li> <li>67% passed T/F/B task</li> <li>Language ability associated with performance on event-emotion task and some of cognitive mediation tasks</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>Clear inclusion &amp; exclusion criteria, including language ability</li> <li>Assessment of language ability</li> <li>Case note review to ensure evidence of ID</li> <li>Report power calculation</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>No non-ID control group, no control task</li> <li>Measure lacks ecological validity</li> </ul>

Study	Quality Rating and Overall Score	Research Question	Participant Characteristics	Design	Measures	Type of Task and Stimuli for Cognitive Therapy Task <sup>1</sup>	Results	Methodological Issues
Sams, Collins & Reynolds (2006)	ADEQUATE 14	Assessment of the ability of people with ID to differentiate between beliefs, emotions and behaviours	Community based sample of adults with ID, n=59	Cross sectional, no control group, no control task.	<b>Thought/Feeling/Behaviour Discrimination:</b> Six short stories with T/F/B statements, based on Quakely et al. (2004) <b>IQ:</b> WASI (Wechsler, 1999) <b>Language:</b> BPVS (Dunn et al., 1982)	Story labelling task using hypothetical scenarios	<ul style="list-style-type: none"> <li>• Mean score on T/F/B task = 9.75 out of 18.</li> <li>• Language ability, FSIQ and VIQ associated with score on T/F/B task.</li> </ul>	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Assessment of IQ and language ability</li> <li>• Counterbalancing of tasks</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• Measure lacks ecological validity</li> <li>• No measure of association between emotion recognition and T/F/B task</li> </ul>

<sup>1</sup>Definitions of task type, as detailed in Moore (2001): **Picture identification:** participants point to picture when given emotion word, **Picture/video labelling:** participants say word in response to picture/video clip, **Picture/video matching:** participants point to emotion picture corresponding to another picture/video clip, **Rating:** participants rate emotional intensity on a scale, **Story labelling:** participants say emotion word to depict emotion of character in story, **Picture-Story matching:** participants point to emotion picture corresponding to emotion of character in story, **Sound labelling:** participants say word that corresponds to an emotional sound.



Figure 1: Flowchart of search strategy and results for papers on emotional understanding

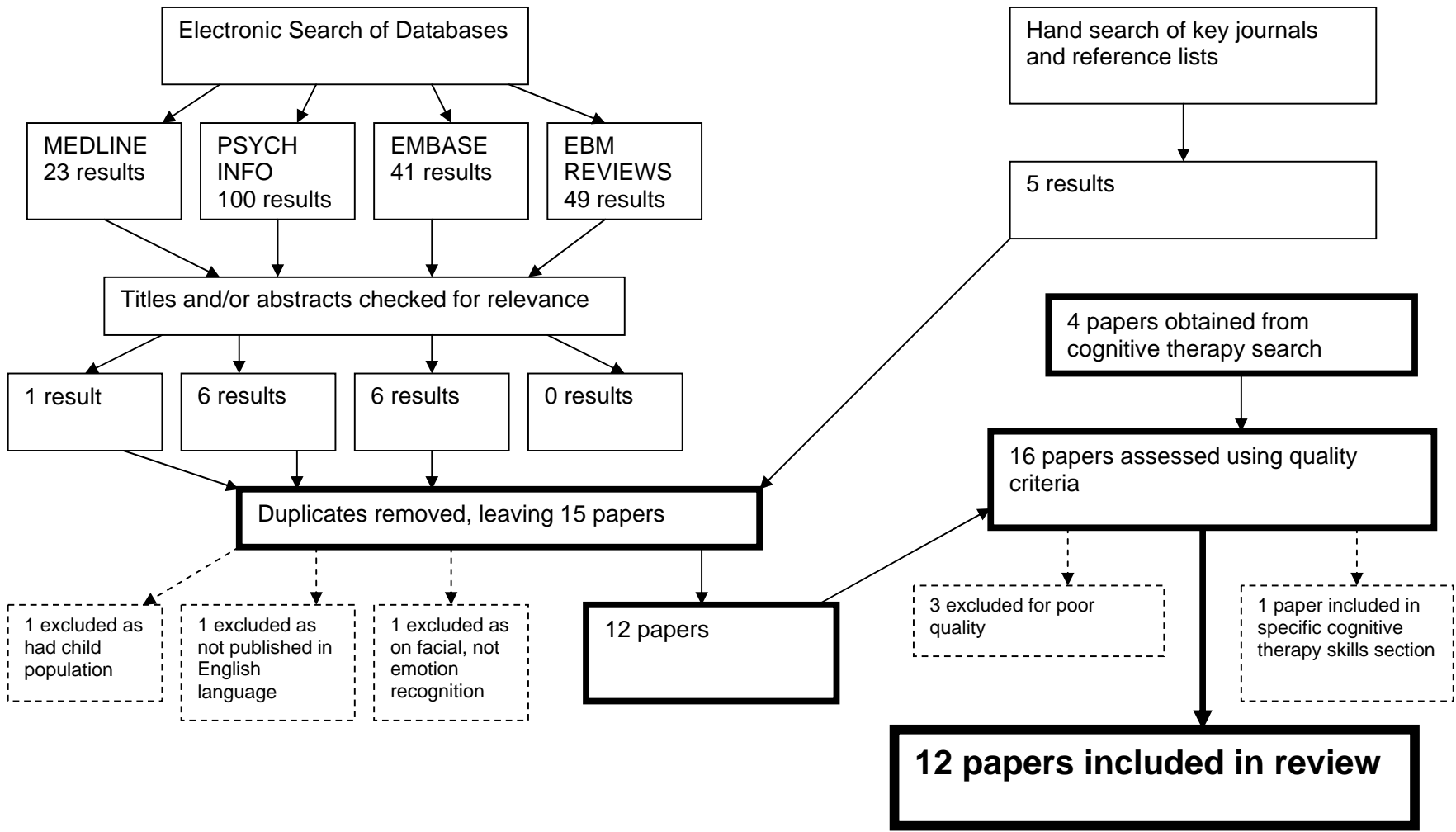
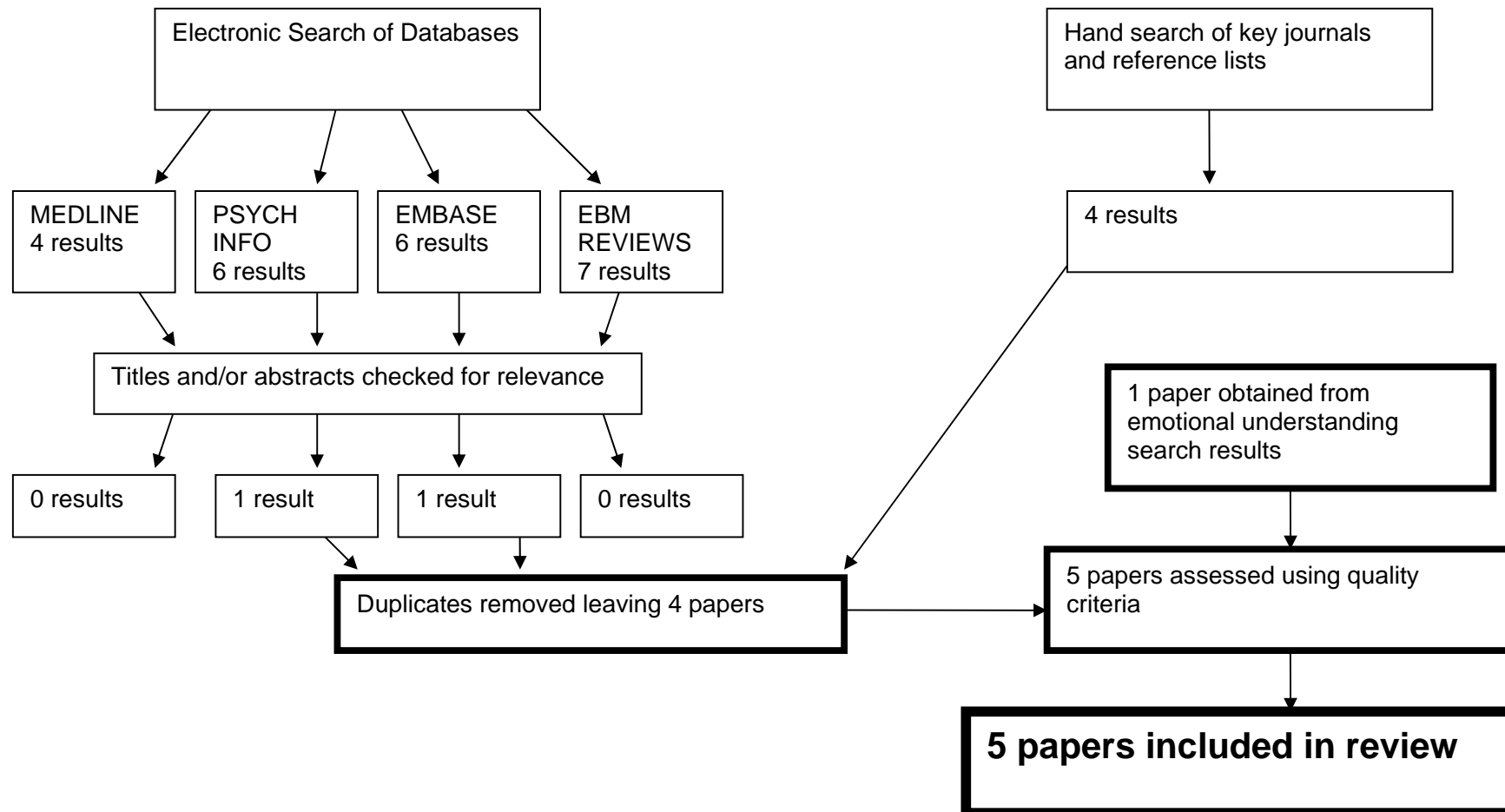


Figure 2: Flowchart of search strategy and results for papers on specific cognitive therapy skills



MAJOR RESEARCH PROJECT

Title: Talking about real life events: an investigation of the ability of people with intellectual disabilities to make links between their beliefs and emotions within dialogue

Running Title: Talking about real life events

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To be submitted to: *Journal of Applied Research in Intellectual Disabilities* (see Appendix A).

## **Abstract**

### **Background**

This study explores whether people with intellectual disabilities make links between events, beliefs and emotions in dialogues about real life, emotive events.

### **Methods**

A cognitive-emotive interview was used to assist nineteen adults with intellectual disabilities and nineteen adults without disabilities in generating an account of an emotive, interpersonal event. Participants also completed a cognitive mediation task and an assessment of intellectual and verbal ability.

### **Results**

Participants with intellectual disabilities generated fewer beliefs within their dialogues than those without disabilities and were less likely to provide alternative perspectives on events. The ability to make links between events, beliefs and emotions within a dialogue was not associated with performance on a cognitive mediation task, or with general or verbal IQ.

### **Conclusions**

Participants with intellectual disabilities had more difficulty than those without disabilities in making links between events, beliefs and emotions. Within a therapeutic context, they are likely to require assistance to reflect on events and consider alternative interpretations, which take into account individual and environmental factors.

## Introduction

Several recent studies have explored whether people with intellectual disabilities have the skills to undertake cognitive therapy based on a cognitive distortion model. This approach asserts that it is the individual's beliefs (B) about an activating event (A), which mediate their emotional and behavioural responses (C). The use of this model represents a departure from earlier work with this population, which hypothesised that disturbed behaviour and emotions are a result of cognitive deficits and focussed on the teaching of self-instructional strategies to compensate for these deficits (Willner, 2005). However, a key question is whether people with intellectual disabilities have the cognitive capacity to make the links necessary for therapy based on a cognitive distortion model.

Dagnan and Chadwick (1997) proposed that, in order to benefit from cognitive therapy, people with intellectual disabilities should be able to recognise the link between an event, their emotions and associated beliefs. For example, knowing that you feel sad because a friend ignored you would be an example of linking an event with an emotion. However, interpreting that scenario as meaning that the friend doesn't like you and feeling sad as a result of this thought, is an example of linking a belief about an event to an emotion. Beliefs about events can be inferential, in other words an interpretation of what happened or may have happened, or evaluative, in which a judgement is made about the positive or negative implications of the event for those involved (Trower et al., 1988). Dagnan et al. (2000) examined the ability of people with intellectual disabilities

to identify emotions and link them to both an event and an evaluative belief about the event. They found that participants had greater difficulty on a cognitive mediation task, which involved linking the emotion to a belief about the event (ABC link), compared to a task that required linking only the event and emotion (AC link). Results also showed a significant association between receptive language ability and performance on some of the tasks.

Other studies (Joyce et al., 2006, Oathamshaw & Haddock, 2006) which have used the same measures have reported similar findings to Dagnan et al. (2000). In a paper currently in press, Dagnan and his colleagues (2009) argue that the cognitive mediation task used to assess ABC links in his earlier study was too demanding for people with intellectual disabilities. For clinical purposes, they suggest using an earlier, more open-ended version of the task, developed by Dagnan and Chadwick (1997), which examines these links using inferential beliefs.

There has, however, been no research about an individual's ability to link emotions with inferential or evaluative beliefs when talking about real life events. The cognitive mediation tasks involve responses to hypothetical, rather than real life situations, and it is not clear how much they relate to what is required of individuals during cognitive therapy. Indeed, a recent paper by Taylor et al. (2008) argued that poor performance on an experimental task may not necessarily translate into an inability to engage with the cognitive aspects of therapy within a clinical context. However, there is no evidence

about whether people with intellectual disabilities naturally make ABC links within their narratives about emotive events.

When talking about such events, people often provide accounts for the benefit of others and therefore most narratives occur within dialogue. In the case of children, the literature reports that narratives are not solely constructed by the individual and it is more likely that their development is ‘scaffolded’ by a caregiver (Wahler & Castlebury, 2002). The concept of ‘scaffolding’ originates from the work of Vygotsky and Bruner, and refers to the ways in which an adult or more knowledgeable peer can assist a child to develop new skills (Smith et al., 1998). Although there are difficulties in generalising developmental literature to adults with intellectual disabilities, the findings suggest that this population may also benefit from being encouraged and assisted to talk about everyday events.

The present study aimed to investigate how adults with mild to moderate intellectual disabilities talk about emotive, real life experiences and whether they make links between events (A), beliefs (B) and emotions (C) within their narratives. The research considered whether the ability to make these ABC links within a dialogue was associated with performance on a cognitive mediation task and with general intellectual and verbal ability. The design incorporated a group comparison with similar aged non-disabled individuals and allowed for both quantitative analysis and for qualitative analysis of the content of the dialogues.

The following hypotheses were tested:

- 1) People with intellectual disabilities will have more difficulty than people without intellectual disabilities in making links between events, beliefs and emotions, both within a dialogue about a real life event and on a cognitive mediation task.
- 2) The ability to make links between events, beliefs and emotions within a dialogue will be associated with performance on a cognitive mediation task for people with and without intellectual disabilities.
- 3) Performance on the above tasks will be associated with general IQ scores and verbal ability.

## **Methods**

### **Participants**

Twenty seven adults with mild to moderate intellectual disabilities and twenty two adults without intellectual disabilities took part in the study, however, data from eleven of these participants were excluded from the analysis. This was because six participants with intellectual disabilities and three participants from the control group were unable to report an emotive, real life event. Furthermore, two participants in the intellectually disabled group obtained general IQ scores within the low average or average range of cognitive functioning and were excluded for this reason, as it was not clear whether they had an intellectual disability. Data for analysis were therefore obtained from nineteen participants with intellectual disabilities (11 female, 8 male, mean age 42 years, SD



10.96) and nineteen participants without intellectual disabilities (12 female, 7 male, mean age 43 years, SD 11.37).

Participants who were included in the study all met the following criteria: i) were adults aged 18 to 65 years, ii) had sufficient expressive and receptive language skills to describe everyday events, iii) were fluent English speakers, iv) did not have a degree of sensory impairment which would have affected their ability to complete the research tasks and v) did not have an Autistic Spectrum Disorder, as social cognitive deficits associated with this disorder may have resulted in difficulties with the research tasks for participants.

Participants with intellectual disabilities all lived in the community and attended day centres within the West of Scotland. For this group of participants, the researcher asked managers and key workers at their day centre to identify individuals who had sufficient expressive and receptive language skills to describe everyday events. The following items from the Adaptive Behaviour Scale (ABS-RC:2) (Nihira, Leland & Lambert, 1993) were used to assist this process: i) talks to others about sports, family, group activities etc., ii) sometimes uses complex sentences containing 'because', 'but' etc., iii) answers simple questions such as 'What is your name?' or 'What are you doing?'.

Participants without intellectual disabilities were staff at day centres and students and staff at a college in the West of Scotland. A flow chart of recruitment into the study can be found in Appendix B. Demographic information is displayed in Table 2 and shows that the two groups were similar in terms of gender, age and socio-economic

background. Ethical approval for the research was obtained from the West of Scotland Research Ethics Service, as detailed in Appendix M.

## **Measures**

The following measures were used:

- 1) Background Information Sheet (Appendix C). This collected background demographic information on gender, age and postcode. The Carstairs Index was used to obtain a deprivation score based on postcode (McLoone, 2004) and this was used as an indication of socio-economic status.
  
- 2) Cognitive-Emotive Interview (based on the Cognitive-Emotive Behavioural Assessment (CEBA) Interview, Trower et al., 1988) (Appendix D). This measure assessed the participant's ability to make links between events, beliefs and emotions within a dialogue about a real life event. The interview involved asking participants to describe a real life interpersonal conflict, which still had an emotional resonance for the individual. The researcher tried to get the participant to focus on the emotion while facilitating a dialogue about beliefs associated with the event. The interview generated data on the participant's ability to describe: 1) the event, 2) their emotional reactions to the event, 3) their inferential beliefs about what happened or may have happened, and their evaluative beliefs about the situation, including 4) other to self evaluations (how

the participant felt they were being treated by the other person involved in the situation), 5) self to self evaluations (whether or not they felt such treatment was justified) and 6) self to other evaluations (how they viewed the other person involved in the situation). The number of prompts required to obtain these items was also recorded. The interview was piloted with four individuals, in order to develop the coding and scoring system shown in Table 1. Participants could obtain a maximum score of twelve. In addition to the total score, participants received a score out of eight, which represented their ability to make interpretations of the event in terms of inferential and evaluative beliefs. This was calculated by totalling their scores on the beliefs sections of the interview and was designed to be a more similar measure of the skills assessed by the cognitive mediation task. Further information on the pilot phase of the study and the development of the coding system can be found in Appendix E.

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INSERT TABLE 1 ABOUT HERE

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3) Cognitive Mediation Task (Dagnan & Chadwick, 1997) (Appendices F & G).

This measure assessed the participant's ability to make links between events, beliefs and emotions on a more formal task. The task contains six items which each describe a hypothetical event and an associated feeling of happiness or sadness. The six items were repeated twice, with a different emotion each time.

The order in which the emotions were presented was counterbalanced. For each item, the participant is asked to identify a congruent thought. For example, item one reads 'You are in bed one night and you hear a loud noise downstairs. You feel happy. What would you be thinking or saying to yourself?' An example of an accurate response would be 'Might be dad shouting me for breakfast' (Dagnan et al., 2009). Participants could obtain a maximum score of twelve.

- 4) Wechsler Abbreviated Scale of Intelligence (WASI) (The Psychological Corporation, 1999). The two subtest form of the WASI was used to provide an estimate of Full Scale IQ. A measure of Verbal IQ was also obtained from the WASI. Psychometric properties include a high level of internal consistency (0.92-0.98), adequate test-retest reliability (0.87-0.92) and good concurrent validity (0.87).

## **Procedure**

Informed consent was obtained using a patient information sheet and consent form, including a version adapted for people with intellectual disabilities (Appendices H, I, J & K). The measures were administered over one or two sessions, as decided by the participant, at their day centre or college. Time was spent with participants at the beginning of the session to promote engagement in the research and make sure that they felt at ease. Efforts were made to ensure that the interview produced as natural a dialogue as possible, with the researcher prompting the participant only when necessary

to elicit key information. The interviews were recorded and transcribed by the researcher. The order of presentation of the cognitive-emotive interview and the cognitive mediation task was randomised to control for order effects. The WASI was administered last, as this is a more formal measure, on which participants can get a sense of having performed correctly or incorrectly.

### **Power**

This was an exploratory study and there were no related studies that had used a between groups design. An attempt was therefore made to calculate the sample size required to obtain statistically significant results for the within group comparison of scores on the cognitive-emotive interview and the cognitive mediation task. A previous study found a moderate to large effect size for the association between a response category on the cognitive mediation task and the Reed and Clements' (1989) assessment of emotional understanding, which is another approach to examining links between events and emotions. If a similar effect size were to be found in the present study, it was estimated that 21 participants per group would be required to detect a significant correlation between scores on the cognitive mediation task and the cognitive-emotive interview. This was based on an alpha level of .05 and power of 0.8 (one tailed).

## **Results**

The first section of the results provides descriptive data on participant characteristics and the mean scores obtained from the measures. The following section presents the qualitative cognitive-emotive interview data. A content analysis of the interview data was completed, following the method described by Donovan and Sanders (2005). This involved categorising the nature of descriptions given, in terms of events, emotions and beliefs. The final section of the results addresses the research hypotheses and presents the between and within group analyses for the cognitive-emotive interview and the cognitive mediation task.

The Kolmogorov-Smirnoff test was used to assess the distribution of the data. The cognitive mediation task scores in both groups and IQ scores in the non intellectually disabled group were normally distributed, however the cognitive-emotive interview scores in both groups and the IQ scores in the intellectually disabled group were not normally distributed. Consequently both parametric and non parametric statistics were used in the analyses. Due to the small sample sizes and the exploratory nature of the study, more conservative two-tailed tests were chosen. Examination of the data also indicated that there were outliers in some of the data sets. Statistical analyses were repeated with these scores excluded, however, this made no difference to the significance of the findings and therefore the original analyses are reported.

### **Descriptive Analysis of Participant Characteristics and the Measures used**

Table 2 provides a summary of participant characteristics and demographic information. Statistical analyses were used to establish the significance of any differences between groups. A Chi-Square Test found that the association between group and gender was not statistically significant ( $\chi^2=0.11$ ,  $df=1$ ,  $p=0.74$ ). In other words, there was no significant difference in the balance of males and females between groups. An Independent Samples T-test showed no significant difference between the age of participants with intellectual disabilities and those without disabilities ( $T=-0.41$ ,  $df=36$ ,  $p=0.69$ ). As the data for deprivation scores were not normally distributed, a Mann-Whitney test was used to compare differences in socio-economic background for the two groups. Results were non significant ( $U=166$ ,  $df=38$ ,  $p=0.66$ ).

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INSERT TABLE 2 ABOUT HERE

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Descriptive data on the scores obtained on each of the measures are shown in Table 3. There was missing data from one participant in the control group, as it was not possible to arrange a second appointment to complete the remaining measures within the period of data collection. The data shows that participants without intellectual disabilities obtained higher mean scores on all measures than those with intellectual disabilities. In

addition, there was more variation in the scores obtained by participants with intellectual disabilities for the cognitive-emotive interview and for the cognitive mediation task.

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INSERT TABLE 3 ABOUT HERE

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### **Reliability.**

Inter-rater reliability analyses using the Kappa statistic were performed to determine consistency among two raters for scoring of the cognitive-emotive interview and the cognitive mediation task. The two independent raters were the author of this paper and the author's research supervisor, Professor Andrew Jahoda, who has extensive research experience in this field. The inter-rater reliability for the scoring of the cognitive-emotive interview was found to be  $Kappa = 0.90$ . For the cognitive mediation task, reliability was  $Kappa = 0.86$ . Disagreements were resolved through discussion. To ensure robustness of the content analysis categories, a second rater also independently coded the qualitative interview data. The level of agreement between the raters was 80%, which was achieved with no prior discussion about the categories.



## **Qualitative Analysis of Cognitive-Emotive Interview Data**

### **i) Events.**

The types of real life events raised by participants are shown in Table 4. Participants without intellectual disabilities were more likely to raise events associated with work colleagues, family and partners than people with intellectual disabilities. A difference between groups was also seen in relation to issues of bullying, with five of the intellectually disabled group and none of the non disabled group discussing this topic. Furthermore, it was observed during the interview process that participants with intellectual disabilities needed more prompting to describe the event.

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INSERT TABLE 4 ABOUT HERE

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### **ii) Emotions.**

Table 5 shows that the emotions described by the two groups in relation to the event were similar. The majority of participants felt anger or annoyance, with many also experiencing sadness.

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INSERT TABLE 5 ABOUT HERE

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**iii) Inferential Beliefs.**

There were differences between the two groups in the ability to generate inferences about real life events, with six participants with intellectual disabilities being unable to state an inferential belief. In contrast, all participants in the control group gave a congruent belief and many made several different inferences relating to the event. There were also differences in the content of beliefs given by the two groups, as shown in Table 6. Participants with intellectual disabilities were more likely to make an inference about not being able to cope with the situation:

*'I'm thinking I can't deal with this myself, I'll need to tell the staff.'*

*'I can't handle this anymore.'*

Participants without intellectual disabilities were more likely than those with disabilities to state a belief about the other person's behaviour in the situation:

*'Everything seemed to be about them...they tried to hijack the funeral for their benefit.'*

*'I knew it was his influence...and not her choice.'*

Participants without intellectual disabilities were also more likely to state a belief about the potentially negative consequences of the event:

*'Now I just get angry at what could have been... Those two wee innocents could have been killed.'*

*'I thought if I hadn't asked, he was going to go ahead and do it, he could have left me [with a serious medical condition].'*

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INSERT TABLE 6 ABOUT HERE

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**iv) Evaluative beliefs about the other person's treatment of them (Other to Self evaluations).**

As with inferences about the event, the intellectually disabled group found it more difficult to generate evaluative beliefs than the control group. However, as shown in Table 7, the content of their beliefs about the other person's behaviour towards them was similar, with both groups making strong judgements about how they were being treated:

*'Just like a nobody...she's treating me like I'm just a bit of chewing gum. Like I'm a bit of dog muck.'* (participant with intellectual disabilities)

*'Like a piece of shit she wouldnae walk on.'* (participant without intellectual disabilities)

In addition to providing an evaluation of how the other person was treating them, participants in the control group often reflected on why the other person may have been behaving in the way they did:

*'It might just be an expression of how they're actually feeling at that time.'*

*'The more I think about it, the more sorry I feel for him, ...because he's obviously in a position in his life, ...that that's the norm, ...and anybody could be brought up like that.'*

None of the participants with intellectual disabilities offered an explanation for the other person's behaviour.

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INSERT TABLE 7 ABOUT HERE

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**v) Evaluative beliefs about whether the other person's treatment of them was justified (Self to Self evaluations).**

Table 8 shows that the majority of participants in both groups were able to state whether they thought the other person's behaviour towards them was right or wrong, however fewer participants with intellectual disabilities were able state a reason why this was the case:

*'They shouldnae be [treating you like dirt]. They should accept the way we are...because how would they like it if they had a disability. And I was normal, how would they like it if I made fun of them?'* (participant with intellectual disabilities)

*'Because..we all have our own rights...nobody has the right to tell you that's what you're going to do.'* (participant without intellectual disabilities)

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INSERT TABLE 8 ABOUT HERE

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**vi) Evaluative beliefs about the other person (Self to Other evaluations).**

As shown in Table 9, almost all the participants with intellectual disabilities and all of those without were able to give an evaluation of the other person. Both groups produced strong negative evaluations:

*'I'd call them animals.'* (participant with intellectual disabilities)

*'These maniacs...there aren't words to describe them.'* (participant without intellectual disabilities)

However, participants without intellectual disabilities were also more likely than those with disabilities to reflect back on the event and give a subtler evaluation of the other person's character:

*'I think they're very narrow minded.'*

*'I think she's insecure...Deep down she's a nice person.'*

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INSERT TABLE 9 ABOUT HERE

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**vii) Prompts required.**

Table 10 shows that considerably more participants in the non intellectually disabled group raised beliefs and evaluations naturally, as part of the dialogue, rather than in response to specific prompts from the researcher.

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INSERT TABLE 10 ABOUT HERE

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### **Quantitative Analysis**

**i) Between group comparisons of the ability to make links between events, beliefs and emotions, within a dialogue about a real life event and on a cognitive mediation task (Hypothesis 1).**

#### ***Cognitive-Emotive Interview.***

A Mann Whitney test comparing total scores on the cognitive-emotive interview indicated a significant difference between groups ( $U=49$ ,  $df=38$ ,  $p<0.001$ ), with participants without intellectual disabilities achieving higher scores (Mean Rank=26.42) than those with disabilities (Mean Rank=12.58). The same statistical analysis was carried out using the score from the beliefs section score of the cognitive-emotive interview. A significant difference was found between the two groups ( $U=54$ ,  $df=38$ ,  $p<0.001$ ) with participants without intellectual disabilities obtaining higher scores (Mean Rank=26.16) than those with disabilities (Mean Rank=12.84).

#### ***Cognitive mediation task.***

Results of an Independent Samples T-test indicated a significant difference in performance on the cognitive mediation task ( $T=-5.99$ ,  $df=35$ ,  $p<0.001$ ) with participants without intellectual disabilities achieving greater scores (Mean=8.94) compared to those with disabilities (Mean=4.05).

**ii) Within group analyses of the association between the ability to make links between events, beliefs and emotions within a dialogue about a real life event and on a cognitive mediation task (Hypothesis 2).**

A Spearman Rank Correlation indicated no significant association between total score on the cognitive-emotive interview and score on the cognitive mediation task for the intellectually disabled group ( $r=0.15$ ,  $df=19$ ,  $p=0.53$ ). The association between the beliefs section score from the cognitive-emotive interview and the score for the cognitive mediation task was also non significant for this group ( $r=0.001$ ,  $df=19$ ,  $p=1.00$ ). No significant association between the two measures was found for the non-intellectually disabled group, both when using the total score from the cognitive-emotive interview ( $r=-0.10$ ,  $df=18$ ,  $p=0.70$ ) and the beliefs section score ( $r=-0.34$ ,  $df=18$ ,  $p=0.16$ ).

**iii) Within group analyses of the association between the ability to make links between events, beliefs and emotions and intellectual and verbal ability (Hypothesis 3).**

A Spearman Rank correlation found no significant associations between total score on the cognitive-emotive interview for participants with intellectual disabilities and their IQ ( $r=-0.001$ ,  $df=19$ ,  $p=1.00$ ) or Verbal IQ score ( $r=0.17$ ,  $df=19$ ,  $p=0.48$ ). Using Spearman Rank correlations, no significant associations were found for this group between performance on the cognitive mediation task and IQ ( $r=0.24$ ,  $df=19$ ,  $p=0.32$ ) or Verbal IQ ( $r=0.26$ ,  $df=19$ ,  $p=0.29$ ). For the non intellectually disabled group, Spearman Rank correlations showed no significant associations between total score on the cognitive-

emotive interview and IQ ( $r=-0.41$ ,  $df=18$ ,  $p=0.09$ ) or Verbal IQ ( $r=-0.13$ ,  $df=18$ ,  $p=0.62$ ). A Pearson's Product Moment Correlation found no significant associations between score on the cognitive mediation task and IQ ( $r=0.46$ ,  $df=18$ ,  $p=0.06$ ) or Verbal IQ ( $r=0.29$ ,  $df=18$ ,  $p=0.25$ ). Analyses were also conducted using the beliefs section score of the interview, however, these were also found to be statistically non significant for both groups.

Post hoc analyses of the associations between performance on the research tasks and non-verbal ability were completed, using the standardised score for the Matrix Reasoning subtest of the WASI as a measure of non-verbal ability. Examination of the data for this subtest indicated that data was normally distributed in the non disabled group and not normally distributed for the intellectual disability group. Using Spearman Rank correlations, there were no significant associations for the intellectually disabled group between non-verbal ability and the total score on the cognitive-emotive interview ( $r=0.01$ ,  $df=19$ ,  $p=0.96$ ), the beliefs section score on the interview ( $r=0.01$ ,  $df=19$ ,  $p=0.99$ ) and the cognitive mediation task ( $r=0.22$ ,  $df=19$ ,  $p=0.37$ ). For the control group, Spearman Rank correlations indicated no significant associations between non-verbal ability and both the total score on the cognitive-emotive interview ( $r=-0.31$ ,  $df=18$ ,  $p=0.21$ ) and the beliefs section score on the interview ( $r=-0.40$ ,  $df=18$ ,  $p=0.10$ ). A Pearson's Product Moment Correlation also found no significant association between scores on the cognitive mediation task and non-verbal ability for this group ( $r=0.41$ ,  $df=18$ ,  $p=0.09$ ).



## Discussion

The results of the study support the first hypothesis, that people with intellectual disabilities have more difficulty than people without intellectual disabilities in making links between events, beliefs and emotions. This was the case both within the dialogue about a real life event and on the cognitive mediation task. However, the descriptive and content analysis of the interviews indicated a number of similarities and differences between the groups in how they described real life events and associated beliefs. There was little difference between the groups in the types of emotions experienced and participants with intellectual disabilities were generally good at identifying their emotions. However, in terms of their cognitions, participants with intellectual disabilities generated fewer beliefs than those in the control group, both naturally and in response to prompts from the researcher. In addition, the content of the inferential and evaluative beliefs was different between groups. Although both groups produced strong beliefs about the implications of the event for themselves and others, the participants without intellectual disabilities were much more reflective in their narratives. They were able to give subtler accounts of what happened, describing their own view of the situation, but also taking account of environmental factors and the beliefs and motivations of other people. On the other hand, participants with intellectual disabilities were more likely to remain focussed on their own perspective and their emotional distress.

With regard to the second hypothesis, the prediction that the ability to make ABC links within a dialogue would be associated with performance on a cognitive mediation task, was not supported for either group. It is difficult to draw firm conclusions from this finding, due to the small sample size in the current study and inconsistencies in the results, with some negative correlations being obtained. However, the lack of significant associations may also be due to differences in the nature of the skills accessed by the two measures. Although both measures assessed ABC links, it can be argued that the cognitive mediation task required a more explicit understanding of the link between beliefs and emotions. Half of the scenarios were presented with an incongruent emotion, requiring the individual to explicitly adjust their cognitive response to provide a suitable mediating link. This skill may not relate to the intuitive, natural understanding that people have about interpersonal events and their associated emotions. Furthermore, participants with intellectual disabilities were able to benefit from the assistance and prompts provided by the researcher during the interview and they generally performed better within this collaborative context, than on the cognitive mediation task. This is consistent with theories and findings from the developmental literature, which report that the production of narrative can be assisted by others (Wahler & Castlebury, 2002).

No significant associations were found between performance on the measures and general intellectual or verbal ability for either group, indicating no support for the third hypothesis. This is in contrast to previous research findings, which have reported associations between scores on cognitive therapy tasks and general IQ (Sams et al., 2006) and verbal ability (Dagnan et al., 2000, Joyce et al., 2006, Oathamshaw &

Haddock, 2006, Sams et al., 2006). However, although no significant findings were obtained in the current study, the effect sizes did indicate a closer association of general intellectual, verbal and non-verbal abilities with performance on the cognitive mediation task, than with scores from the interview. A previous study reported an effect size of 0.33 for the association between verbal ability and performance on the cognitive mediation task (Dagnan et al., 2009). Although a different measure of verbal ability was used in the current study, the obtained correlation of 0.26 is broadly consistent with Dagnan et al.'s finding, and the difference in significance may be explained by the smaller sample size in the present study.

The inconsistent findings for both groups concerning the association between interview scores and performance on IQ tests may in part be due to the methodological limitations of the current study. However, it could also be the case that the intuitive ABC links that people make within dialogues are not related to formal levels of intellectual functioning and that other factors, such as interpersonal skills and the experience of telling narratives, are more important for this ability. Indeed, in studies on cognitive therapy with people with intellectual disabilities, IQ and verbal ability on their own have not been reliable predictors of therapeutic outcome (Taylor et al., 2008).

Furthermore, the different task demands of the interview and the cognitive mediation task may have contributed to both the lack of association between the two measures and also to the closer link between the cognitive mediation task and formal IQ scores. It is likely that the cognitive mediation task placed higher demands on information-

processing capacities. Individuals are required to understand and hold in mind several pieces of verbal information, relating to a hypothetical scenario. In clinical practice, it has been observed that people with intellectual disabilities benefit from the use of concrete examples within cognitive therapy and find more abstract information difficult (Haddock & Jones, 2006). Although the task items were designed to be relevant to people with intellectual disabilities, the use of hypothetical events as stimuli may be too demanding for some individuals.

### **Clinical implications**

Recent clinical consensus has indicated that individuals with intellectual disabilities must be able to express their emotions if they are to benefit from cognitive therapy (Haddock & Jones, 2006). In this respect the results of the current study were positive, as participants were generally good at describing their emotions. However, analysis of the dialogues suggested that people with intellectual disabilities will need considerable prompts from therapists to enable them to tell their story and, in particular, to generate beliefs. Furthermore, they will require particular support within therapy to assist them to reflect on events and consider alternative perspectives, which incorporate the environmental aspects of the situation and the beliefs of other people. Within the literature on cognitive therapy, there has been disagreement amongst experienced clinicians on how to access emotions and cognitions in this population (Haddock & Jones, 2006), however the present study has shown that the cognitive-emotive interview

can be an effective method of eliciting both emotions and, in many cases, inferential and evaluative beliefs, in people with intellectual disabilities.

### **Limitations of the study**

There were several methodological limitations with the present study, which must be taken into account when interpreting its findings. As stated earlier, data from a number of participants had to be excluded and the study was underpowered. The effect size, on which the initial power calculation was based, was not found in the current study and future research using these measures would need a larger number of participants. The use of the cognitive-emotive interview for the purpose of assessing ABC links was novel within the literature and a new coding and scoring system had to be developed.

Although good inter-rater reliability was obtained, the robustness of the coding system has not been established. Furthermore, the interview focussed on a particular type of event, that of interpersonal conflict. This was chosen as it was likely to elicit emotive responses from individuals and because an established interview format focussing on interpersonal conflict had been shown to be effective with an intellectual disability population (Jahoda et al., 1998). However, the findings may not be applicable to all real life events and it may have made comparison with the cognitive mediation task more difficult, as not all the scenarios in the cognitive mediation task had an interpersonal content.

As the two subtest form of the WASI was used, it was not possible to analyse Verbal IQ and Performance IQ separately. However, this proved to be a disadvantage, as it prevented a proper analysis of the associations between Performance IQ and the cognitive mediation task. The results of post hoc analyses using one of the Performance IQ subtests indicated that effect sizes for the association between non-verbal ability and the cognitive mediation task were similar to those for verbal ability. Hence a closer examination of the association between Performance IQ and scores on the cognitive mediation task could have opened up other explanations for the participants' difficulties with this task.

Furthermore, the present study did not provide a detailed analysis of the researcher's role in the dialogue. It was not possible to do this within the scope of the current study, however, this may have provided further information on how clinicians can facilitate and encourage dialogues about real life events, emotions and beliefs with people with intellectual disabilities. Another limitation was the nature of the samples studied. Although attempts were made to ensure the groups were similar in age, gender and socio-economic status, the majority of participants for the control group were recruited from day centres, and may therefore not be fully representative of the general population. Furthermore, the groups were not recruited from clinical populations and it is not clear how the nature of dialogue and the ability to make ABC links differs in those with significant mental health problems.

## Conclusions

In terms of cognitive therapy with people with intellectual disabilities, the findings suggest that many individuals will need considerable assistance from therapists in generating beliefs and in producing alternative perspectives, which incorporate a range of personal and environmental factors. The present study also indicates that the cognitive-emotive interview may be an effective way of accessing emotions and beliefs in therapeutic interactions with people with intellectual disabilities. Methodological limitations of the current study prevented clear conclusions being drawn about the associations between the ability to make links between emotions and beliefs within dialogue, performance on a cognitive mediation task and general and verbal IQ. However, future research should consider how the ability to make these intuitive ABC links in dialogue, and the ability to make more explicit links on a cognitive mediation task, relate to positive cognitive therapy outcomes. It would also be interesting to examine the prompts and reflections used by researchers and clinicians in conducting cognitive therapy assessments and interventions with people with intellectual disabilities. Indeed, positive therapy outcomes in this population are likely to be associated with therapist skill and with adapting the process and techniques of therapy. Analysis of the therapist role would provide further insights into how cognitive therapy can be adapted for people with intellectual disabilities.

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Table 1: Coding and Scoring System for Cognitive-Emotive Interview

Category	Scoring criteria	Score
<b>Event</b>	Participant is able to think of a recent, real life interpersonal event, which is described as the narrative unfolds.	2
Is the participant able to describe a real life event?	Participant is able to think of and describe a real life interpersonal event, however needs prompts to do so. For example, the first event they describe is not a real life, interpersonal event, or they talk about something irrelevant but are later able to describe a relevant event after prompting.	1
	Participant is unable to describe a recent, real life interpersonal event.	0
<b>Emotion</b>	Participant uses words to describe an emotional state e.g. sad, angry, frustrated (or colloquial equivalents e.g. bugging), which are related to the event. 0-1 prompts needed.	2
Is the participant able to describe their emotional reaction to the event?	Participant uses words to describe an emotional state e.g. sad, angry, frustrated (or colloquial equivalents e.g. bugging), which are related to the event. 2 or more prompts needed.	1
	Participant is unable to describe an emotional reaction to the event.	0
<b>Inferential Belief<sup>1</sup></b>	Participant states an inferential belief about what happened or may have happened, which is related to the event described earlier and is congruent with the emotion given. 0-1 prompts needed.	2
Is the participant able to describe a belief about what happened or may have happened?	Participant states an inferential belief about what happened or may have happened, which is related to the event described earlier and is congruent with the emotion given. 2 or more prompts needed.	1
	Participant is unable to state an inferential belief, that is congruent with the emotion given.	0

Category	Scoring criteria	Score
<b>Other to Self Evaluation<sup>1</sup></b>	Participant describes an evaluation of how the other person is treating them, that is congruent with the emotion given. 0-1 prompts needed.	2
Is the participant able to give an evaluation about the other person's treatment of them?	Participant describes an evaluation of how the other person is treating them, that is congruent with the emotion given. 2 or more prompts needed.	1
	Participant is unable to describe an evaluation of how the other person is treating them, that is congruent with the emotion given.	0
<b>Self to Self Evaluation<sup>1</sup></b>	Participant describes an evaluation of how much they endorse the way the other person is treating them (e.g. whether the other person is right or wrong to treat them in this way and why), that is congruent with the emotion given. The answer given must contain a reason why the person is right/wrong and not be a categorical yes/no answer. 0 prompts needed.	2
Is the participant able to give an evaluation about whether or not the other person's treatment of them was justified?	Participant describes an evaluation of how much they endorse the way the other person is treating them, that is congruent with the emotion given. The answer given must contain a reason why the person is right or wrong and not be a categorical yes/no answer. 1 prompt needed.	1
	Participant does not describe an evaluation of how much they endorse the way the other person is treating them, that is congruent with the emotion stated or participant gives a categorical yes/no answer following a prompt, but does not explain why the person is right or wrong.	0
<b>Self to Other Evaluation<sup>1</sup></b>	Participant describes an evaluation of the other person that is congruent with the emotion given (i.e. what kind of a person he or she must be to treat someone like this). 0-1 prompts needed.	2
Is the participant able to give an evaluation of the other person?	Participant describes an evaluation of the other person that is congruent with the emotion given (e.g. what kind of a person he or she must be to treat someone like this). 2 or more prompts needed.	1
	Participant is unable to describe an evaluation of the other person (e.g. what kind of a person he or she must be to treat someone like this) that is congruent with the emotion given.	0

<sup>1</sup> Categories included in Beliefs Section score

Table 2: Participant Demographic Information

<b>Participant Characteristic</b>		<b>ID Group</b>	<b>Non ID Group</b>
<b>Gender (frequency)</b>	Male	8	7
	Female	11	12
<b>Age (years)</b>	Mean	41.74	43.21
	Range	21-62	19-61
	SD	10.96	11.37
<b>Deprivation Score</b>	Mean	4.37	4.84
	Range	1-7	3-7
	SD	2.09	1.34

Table 3: Mean Scores obtained on Research Measures

<b>Measure</b>		<b>ID Group (n=19)</b>	<b>Non ID Group (n=19)</b>
<b>Cognitive-Emotive Interview Total Score</b>	Mean	7.63	9.89
	Range	3-11	8-12
	SD	1.80	0.94
<b>Cognitive-Emotive Interview Beliefs Section Score</b>	Mean	4.27	6.16
	Range	0-7	5-8
	SD	1.66	0.83
<b>Cognitive Mediation Task*</b>	Mean	4.05	8.94
	Range	0-10	5-12
	SD	2.88	1.98
<b>WASI IQ*</b>	Mean	60.11	95.44
	Range	55-76	73-118
	SD	6.22	12.16
<b>WASI Verbal IQ*</b>	Mean	58.47	90.56
	Range	55-70	74-112
	SD	4.10	10.42

\*n=18 for Non ID group due to missing data from one participant

Table 4: Type and Frequency of Real Life Events described by Participants in Cognitive-Emotive Interviews

<b>Type of Event</b>		<b>ID Group (n=19)</b>	<b>Non ID Group (n=19)</b>
<b>Relationship issues involving</b>	<b>Partner</b>	1	3
	<b>Family</b>	1	4
	<b>Friends</b>	2	1
<b>Work related issues involving colleagues/management</b>		0	5
<b>Bullying</b>		5	0
<b>Being a victim of crime</b>		2	3
<b>Issues with staff members/professionals</b>		4	1
<b>Issues with other service users</b>		4	0
<b>Other</b>		0	2

Table 5: Type and Frequency of Emotions described by Participants in Cognitive-Emotive Interviews

<b>Type of Emotion</b>	<b>ID Group (n=19)</b>	<b>Non ID Group (n=19)</b>
<b>Angry/Annoyed</b>	14	17
<b>Sad/Upset</b>	10	8
<b>Frustrated/Irritated</b>	3	5
<b>Frightened</b>	2	1
<b>Embarrassed</b>	1	1
<b>Anxious</b>	1	1
<b>Disgusted</b>	0	2
<b>Jealous</b>	1	0



Table 6: Type and Frequency of Inferential Beliefs described by Participants in Cognitive-Emotive Interviews

<b>Type of Inferential Belief</b>	<b>ID Group (n=13)</b>	<b>Non ID Group (n=19)</b>
<b>Belief about other person's behaviour in the situation</b>	5	15
<b>Not being able to cope</b>	6	0
<b>Potential negative consequences of event</b>	0	5
<b>Questioning why it happened</b>	1	4
<b>Not being liked/Not being good enough</b>	4	3
<b>Part they played in the event</b>	1	3
<b>Other</b>	4	7

Table 7: Type and Frequency of Other to Self Evaluations described by Participants in Cognitive-Emotive Interviews

<b>Type of O-S Evaluation</b>	<b>ID Group (n=11)</b>	<b>Non ID Group (n=18)</b>
<b>Like dirt/a nobody/not human</b>	3	4
<b>Badly</b>	3	3
<b>As an inferior/unimportant person</b>	0	5
<b>Disrespectfully</b>	3	0
<b>Inconsiderately</b>	1	2
<b>Being bullied</b>	2	0
<b>Unfairly</b>	0	2
<b>Uncaring towards them</b>	0	2
<b>Other</b>	3	7

Table 8: Frequency of Self to Self Evaluations described by Participants in Cognitive-Emotive Interviews

	<b>ID Group (n=14)</b>	<b>Non ID Group (n=19)</b>
<b>Able to give a Yes/No categorical answer as to whether person was right to treat them in this way</b>	14	17
<b>Able to give a congruent reason why the person was right/wrong to treat them in this way</b>	8	15

Table 9: Type and Frequency of Self to Other Evaluations described by Participants in Cognitive-Emotive Interviews

Type of S-O Evaluation	ID Group (n=17)	Non ID Group (n=19)
Not a good/nice person	6	1
Bad/horrible person	5	7
Rude/cheeky	4	0
Selfish/inconsiderate	1	3
Idiot/stupid	1	3
Animal/maniac	2	1
Other	0	6

Table 10: Number of Participants stating Beliefs in Cognitive-Emotive Interviews without Prompting.

<b>Type of Belief</b>	<b>ID Group (n=19)</b>	<b>Non ID Group (n=19)</b>
<b>Inferential Belief</b>	4	19
<b>Other to Self Evaluation</b>	6	8
<b>Self to Self Evaluation</b>	2	4
<b>Self to Other Evaluation</b>	3	10

Appendix A: Requirements for submission to *Journal of Applied Research in Intellectual Disabilities*

## Journal of Applied Research in Intellectual Disabilities

[Journal of the British Institute of Learning Disabilities](#)

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### Author Guidelines

#### 1. GENERAL

The *Journal of Applied Research in Intellectual Disabilities* is an international, peer-reviewed journal which draws together findings derived from original applied research in intellectual disabilities. The journal is an important forum for the dissemination of ideas to promote valued lifestyles for people with intellectual disabilities. It reports on research from the UK and overseas by authors from all relevant professional disciplines. It is aimed at an international, multi-disciplinary readership.

The topics it covers include community living, quality of life, challenging behaviour, communication, sexuality, medication, ageing, supported employment, family issues, mental health, physical health, autism, economic issues, social networks, staff stress, staff training, epidemiology and service provision. Theoretical papers are also considered provided the implications for therapeutic action or enhancing quality of life are clear. Both quantitative and qualitative methodologies are welcomed. All original and review articles continue to undergo a rigorous, peer-refereeing process.

Please read the instructions below carefully for details on submission of manuscripts, the journal's requirements and standards as well as information concerning the procedure after a manuscript has been accepted for publication. Authors are encouraged to visit <http://authorservices.wiley.com/bauthor/> for further information on the preparation and submission of articles.

#### 2. ETHICAL GUIDELINES

The *Journal of Applied Research in Intellectual Disabilities* adheres to the below ethical guidelines for publication and research.

##### 2.1 Authorship and Acknowledgements

**Authorship:** Authors submitting a paper do so on the understanding that the manuscript has been read and approved by all authors and that all authors agree to the submission of the manuscript to the journal. ALL named authors must have made an active contribution to the

conception and design and/or analysis and interpretation of the data and/or the drafting of the paper and ALL authors must have critically reviewed its content and have approved the final version submitted for publication. Participation solely in the acquisition of funding or the collection of data does not justify authorship.

It is a requirement that all authors have been accredited as appropriate under submission of the manuscript. Contributors who do not qualify as authors should be mentioned under Acknowledgements.

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- Emerson E. (1995) *Challenging Behaviour: Analysis and Intervention in People with Learning Disabilities*. Cambridge University Press, Cambridge.
- McGill P. & Toogood A. (1993) Organising community placements. In: *Severe Learning Disabilities and Challenging Behaviours: Designing High Quality Services* (Eds E. Emerson, P. McGill & J. Mansell), pp. 232-259. Chapman and Hall, London.

-Qureshi H. & Alborz A. (1992) Epidemiology of challenging behaviour. *Mental Handicap Research* 5, 130-145

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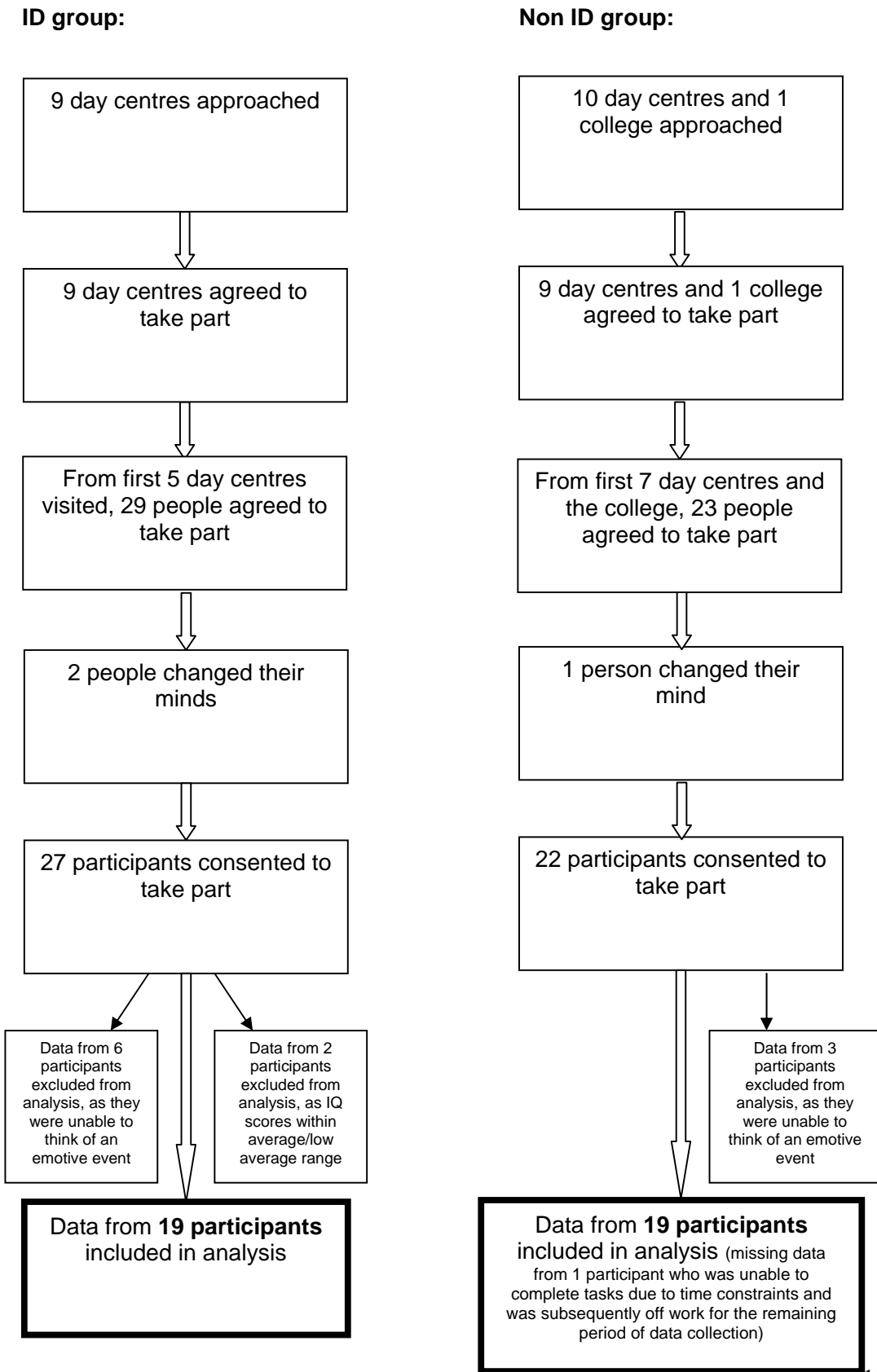
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Appendix B: Flow Chart of Recruitment into Study





## Appendix D: Cognitive-Emotive Interview

### **Cognitive-Emotive Interview**

Based on Cognitive-Emotive Behavioural Assessment (CEBA) Interview. In: Trower, P., Casey, A. & Dryden, W. (1988) *Cognitive-Behavioural Counselling in Action*. SAGE Publications, London.

#### **Guidelines for the interview**

The interview was started by getting the client to focus on an interpersonal conflict. The conflict may have been overt, where there was an argument, or covert. The interviewer helped the individual get in touch with the emotion associated with the conflict. He or she gave the individual permission to use emotive language.

The researcher asked about:

- the event.
- the emotional consequences.
- the beliefs associated with the event and emotion. Beliefs can be inferences (about what may happen or has happened) or evaluations (about how good or bad events are for the individual concerned).

#### **Key points covered and examples of questions/prompts which were used to facilitate the dialogue**

The dialogue was kept as natural as possible. Prompts were used as necessary by the researcher to elicit key information.

#### **Starting the interview**

Can you tell me about something that happened to you that involved somebody else and that still bothers you/ upsets you when you think about it.

Can you tell me about a time recently when you felt angry or upset or worried.

If the participant found it difficult to think of an event, further prompts were used:

When was the last time that you were annoyed/upset/had a row?

What/who makes you angry/upset?

Are there any other things that make you annoyed/upset?

**Getting the individual to tell the story**

What happened?

When was it/what day?

Where were you?

What were you doing?

Who was there?

How did it start?

**Eliciting the emotion**

When that was happening, how did that make you feel?

Clarify the emotion: What do you mean by \_\_\_\_\_?, Was your feeling like an anxious/worried feeling, an angry feeling, annoyed/bad tempered, a sad feeling, a down/flat/depressed feeling?

The researcher then kept the event emotionally immediate and attempted to elicit beliefs about the event.

**When the emotion had been elicited, the researcher asked about interpersonal perceptions, beginning with inferential beliefs.**

When you're feeling \_\_\_\_\_, what are you thinking? Going through head/mind?

What is it about \_\_\_\_\_ that upset you?

What makes you feel \_\_\_\_\_?

Why did you feel so \_\_\_\_\_ about \_\_\_\_\_?

What is so bad about \_\_\_\_\_?



**How they were treating you (Other to Self evaluations)**

When that happened, what are they treating you like?

What kind of person are they treating you like?

What is it about \_\_\_\_\_'s behaviour that makes you so \_\_\_\_\_?

How is he/she treating you that makes you so \_\_\_\_\_?

What did he/she think of you?

**How you feel about yourself/ how right they were (Self to Self evaluations)**

So he/she did/said \_\_\_\_\_ and that makes you feel \_\_\_\_\_. Is he/she right to do/say that/treat you like that?

Was it okay for them to do that?

How do you feel about yourself?

**What you think about them (Self to Other evaluations)**

When all that was happening, what kind of person do you think he/she is \_\_\_\_\_ (for treating you like that?)

So he/she did/said \_\_\_\_\_ and that makes you feel \_\_\_\_\_? What do you think of \_\_\_\_\_ for doing/saying \_\_\_\_\_?

Are they a nice person/not very nice?

## Appendix E: Description of Pilot Phase and Development of Coding and Scoring System for Cognitive-Emotive Interview

### **Pilot phase**

A pilot phase of the study was carried out with four individuals with intellectual disabilities. During this phase the use of the cognitive-emotive interview and other measures were piloted and a coding and scoring system for the interview was established. It had initially been proposed that the British Picture Vocabulary Scale (BPVS-II, Dunn & Dunn, 1997) would be used to provide a measure of receptive language ability. However, the length of time needed to administer this measure was greater than anticipated and the overall length of the research sessions was too long for participants. After discussion, it was agreed that the verbal IQ score from the Wechsler Abbreviated Scale of Intelligence (WASI, The Psychological Corporation, 1999) could be used as a substitute for a measure of receptive language ability, in order to reduce demands on participants.

Data from the pilot phase indicated that the cognitive-emotive interview was an effective method of facilitating a dialogue about real life events and associated emotions and beliefs. No changes to the content or administration of the interview were made following this phase and therefore the data from three participants from the pilot phase were included in the data analysis. One person had been unable to think of an emotive event and this data was excluded from analyses.

### **Development of the coding and scoring system for the cognitive-emotive interview**

The aim of the coding system was to provide a reliable means of scoring participants' abilities to describe a real life event and their associated emotions and beliefs. The coding system was structured around the key pieces of information elicited during the interview, as taken from the cognitive-emotive behavioural assessment (CEBA) interview (Trower et al., 1988). These consisted of the participant's ability to describe: 1) an event, 2) their emotional reactions to the event, 3) their inferential beliefs about what happened or may have happened, and 4) their evaluative beliefs about the situation, including other to self

evaluations (i.e. how the participant felt they were being treated by the other person involved in the situation), self to self evaluations (whether or not they felt such treatment was justified) and self to other evaluations (how they viewed the other person involved in the situation).

It was decided that the interview scores should reflect the quality, rather than the quantity, of the links made by the participants. In this way, higher scores would not be obtained simply because participants talked more and gave more information. Participants could therefore obtain maximum scores on the interview by giving only one example for each section of the interview. However, information on the number of beliefs generated was also noted separately as part of the qualitative analysis, in order that between group differences were not missed.

Participants also received higher scores for raising information naturally or in response to the first specific prompt from the researcher. It was hoped this would differentiate those participants who were more skilled in expressing their emotions and producing links with their beliefs, from those who needed more assistance and encouragement to do so.

Following examination of initial data, changes were made to the Self to Self evaluation category. Initially, participants were to receive a maximum score of two if they could state whether or not the person was right or wrong to treat them in this way. However, answers to prompts from the researcher tended to be categorical yes/no answers, which did not give a true sense of the evaluations made by the individual. The coding system was subsequently altered, so that participants only received a score for this section if they were able to state a reason why the person was right or wrong to treat them this way.

Aspects of the coding and scoring were also clarified following discussion with a third researcher, Professor Dave Dagnan, who is an expert in this field. This process highlighted differences in the interpretation of the coding. Professor Dagnan had interpreted the scoring of the emotions and beliefs as being only when raised in response to specific prompts from the interviewer. However, during discussion, it was clarified

that the purpose of the interview was to establish how people talk about events, emotions and beliefs within a natural dialogue, therefore emotions and beliefs which are expressed naturally, and not only those which are made in response to a specific question, could be scored. The wording of the coding system was altered to make this clear.

The final coding and scoring system for the cognitive-emotive interview is detailed in Table 1 of the Major Research Project.

### **References**

Dunn L.M. & Dunn L. (1997) *The British Picture Vocabulary Scale (BPVS-II)*. NFER-Nelson, Windsor.

The Psychological Corporation (1999) *Wechsler Abbreviated Scale of Intelligence (WASI) Manual*. Harcourt Assessment Inc., San Antonio.

Trower P., Casey A. & Dryden W. (1988) *Cognitive-Behavioural Counselling in Action*. SAGE Publications, London.

Appendix F: Cognitive Mediation Task

**Assessment of cognitive mediation in people with learning disabilities**

**Version 1**

**Scenario 1**

You are in bed one night and you hear a loud noise downstairs.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 2**

You walk into a room where there are a group of your friends. As you walk in they start to laugh.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 3**

You want to go on a special trip but there is only one place and your friend is chosen to go instead.

This is your face (sad).

What might you be thinking or saying to yourself?

**Scenario 4**

You see a group of friends but they do not say hello.

This is your face (sad).

What might you be thinking or saying to yourself?

**Scenario 5**

You have been asked to go and see the manager of the centre/college.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 6**

It is your first day at a new job that you have not done before.

This is your face (sad).

What might you be thinking or saying to yourself?

**Scenario 7**

You are in bed one night and you hear a loud noise downstairs.

This is your face (sad).

What might you be thinking or saying to yourself?

**Scenario 8**

You walk into a room where there are a group of your friends. As you walk in they start to laugh.

This is your face (sad).

What might you be thinking or saying to yourself?

**Scenario 9**

You want to go on a special trip but there is only one place and your friend is chosen to go instead.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 10**

You see a group of friends but they do not say hello.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 11**

You have been asked to go and see the manager of the centre/college.

This is your face (sad).

What might you be thinking or saying to yourself?

**Scenario 12**

It is your first day at a new job that you have not done before.

This is your face (happy).

What might you be thinking or saying to yourself?

**Version 2 (presentation of emotions counterbalanced)**

**Scenario 1**

You are in bed one night and you hear a loud noise downstairs.

This is your face (sad).

What might you be thinking or saying to yourself?

**Scenario 2**

You walk into a room where there are a group of your friends. As you walk in they start to laugh.

This is your face (sad).

What might you be thinking or saying to yourself?

**Scenario 3**

You want to go on a special trip but there is only one place and your friend is chosen to go instead.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 4**

You see a group of friends but they do not say hello.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 5**

You have been asked to go and see the manager of the centre/college.

This is your face (sad).

What might you be thinking or saying to yourself?

**Scenario 6**

It is your first day at a new job that you have not done before.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 7**

You are in bed one night and you hear a loud noise downstairs.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 8**

You walk into a room where there are a group of your friends. As you walk in they start to laugh.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 9**

You want to go on a special trip but there is only one place and your friend is chosen to go instead.

This is your face (sad).

What might you be thinking or saying to yourself?

**Scenario 10**

You see a group of friends but they do not say hello.

This is your face (sad).

What might you be thinking or saying to yourself?



**Scenario 11**

You have been asked to go and see the manager of the centre/college.

This is your face (happy).

What might you be thinking or saying to yourself?

**Scenario 12**

It is your first day at a new job that you have not done before.

This is your face (sad).

What might you be thinking or saying to yourself?

**Reference**

Dagnan, D. & Chadwick, P. (1997) Cognitive-behaviour therapy for people with learning disabilities: assessment and intervention. In Stenfort Kroese, B., Dagnan, D. & Loumidis, K. (eds) *Cognitive Behaviour Therapy for People with Learning Disabilities*. London: Routledge, pp. 110-123

Appendix G: Cognitive Mediation Task Stimuli

You are in bed one night and you hear a loud noise downstairs.

This is your face.



You walk into a room where there are a group of your friends. As you walk in they start to laugh.

This is your face.



Appendix H: Participant Information Sheet: Non Intellectually Disabled Group

## Talking about real life events

### A research study



You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take some time to read the following information carefully. If there is anything that is not clear, or you require any more information please do not hesitate to ask.

#### **What is the purpose of the study?**

Being able to talk about real life events is a key requirement for participation in current psychological therapies, which have been shown to be effective for a range of emotional problems. However, very little work has been done on how people talk about real life events. This study is looking at how people talk about things that happen to them. We hope that this will provide information on how psychologists can best listen to people's problems and assist them to talk about things that have happened. It is hoped that this information will help to make psychological therapies more effective for people.

This study will also include a group of people with learning disabilities. Traditionally, people with learning disabilities have been excluded from certain types of psychological therapy, as it has been assumed that they do not have the skills to participate. This research is therefore important for them, as it will give information on how they can be helped to talk about things that have happened to them.

#### **Why have I been chosen for the research?**

You have been chosen because you are an adult aged between 18 and 65 years.

#### **Do I have to take part?**

It is up to you to decide whether or not to take part.

If you decide to take part, you are still free to withdraw at any time and without giving a reason. If you decide to withdraw, any data that has already been collected will be destroyed.

**How do I let you know that I want to take part?**

If you want to take part, you can fill in the reply sheet and give it to me or send it to me using the stamped addressed envelope.

**What will I have to do?**

I will contact you and meet with you at your college or place of work. You will be asked to sign a consent form and will be given a copy of this form to keep. I will ask you about a recent situation that happened and that is still important to you now. I will tape record this discussion. I will also ask you to complete some other tasks involving words and pictures. This will take up to 1 hour. We can meet for one hour long session or two 30 minute sessions.

**Will my taking part in the study be kept confidential?**

No one will be told you are taking part in the study without your permission. I may put some of the things you say in my report but you will not be named.

The only circumstance under which information will be shared is in the event that you make a disclosure that you or somebody else is at immediate risk of harm.

**What happens to the information?**

All data will be kept in accordance with the data protection act. Paper data and recordings will be kept in a locked filing cabinet at the university. Information collected from the study will be kept on a computer at the university. This data will be protected by a password. Your name or any other personal details will not be stored with this information. Only members of the research team will have access to this data.

I will write a report that may be published. You will not be identified in the report.

The result will also form part of the main researcher's Doctorate in Clinical Psychology. Again, you will not be identified in the results. This will be read by other psychologists and professionals who are interested in this area.

**Will I be able to find out the results of the study?**

Yes. After the study is finished, I will write to you to inform you of the results and give you the opportunity to ask questions.

**Who has approved the research?**

The University of Glasgow, Greater Glasgow and Clyde NHS Health Board and an NHS Research Ethics Committee have approved the research.

If you have any questions about the study, please contact me:

Amy Hebblethwaite  
Trainee Clinical Psychologist  
Psychological Medicine  
University of Glasgow  
Gartnavel Royal Hospital  
Glasgow  
G12 0XH

Telephone: 0141 211 3920

If you would like to speak to somebody, who is not involved in this study, for independent advice about taking part in a research project, you can contact:

Dr. Sharon Horne-Jenkins  
Clinical Psychologist  
Riddrie Resource Centre  
1 Riddrievale Court  
Glasgow  
G33 2RN

Telephone: 0141 276 2100

Appendix I: Participant Information Sheet: Intellectually Disabled Group

## Talking about real life events

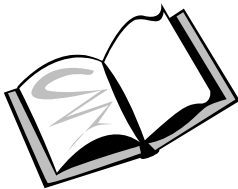
### A research study



UNIVERSITY  
of  
GLASGOW



**Please read this information sheet.**



You can ask a carer or support worker to help you.



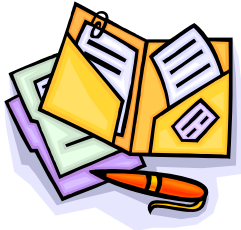
My name is Amy. I am at university.

**What is this about?**



I am doing a study as part of my Clinical Psychology degree course. I want to find out how people talk about their lives and things that happen to them. What you say will help psychologists learn to listen properly to people's problems.

### **Why have I been asked to take part?**



You are an adult who attends a day centre or college or who works. 42 adults are being asked to talk about an everyday event.

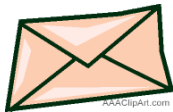
### **Do I have to take part?**



No. You decide if you want to take part.

It is ok if you change your mind. It is your choice.

### **How do I let you know if I want to take part?**



If you want to talk to me, you can fill in the reply sheet and give it to me or send it to me using the stamped addressed envelope. You can ask somebody to help you with this.



### What will happen if I want to take part?

I will contact you and meet with you at your day centre or college or work.



I will ask you to sign a form to say you are happy to take part.

If you are unable to sign the form, you can tell me if you want to take part and choose somebody (such as your parent or support worker) to sign the form for you.



I will meet with you for 1 hour. If you want, we can meet twice instead, for 30 minutes each time.

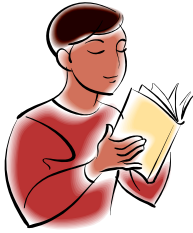


In the meeting, I will ask you some questions about a situation that has happened to you and that is still important for you. I will ask you to do some puzzles with pictures and words. The meeting will be taped using a tape recorder.

### What if I change my mind and do not want to take part?



You can change your mind or stop at any time. Nobody will be upset and you don't have to say why.



### **Will other people find out about what I say?**

Anything you say will be private. I may put things you have said in my report. The things you tell me will not have your name on, so no one will know that you've said them.

The only time I might have to talk to somebody else about what you have said is if I think you might need some extra help. This will only happen if I am very worried about you or somebody else.

### **What happens to what I say?**



I will write about what you, and the other people who take part, say. Other psychologists will be able to read this. A copy will also be kept at the library at the hospital so other people can read it too.

### **Will I be able to find out the results of the study?**

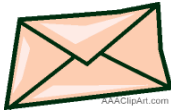


Yes. Once the study has finished, I will send you information about it and give you the chance to ask questions.



**You can ask me questions about this.**

**You can write to me or phone me.**



Amy Hebblethwaite  
Trainee Clinical Psychologist  
Psychological Medicine  
University of Glasgow  
Gartnavel Royal Hospital  
Glasgow  
G12 0XH



Telephone: 0141 211 3920

**You can talk to somebody who is not involved in this research study.**



**You can talk to her about what it is like to take part in a research study.**

Dr. Sharon Horne-Jenkins  
Clinical Psychologist  
Riddrie Resource Centre  
1 Riddrievale Court  
Glasgow  
G33 2RN



Telephone: 0141 276 2100

**Thank you for reading this.**

Appendix J: Participant Consent Form: Non Intellectually Disabled Group

# Talking about real life events

## A research study

Researchers: Amy Hebblethwaite & Andrew Jahoda



### Consent Form

I have read and understood the information sheet.

I have had the opportunity to ask questions and have had questions answered to my satisfaction. I have all the information about the study that I require.

I understand that I do not have to take part and I can change my mind or withdraw at any time without giving a reason.

I agree to take part in the study.

I agree to the meeting being tape recorded.

I agree to you using the things I say in a report without my name or personally identifiable information being on it.

Name of participant.....

Signature.....

Date.....

Name of researcher.....

Signature.....

Date.....

Appendix K: Participant Consent Form- Intellectually Disabled Group

# Talking about real life events

## A research study



### CONSENT FORM

My name is.....

Please Circle:  
YES NO



I have read and understood  
the information sheet



I have had the chance to ask  
questions



My questions have been  
answered



I have got all the information  
want





I know that I can change my mind or stop at any time



I agree to take part in the study



I agree to the meeting being tape recorded



I agree to you using things I have said in your report without my name on it



Participant signature:.....

Date: .....

Researcher signature:.....

Date: .....



If participant is unable to sign:

I confirm that this person has been given information about taking part in the study, that they have understood as far as possible what is expected and freely given their consent to participating in the study

Signature.....

Relationship to  
participant.....

Date: .....

## Appendix L: Major Research Project Proposal

### **Abstract**

#### **Background**

Previous studies which have assessed the ability of people with intellectual disabilities to make links between events, beliefs and emotions have used formal assessments based on hypothetical scenarios. The present study intends to explore whether these links are made in dialogue when participants discuss real life, emotive events.

#### **Aims**

- i) To investigate whether people with intellectual disabilities make links between events, beliefs and emotions within their accounts of emotive experiences.
- ii) To consider whether the ability to make these links in dialogue is associated with their performance on a formal assessment.

#### **Methods**

The study will employ a group comparison design of individuals with and without intellectual disabilities. A cognitive-emotive interview, which has been shown to be effective at accessing beliefs and emotions, will be used to assist participants in generating an account of an emotive event. Independent t-tests will be used to make between group comparisons of the ability to make links between events, beliefs and emotions within dialogue and on the formal assessment. Pearson's *r* correlations will assess whether the ability to make links between events, beliefs and emotions in dialogue is associated with scores on the formal assessment in both groups.

#### **Applications**

Practical implications of the study include providing evidence both for how best to assist clients to make links between their beliefs and emotions within dialogue and for the clinical usefulness of existing formal assessments.



## **Introduction**

Several recent studies have explored whether people with intellectual disabilities have the skills to undertake cognitive therapy based on a cognitive distortion model. This approach asserts that it is the individual's beliefs about an event, rather than the event itself, which influences emotional and behavioural responses. This is a departure from earlier work, which hypothesised that disturbed behaviour and emotions are a result of cognitive deficits and focussed on the teaching of self-instructional strategies to compensate for these deficits (Willner, 2005). However, a key question is whether people with intellectual disabilities have the cognitive capacity to make the links necessary for therapy based on a cognitive distortion model. Dagnan et al. (2000) examined the ability of people with intellectual disabilities to identify emotions and link them to both an event and a belief about the event. Participants had greater difficulty on tasks which involved linking the emotion to a belief about the event, compared to those which required linking only the event and emotion. The study also found a significant association between receptive language ability and performance on some of the tasks.

Other studies (Joyce et al., 2006, Oathamshaw & Haddock, 2006) which have used the same measures have reported similar findings to Dagnan et al. (2000). In a paper currently in press, Dagnan et al. (2008) argue that the task used to assess links between events, beliefs and emotions in the Dagnan et al. (2000) study was demanding for people with intellectual disabilities and may therefore have limited clinical value. They suggest using an earlier, more open-ended version of the task, developed by Dagnan & Chadwick (1997), for clinical purposes.

Furthermore, the measures used in previous research were formal assessments, which involved responses to hypothetical, rather than real life situations. There is no research evidence for how much performance on formal assessments relates to an individual's ability to make links between their beliefs and emotions, when talking about real life events, which have personal significance for them.

Indeed, there has been little research on whether people naturally make these links between events, beliefs and emotions within everyday accounts of emotive events. Studies on the development of narrative have found age related changes in the psychological content of narratives (e.g. Bamberg & Damrad-Frye, 1991, McKeough & Genereux, 2003). McKeough and Genereux (2003) found that the ability to make links between events and associated feelings and thoughts relating to the immediate causes and consequences of the event is seen in the narratives of ten year olds and is a skill which develops during adolescence. However, the narratives produced in this developmental research did not relate to real life events experienced by the participants, as would be the case within clinical discussion.

Research findings have also shown that narrative development does not merely reflect individual skills. People provide accounts of events for the benefit of others, and as such, most narratives occur within dialogue. In the case of children, the literature reports that narrative development can be scaffolded by a caregiver (Wahler & Castlebury, 2002). Although there are difficulties in generalizing developmental literature to adults with intellectual disabilities, these findings suggest that this population may also benefit from being encouraged and assisted to talk about everyday events.

This study will investigate whether people with mild to moderate intellectual disabilities make links between events, beliefs and emotions within their accounts of emotive, real life experiences. As there has been little research on whether people without disabilities make these links, the study will incorporate a group comparison. The researcher will assist participants to generate an account of an emotive event by using an interview format, which has been shown to be effective at eliciting beliefs and emotions in people with intellectual disabilities (Jahoda et al., 1998).

## **Aims and Hypotheses**

### **Aims**

- i. To investigate whether people with mild to moderate intellectual disabilities make links between events, beliefs and emotions within their accounts of real life, emotive experiences.
- ii. To consider whether the ability to make these links in a dialogue about a real life event is associated with performance on a formal assessment.

### **Hypotheses**

- 1) People with intellectual disabilities will have more difficulty than people without intellectual disabilities in making links between events, beliefs and emotions, both within a dialogue about a real life event and on a formal assessment.
- 2) The ability to make links between events, beliefs and emotions within a dialogue will be associated with performance on a formal assessment for people with and without intellectual disabilities.
- 3) Performance on the above tasks will be correlated with intellectual and receptive language ability.

## **Plan of investigation**

### **Participants**

Participants will be 21 adults with mild to moderate intellectual disabilities and 21 adults without intellectual disabilities.

### **Inclusion and Exclusion Criteria**

Participants will be included in the study if they:

- Are an adult aged 18 to 65 years.
- Have the ability to provide informed consent. This will be judged by the researcher during the process of obtaining informed consent.
- Have sufficient expressive and receptive language skills to describe everyday events.

- Are fluent English speakers. This will be judged by the researcher when she meets with potential participants to provide information about the study.
- Participants will be excluded from the study if they:
- Are unable to provide informed consent. This will be judged by the researcher during the process of obtaining informed consent.
- Have insufficient expressive and receptive language skills to describe everyday events.
- Are not fluent English speakers. This will be judged by the researcher when she meets with potential participants to provide information about the study.
- Have a degree of sensory impairment which would affect their ability to complete the research tasks. This will be judged by the researcher when she meets with potential participants to provide information about the study.
- Have informed the researcher that they have an Autistic Spectrum Disorder (ASD). Social cognitive deficits associated with ASDs are likely to result in difficulties with the research tasks for participants. The researcher will explain this to potential participants. If a participant is unsure whether this will affect their participation, the researcher will ask for their permission to speak to a member of staff and check whether they have an ASD.

### **Recruitment Procedures**

Participants with intellectual disabilities will be recruited via day centres, colleges and training centres within Greater Glasgow and Clyde. Participants without intellectual disabilities will be workers at day centres, NHS health care staff, staff from care organisations and students at colleges (including those undertaking courses for adults who wish to re-enter the workforce). The researcher and supervisor of this project have established links with several day centres, care staff organisations and a college within Glasgow and these links will be used in recruitment. The researcher will contact managers of the centres, colleges and care organisations and ask permission to meet with staff and/or service users to discuss the research.

For participants who are being recruited from their college or place of work, an open invitation will be used. The researcher will arrange a time to visit their college or place of work and invitations to meet with the researcher will be distributed to existing whole staff groups or whole classes of students at the college. Where possible, this will be done via written invitations. However, in the case of potential participants who may not have the literacy skills to understand a written invitation, a representative from their college or place of work (for example a lecturer from college) will be asked to verbally invite them to a meeting with the researcher.

For participants with intellectual disabilities who are being recruited from day centres, the researcher would ask managers or key workers of the centre to identify groups of individuals who have sufficient expressive and receptive language skills to describe everyday events. The researcher would make it clear to the managers or key workers what level of language skills are required and will use the following items from the Adaptive Behaviour Scale (ABS-RC:2) (Nihira, Leland & Lambert, 1993) to assist this process:

- Talks to others about sports, family, group activities etc.
- Sometimes uses complex sentences containing 'because', 'but' etc.
- Answers simple questions such as 'What is your name?' or 'What are you doing?'

The researcher will then meet with groups of potential participants at their centre, college or place of work to provide verbal and written information about the study. Participants will be asked to return a reply slip with contact details to the researcher if they wish to take part in the study.

### **Measures**

The following measures will be used:

- 1) Background Information Sheet. This will collect background demographic information on gender, age, socio-economic status and level of education.

As receptive vocabulary has been found to be correlated with the ability to recognise emotions and link them with events and beliefs (Dagnan et al., 2000), for the purposes of the present study it is important to establish the level of participants' receptive language ability. In addition, an estimate of IQ will be needed to screen for the presence of an intellectual disability.

- 2) The British Picture Vocabulary Scale (BPVS) Short Form (Dunn et al., 1982). This is an assessment of receptive language ability. Psychometric properties indicate adequate internal consistency (0.80).
- 3) Wechsler Abbreviated Scale of Intelligence (WASI) (The Psychological Corporation, 1999). The WASI provides an estimate of full scale IQ using a two- or four-subtest form. Psychometric properties include a high level of internal consistency (0.92-0.98), adequate test-retest reliability (0.87-0.92) and good concurrent validity (0.87).

The following semi-structured interview and measure will be used to assess the ability of participants to make links between events, beliefs and emotions:

- 4) Cognitive-Emotive Behavioural Assessment (CEBA) Interview (Trower et al., 1988). The interview involves asking participants to describe a recent, real life interpersonal event and their emotional reactions. The interviewer tries to get the participant to focus on the emotion while facilitating a dialogue about beliefs associated with the event. The interview will generate data on the participant's ability to describe: 1). the event, 2). their emotional reactions to the event, 3). their behavioural reactions, 4). their inferential beliefs about what happened or may have happened, and 5). their evaluative beliefs about the situation, including other to self evaluations (i.e. how the participant felt they were being treated by the other person(s) involved in the situation), self to self evaluations (whether or not they felt such treatment was justified) and self to other evaluations (how they viewed the other person(s) involved in the situation). The number of prompts required to obtain these items will also be recorded. Participants will receive a numerical score. The coding and scoring system will be finalised during a pilot phase and will ensure that a range of scores are possible, in order to be sensitive to variance between participants.

- 5) Formal assessment of participant's ability to make links between events, beliefs and emotions (Dagnan & Chadwick, 1997). The assessment contains six items which each describe a hypothetical event and an associated feeling of happiness or sadness. The six items are repeated twice, with a different emotion each time. The participant is asked to identify a congruent thought. For example, item one reads 'You are in bed one night and you hear a loud noise downstairs. You feel happy. What would you be thinking or saying to yourself?' An example of an accurate response would be 'Might be dad shouting me for breakfast' (Dagnan et al., 2008). Participants can obtain a maximum score of twelve.

### **Design**

The study includes both between and within group comparisons. An independent between groups design will be used to compare the ability of people with and without intellectual disabilities to make links between events, beliefs and emotions in both an account of a real life event and on a formal assessment (hypothesis 1). Attempts will be made to match the two groups as closely as possible for age, gender and socio-economic status. Within group comparisons will assess whether the ability to make links between events, beliefs and emotions within dialogue is associated with scores on a formal assessment in people with and without intellectual disabilities (hypothesis 2) and whether performances are associated with IQ and receptive language ability (hypothesis 3).

A pilot phase of the study will be carried out with two to four individuals. A key component of this phase will be to pilot the use of the CEBA interview and establish a means of scoring this.

### **Research Procedures**

Informed consent will be obtained using a patient information sheet and consent form, including a version adapted for people with intellectual disabilities. The researcher will complete the background information sheet first. The order in which the CEBA interview and Dagnan & Chadwick's (1997) formal assessment are presented will be balanced to control for order effects. The BPVS and WASI will be administered last, as these are

more formal measures, on which participants may get a sense of having performed correctly or incorrectly. The interviews will be recorded and transcribed. The assessments may be administered over one 50 minute session or two 25 minute sessions, as decided by the participant.

### **Justification of Sample Size**

No study that has looked at the ability of people with or without intellectual disabilities to make links between events, beliefs and emotions within dialogue has been identified. However, a previous study by Dagnan et al. (2008) found a positive correlation between performance on their formal assessment, which is to be used in this study, and Reed and Clements' (1989) assessment of emotional understanding ( $r=0.45$ ). This indicated a large effect size for the correlation between these two measures. The current study is using two tasks which will both examine the ability to link beliefs and emotions to events and therefore a greater correlation might be expected, as two more closely related skills are being examined.

For this study, with an effect size of 0.50, it is estimated that 21 participants per group will be required to detect a significant correlation between scores on the formal assessment and the interview. This is based on an alpha level of .05 and a power of 0.8 (one tailed).

### **Settings and Equipment**

Participants will be interviewed in a quiet room at their centre, college or place of work. The equipment required for the study will be a digital voice recorder to record the interviews and the four measures described above, obtained from the Greater Glasgow and Clyde NHS Learning Disability Partnership and the Department of Psychological Medicine, University of Glasgow.

### **Data Analysis**

Data will be analysed using SPSS. Descriptive analyses will be used to provide an account of the data obtained from the interviews. Inter-rater reliability will be obtained



for the coding and scoring of the interviews. The data will be examined and, if the data are suitable or a transformation of the data is possible, parametric analyses will be used. Independent t-tests will be used to make between group comparisons of the ability to make links between events, beliefs and emotions within an account of a real life event and on the formal assessment (hypothesis 1). Pearson's  $r$  correlations will be used to assess whether the ability to make links between events, beliefs and emotions in dialogue is associated with scores on the formal assessment in people with and without intellectual disabilities (hypothesis 2). Pearson's  $r$  correlations will also be used to ascertain whether intellectual and receptive language ability are associated with scores on the CEBA interview and formal assessment (hypothesis 3).

## **Health and Safety Issues**

### **Researcher Safety Issues**

Research will be conducted within a safe environment at the participant's centre, college or place of work. The researcher will arrange for meetings to take place during normal working hours and will obtain assurance from the manager or a key staff member, that other staff will be present in an adjacent room at the time of the meeting.

### **Participant Safety Issues**

Meetings will be conducted in a safe environment under the supervision of the main researcher. As stated above, the researcher will obtain assurance that other staff are present in an adjacent room. If a participant expresses any distress during the session, the researcher will ensure that a member of staff is available to talk to the participant.

## **Ethical Issues**

Informed consent will be sought from all participants, using adapted information sheets and consent forms, which will be read to the participant by the researcher if necessary. Participants will be informed that they may withdraw from the study at any time. If a participant expresses any distress during the session, the researcher will ensure that

another worker is available to talk to the participant. If a participant makes a disclosure, the researcher will speak to the centre or college manager and, if appropriate, refer the participant on to an appropriate service. R&D and ethical approval for the research will be sought from Greater Glasgow and Clyde Health Board.

### **Financial Issues**

The estimated financial cost of the study is £149. This includes equipment (WASI and BPVS response forms), stationery and postage costs.

### **Timetable**

April 2008: submit final research proposal

May-September 2008: obtain R&D and ethics approval

October 2008-April 2009: data collection

April-May 2009: data analysis

July 2009: submit research project

### **Practical Applications**

The study will produce research evidence for whether people with and without intellectual disabilities make links between events, beliefs and emotions within dialogue.

Furthermore, the method used in the study to create an account of a real life event may inform the process of assessment and therapy by providing evidence for how best to assist clients with intellectual disabilities to generate and make links between events, beliefs and emotions within dialogue. In addition, if the ability to make these links in dialogue is found to be associated with performance on the formal assessment, the study will provide further evidence on the clinical usefulness of this assessment of cognitive therapy skills.

If the formal assessment does not reflect participants' ability to make these links within a dialogue which is akin to a clinical discussion, the study will highlight the need to develop

a more effective assessment of the ability of people with intellectual disabilities to participate in cognitive therapy.

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Appendix M: Ethical Approval

*Copy of letter detailing ethical approval available in print copy of thesis*

ADVANCED CLINICAL PRACTICE I:

REFLECTIVE CRITICAL ACCOUNT (Abstract only)

Title: Triage assessment: a useful system within a child and adolescent mental health team?

Running Title: Triage assessment in a child and adolescent mental health team

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### **Abstract**

This reflective account details my experience of the triage assessment system within my current placement at a child and adolescent mental health team. To assist my reflection and to help me to structure my account, I use Rolfe et al.'s (2001) Framework for Reflexive Practice. I give examples of two key experiences which have occurred during clinical and professional interactions and describe both situations, along with my associated feelings and actions. I then use the reflexive practice model to critically analyse my feelings and knowledge. In doing so, I relate to issues at a number of different levels, including clinical issues of engagement and therapeutic alliance. I also reflect on ethical practice and equality of treatment, before considering broader professional and service related issues of resources, referral criteria and gaps within services. Through this reflection, I am able to identify a range of different sources of learning, including formal teaching, clinical supervision and personal reading on relevant policies and the evidence base. I am also able to highlight my professional development over time. Finally I consider how these experiences may affect my future practice and reflect on my future learning needs in this area.





### **Abstract**

This reflective account details my experiences of working within a specialist neuropsychology service. I describe examples of direct clinical work from my placement which have caused me to think about the remit of this service. The model I use to structure and assist the reflection is Rolfe et al.'s (2001) Framework for Reflective Practice. This allows me to draw upon a range of relevant sources of knowledge, including scientific evidence, clinical standards, professional guidelines, clinical supervision and previous clinical experience. I use these sources of knowledge to consider the most appropriate use of specialist clinical psychology resources and the implications for direct clinical work. In doing so, I reflect upon my own learning and future development needs.