

Abstract

Clinicians are often sceptical about offering cognitive behavioural therapy (CBT) to individuals experiencing thought disorder. This view may result from perceived difficulties in clients being able to learn and better understand their experiences through verbal dialogue. However, it may also partly be due to the lack of clear guidance on how to address and work with these difficulties within therapy. This paper provides recommendations for delivering CBT in individuals experiencing thought disorder. It considers how clinicians might conduct their cognitive behavioural assessment, formulation, and intervention, targeting unhelpful appraisals and behaviour, and generating insight. The aim is to better disseminate the techniques sometimes applied in clinical practice.

Introduction

Formal thought disorder (FTD) is a term used to describe disorganised thinking as evidenced through speech. Traditionally regarded as a disruption to the form of thinking, it is clearly distinguished from disturbances in thought content, such as delusions (Simpson & Davis, 1985). The Diagnostic and Statistical Manual (fifth edition; DSM-V) classifies FTD as a psychotic symptom, manifested as bizarre speech and communication. FTD may include peculiar words, disconnected ideas, lack of clarity or vagueness, and irrelevant responses. Although the term FTD is used to describe a problem with the cognitive activity of 'thinking', thinking is a theoretical entity, which may only be inferred through an individual's behaviour and verbal discourse. Whether the disorder is one of speech, language or thought is a long running and controversial debate (Chaika, 1982; Holzman et al, 1986).

Extreme forms of FTD can make meaningful dialogue between clinicians and service users difficult. However, in mild or moderate FTD, there may still be scope for effective communication, and the opportunity to conduct talking therapies, such as cognitive behavioural therapy (CBT). In CBT, the therapist and client explore the links between thoughts and beliefs, events, moods, and behaviours (Morrison et al., 2004). Several large meta-analyses have suggested that CBT is effective for treating psychotic disorders at a population level (e.g. Turner et al., 2014; Wykes et al., 2008). Provisional evidence suggests that disorganised thinking does not necessarily preclude the effectiveness of CBT (Thomas et al., 2011) and that FTD may improve with psychological treatment (Tarrier et al., 2001). Nevertheless, scepticism and uncertainty exists over offering CBT to individuals experiencing FTD. This view may result from perceived difficulties in clients being able to better understand their experiences through verbal dialogue or retain information over time. However, it may also be due to the lack of a clear direction and recommendations for how to address FTD within therapy.

The current article aims to provide guidance on how therapists might apply CBT to meet the needs of individuals experiencing FTD. It was prompted by the current emphasis on delivering CBT for psychosis and the prevalence of FTD amongst people experiencing psychosis (Roche et al, 2015). We hypothesise about possible cognitive-behavioural processes implicated in the maintenance of these experiences to inform ideas for its treatment. The contents represent the views of clinicians working in England and are necessarily tentative given the limited amount of investigation in this area. It is by no means a complete or inflexible set of recommendations and clinicians should feel free to adapt its contents depending on their psychological formulations of clients' difficulties. At times, the guidance develops and builds upon the work of other authors (Beck et al., 2009; Wright et

al., 2006). Our aim is to better disseminate the techniques sometimes applied in clinical practice, which should then be evaluated in future research.

Assessment strategies

CBT typically starts with a thorough assessment of a client's presenting problems. Difficulties in defining FTD have led to inconsistencies in how it has been observed, assessed, and reported. Andreasen (1979) has argued that although clinicians often regard FTD as a unitary concept, it is a heterogeneous group of behaviours; different features of FTD may not correlate or interact in a similar way and are likely to be conceptually diverse. Andreasen proposed that the term FTD be abandoned and, alternatively, the concept of 'disorders of thought, language, and communication' be employed instead. She emphasised the importance of determining FTD from observation of clinical behaviour with carefully defined parameters. From this perspective, the clinician should evaluate observable behaviour as disturbances arising from a speaker failing to follow the necessary rules to convey a meaningful dyadic interaction with a listener.

When classifying the clinical features of FTD, some authors have attempted to distinguish between negative and positive subtypes (Andreasen & Grove, 1986). Positive thought disorder usually implies that unusual thinking has become commonplace. This includes features such as incoherence, illogical thinking, and marked derailment and loosening of associations. Negative thought disorder is a term given to cognitive functions that indicate some deficiency in thinking (e.g. poverty of speech, poverty of content of speech). The course and mechanisms underlying the two forms of FTD may differ; positive thought disorder is potentially less persistent and more state dependent (Harrow & Marengo, 1986). To note, factor analysis has not always supported this method of categorizing FTD and other factor structures have been demonstrated in populations with psychosis (Roche et al., 2015).

Structured assessments

There are a number of standardised assessments used to ascertain the presence and severity of FTD. Although often time consuming, they can aid understanding of the presenting difficulties, and help to monitor and demonstrate clients' progress within therapy. We provide an overview of some of the most validated assessments in current use.

Scale for the Assessment of Thought, Language, and Communication (TLC; Andreasen, 1979, 1986)

The TLC is a twenty-item scale assessing the presence and severity of two dozen subtypes of FTD. It aims to describe different speech and language behaviours, without attempting to characterise the possible underlying cognitive processes. Communication disturbances are poverty of content of speech, pressure of speech, distractible speech, tangentiality, derailment, stilted speech, echolalia, self-reference, circumstantiality, loss of goal, perseveration, and blocking. Speech samples of at least ten minutes are usually required and judgements of severity often depend on the observed frequency of the phenomenon. In addition to twenty individual subscale scores, the TLC provides a global thought disorder scale.

Scale for the Assessment of Positive Symptoms (SAPS; Andreasen, 1984)

A subset of items from the TLC are used within the SAPS. The SAPS is a 34-item scale that rates the severity of positive psychotic symptoms based on observations made during clinical interviews with clients and significant others. It assesses a range of psychotic experiences, including positive FTD. The SAPS assesses eight types of positive FTD, including derailment, tangentiality, incoherence, illogicality, circumstantiality, pressure of speech, distractible speech, and clanging. A further item provides a global rating of positive FTD.

Thought and Language Index (Liddle et al., 2002; TLI) based on the Thought Disorder Index (Johnston & Holzman, 1979).

Based on the lengthy and time-consuming TDI, the more practical TLI aims to assess eight types of thought and language difficulties on a continuum that extends to non-clinical populations. The TLI requires clients to generate eight one-minute speech samples, whilst responding to standardised stimuli. The interviewer assesses for the presence of eight abnormalities, reflecting impoverished thought and speech, disorganisation of thought and language, and non-specific abnormalities of speech and thought regulation.

The Thought and Language Disorder scale (Kircher et al., 2014; TALD)

The TALD is a 30-item rating scale that consists of four factors: positive, negative, objective and subjective FTD symptoms. Clients complete a 50-minute clinical interview based on two parts; the first asks them for general information, such as hobbies and interests; the second explores symptoms of FTD. The assessment explores subjective phenomena (e.g. inhibited thinking) by providing examples of FTD and asking participants to report on their experiences within the preceding 24 hours. The interview also asks patient about emotionally salient topics in order to

assess whether FTD only occurs in the presence of stress. The authors suggest that it is a practicable, nosologically open means for assessing FTD.

Communication Disturbances Index (CDI; Docherty, 1996).

The CDI focuses on failures in transmission of meaning from the speaker to the listener, rather than FTD *per se*. It consists of six definitions of communication disturbances, based on the concept of unclear reference. However, it has a wider criterion for communication errors and a lower threshold for including disrupted communication than other measures. In this assessment, the clinician examines a typical 10-minute sample of patient's speech and classifies which of six types of disturbance occurred within each clause. Important to note is that high inter-rater reliability is not easily attained.

Other structured assessments.

Several widely used structured clinical assessments include items measuring FTD, including the Positive and Negative Syndrome Scale (PANSS; Kay et al., 1987) where the interviewer rates observable communication difficulties during the assessment (disorganised speech item). Similarly, the Comprehensive Assessment of the At-risk Mental State (CAARMS; Yung et al., 2005), used to determine whether a person meets operationally defined criteria for being 'at risk' of developing psychosis, includes one subscale assessing objective and subjective indicators of speech disorganization. Frequency and duration are measured on 6-point scale (absent to continuous), whereas distress relating to speech difficulties is rated from 0-100. The latter can be beneficial when considering the emotional impact of speech difficulties. Lastly, carer assessments of FTD can be beneficial when the client is unaware of their FTD or unable to complete a structured interview (Barrera et al., 2008).

Cognitive behavioural assessment of FTD

In addition to any structured measures, clinicians should conduct an open cognitive behavioural assessment. Here, it is important to establish whether individuals recognise any difficulties in their own speech and how this might be problematic from their perspective. Some clients may be overly attentive to speech problems, whereas others may not acknowledge difficulties in this area. Such differences will likely shape the direction of therapy and the employed strategies. During an assessment, therapists may wish to ascertain the factors exacerbating or ameliorating problems with language and thinking (e.g. social isolation, substance misuse), which

could be useful when developing an intervention. We have listed example questions to ask during assessment in Table 1.

As recommended in CBT for other psychotic experiences (Morrison et al., 2004), therapists should assess clients' appraisals and interpretations of their thought disorder, resultant emotional consequences, and behavioural reactions. Some clients might recognise that they have difficulty with thinking and communication; and report that their thoughts are 'muddled and confused', being unable to 'think or talk straight', or that their minds go 'blank'. Other individuals may be able to identify certain negative or 'hot' cognitions concerning their thinking and communication. These can relate to the integrity of client's minds (e.g. 'it is a sign that my brain is damaged') and social-evaluative concerns (e.g. 'others will think I am stupid'), but can also include unusual appraisals (e.g. 'somebody is controlling my thoughts').

Therapists should be careful to assess the impact of thoughts on resultant emotional states. The client who appraises FTD as a normal human experience might have a different affective response to the individual who interprets it as a sign of a brain tumour. Such appraisals and resultant emotions can then be revisited throughout the process of therapy. Therapists should also assess behavioural responses, such as attentional strategies, threat monitoring, and avoidance of certain situations.

Many clients experience communication difficulties during an assessment. Where possible, therapists can use these instances as opportunities for 'online' processing and assessment of client's experiences 'in the moment'; as the cognitions, affect, and behaviour spontaneously occur. This can elicit key information and is particularly important when clients struggle to recall previous occasions of communication difficulties. Instead, it might be beneficial to focus on present moment questions, such as 'what is crossing your mind right now as you're trying to find the words?'.

Formulation

Within CBT, therapists and clients work collaboratively to develop psychological formulations. Formulations are hypotheses about the causes, mechanisms, precipitants and maintaining influences of a person's presenting difficulties, and inform and guide the process of therapy. Persons (2006) recommends using nomothetic case formulations, with the aim of strengthening the links between theory and clinical practice. In the case of FTD, however, we are not aware of any cognitive models of FTD used to inform a nomothetic template. The only option for

practitioners wishing to formulate these difficulties is therefore to develop an idiographic case formulation, which may still provide useful insights into clients' difficulties.

When formulating FTD in psychosis, it can be helpful to identify the potential events that precipitate the experience of disordered thought or communication, the appraisal of the experience, the emotional consequence, and how they respond to the experience. The latter includes both cognitive (e.g. self-focussed attention), as well as overt behavioural (e.g. avoidance), responses that might maintain the problem and the related appraisal over time. In this way, the cognitive-behavioural conceptualisation of the experience is similar to the formulation of other symptoms of psychosis (Morrison et al., 1998). The therapist can use the formulation to identify potential maintenance links, and interventions that may help the client respond more helpfully to the experience. The aim of CBT for psychosis is to reduce the distress associated with the symptom, rather than to eliminate the symptom per se, although we might hypothesise that symptoms reduce as a secondary consequence of reductions in distress.

We provide an example case formulation in Figure 1, informed by models of voice hearing (Morrison, Haddock & Tarrier, 1995). Jane, 25, recently experienced a psychotic episode characterised by difficulties in thinking and communication, which she refers to as 'broken thoughts'. She appraises these experiences as her brain being irreparably 'damaged' and the result of 'psychic interference'. There are also some concerns around resulting negative evaluation from others. The aforementioned interpretations of the thought disorder increase Jane's anxiety. There is evidence that emotionally salient verbal content can exacerbate thought disorder, potentially by elevating negative affect (Haddock et al., 1995). Thus, we might predict that anxiety, here, could further disrupt her thinking and communication. To cope with her situation, Jane starts monitoring for signs of her thinking difficulties, avoiding social situations, and smoking cannabis. The attentional focus and cannabis use exacerbate Jane's thought disorder symptoms, whereas the avoidance prevents disconfirmation of her unhelpful appraisals over time. Spending more time alone also increases Jane's opportunity for worry and rumination, which further exacerbate her thought disorder through resultant anxiety.

Figure 2 shows an alternative formulation for Jane's problems. This 'parallel formulation' (two maintenance formulations created in parallel) is useful for highlighting the interaction between thought disorder and co-existing problems (e.g. paranoia). Therapists may wish to start with a simple single maintenance formulation and build up to the parallel processes. In the case example, the therapist first draws out a formulation of Jane's suspicious thoughts and then links it to the difficulties in communication and thinking. To elucidate, when confronted with a social situation,

Jane experiences thoughts that other people are secretly laughing at and out to get her, which makes her feel anxious and frustrated. As a result, she increasingly looks out for signs of negative evaluation from others (threat monitoring). Unfortunately, the resulting anxiety means that Jane is more likely to experience disorganised thoughts and communication. These disorganised utterances lead to further appraisals that other people are mocking her (at times she may actually receive negative feedback from others), which contributes to her anxiety. Eventually, Jane leaves and avoids social situations, which may contribute to the maintenance of her suspicious thoughts. Thus, we can see how suspicious thoughts might contribute to thought disorder, but also how thought disorder might maintain suspicious thoughts over time.

Given the lack of data available to guide using formulations with people experiencing FTD, clinical judgement is required for how and when these are employed. For clients with FTD who find it difficult to comprehend and retain information, use of complex formulations should be avoided. Instead, careful questioning might be used to explore the client's experience of the process of developing a formulation, which can then be adjusted according to client feedback.

Intervention strategies

The choice of intervention strategies is dependent on a client's formulation and agreed goals for therapy. Some clients may not recognise or wish to work on communication problems. Nevertheless, disorganised speech may limit therapeutic progress and act as a barrier to social recovery. Before starting an intervention, clinicians should carefully consider for whom the FTD is a problem and the benefits of intervention. In some cases, targeting FTD might be necessary to complete work on goals that are more personally meaningful to the client. A collaborative, person centred approach could reduce clients' anxiety around undertaking therapy, which, in turn, could improve the quality of communication within sessions.

Structure of sessions

Several adaptations to the structure of CBT might be required when working with FTD. There is some evidence to suggest that FTD can interfere with therapeutic alliance (Cavelti et al., 2016), and emphasis should be placed on engagement and rapport building. Therapists may wish to employ shorter, but more frequent, sessions with the option of a break. Agendas should be structured, but limited to one or two key points, with the sessional objective clearly stated at the beginning and reviewed at the end of each session. Should clients go off topic, it can be useful to redirect clients' attention back to the agenda, remind them of what they initially wanted to cover and renegotiate

the plan as necessary. Collaboratively focusing therapy on one clear goal at a time can reduce therapeutic drift, whilst allowing an individual to break down their difficulties into more manageable components.

It is necessary for the therapist to adapt their communication style to meet the needs of the client with FTD. At times, therapists may need to be less open and protracted in their questioning; communication should be short and specific, with clear take home messages. Repeating terms and phrases using the client's own language, and setting reminders, can help to cement learning. The therapist should be inventive in delivering this information, and may wish to use verbal, written, and diagrammatic material. In the past, we have found that asking clients to audio record their own sessional summaries can carry more weight than therapist led feedback. Writing mini-therapeutic blueprints after goal completion can also help to maintain progress and engagement over time.

Feedback as a change strategy

Gaining permission to share feedback is a vital first step in therapy, which can increase client's insight into their communication difficulties. We find that some of the most useful insights in CBT come from 'in the moment' assessment and processing (e.g. 'what's going on right now?'). Clinicians might start by having a sensitive, but frank, discussion with the client about their disorganised speech. They may wish to identify and highlight times where it became difficult to follow the client or they went off topic. It can also be helpful to review segments of audio recordings in order to increase recognition of communication difficulties ('how does this sound to you?'). As early as possible, the therapist should get permission to interrupt or stop the client during sessions, in order to clarify information and bring the focus back onto the client's agenda. Some authors recommend the use of a buzzer system, where both the client and therapist can halt and evaluate what is being communicated (Wright et al., 2006). We suggest that therapists utilise such 'pit stops' flexibly in accordance with the preferences of the client and only if it helps to meet the client's presenting goals (i.e. allows for a shift onto the processes significant to the effectiveness of therapy). Sharing responsibility and increasing collaboration can help to ensure that interrupting the client does not appear punitive or lead to a breakdown of the therapeutic relationship.

When clarifying information, therapists should seek to understand the meaning that the client is trying to convey. This can involve breaking down large segments of speech and trying to derive key take home messages. It can also mean investigating the bridging idea between seemingly unrelated topics of conversation (e.g., what led you from A to C). Understanding the journey that the client has taken to a particular topic can reveal thoughts that would otherwise be lost. For example,

a client who jumps from talking about his neighbour's dog to a local dentist may have a latent fear of both that explains the passage of speech. We have sometimes found that increasing awareness of problems in communication can help clients to better monitor and regulate their own speech. It can also be useful to do exercises whereby the client paces or slows down their dialog.

Emotional salience

As previously mentioned, emotionality and stress may exacerbate thought disorder (Haddock et al., 1995). At times, it can be useful to share and explore this finding with clients (Beck et al., 2009). We recommend using an ABA design behavioural experiment to demonstrate the impact of emotionally laden topics on clarity of speech (i.e. start with a neutral topic, move onto an emotionally salient topic, and return to a neutral topic). Changes in clarity of speech should be observed, discussed, and linked to appraisals of control. The therapist can also use the results to enable communication within therapy; relaxation exercises or neutral topics could reduce stress at the beginning of sessions or when communication is most difficult. At times, clients may feel under pressure within the formal settings of a clinic or hospital. It can therefore be helpful to discuss issues whilst increasing behavioural activation (e.g. walking and talking). Simple pre- and post- self-report Likert scales, measuring clarity of thinking and communication, can be useful to measure the effectiveness of these exercises, which can then be shared with the client promoting perceived control.

Addressing currently unhelpful appraisals

We predict that negative appraisals of FTD can substantially increase levels of distress and attentional focus, which in turn could exacerbate language/thinking difficulties in a cyclical relationship. Providing normalising information (e.g. stories of recovery, affective reactivity of speech in individuals without psychosis) may increase understanding and challenge negative assumptions and internalised stigma. This can be particularly useful when the service user has developed catastrophic interpretations of their experiences (e.g. my brain is permanently damaged). Clinicians may wish to employ a range of cognitive behavioural exercises to help clients scrutinise their thoughts and beliefs about communication difficulties (see Morrison et al., 2004).

There is evidence that negative appraisals about social acceptance exacerbate communication difficulties in individuals already vulnerable to these experiences (Grant & Beck, 2009). Indeed, for some clients, the experience of FTD appears to interact with social anxiety; clients have reported losing the ability to think, speak, or function properly, which leads to concerns about social judgement and further exacerbates their symptoms. Whether we can define such experiences

as FTD as opposed to cognitive difficulties within the context of social anxiety is debateable. However, there may be utility in drawing upon cognitive models of social anxiety (e.g. Clark & Wells, 1995) to conceptualise the problem and identify interventions to reduce the distress associated with their thought and communication difficulties in social situations. For example, this could include behavioural experiments in which the therapist models “going blank” during a social interaction, and where the client observes others’ reactions to disconfirm their feared predictions, before practising the experiment themselves.

There is increasing evidence for the role of metacognitive beliefs in the maintenance of symptoms of psychosis (Morrison et al., 2005). Such beliefs can influence cognitive attentional processes increasing preoccupation with and distress from thinking. Clinically, we have sometimes observed positive beliefs about elevated or pressured speech (e.g. it helps to get my point across) and about communicating excessive or pseudo-philosophical detail (e.g. I want to demonstrate my knowledge). We hypothesise that certain forms of FTD represent a strategy that clients use to meet their own idiosyncratic goals during communication. In these cases, helping the client to explore the advantages and disadvantages of their thinking or communication style may be useful.

Addressing maintaining behaviours

Clients might engage in a number of idiosyncratic coping strategies and behaviours that maintain and exacerbate their FTD. For example, some clients report trying to organise, suppress or manipulate their thoughts in order to improve their difficulties. Thought suppression experiments can sometimes be helpful to highlight the lack of utility in this endeavour (Wells, 2006). Interventions could include examining the utility of certain responses, and experimental manipulations to increase or decrease behaviours to evaluate their impact on the problem. Although currently untested in this specific context, it is possible that detached mindfulness exercises could also help to demonstrate flexible attentional control over thoughts, and reduce perseverative processes, such as worry and rumination about ‘thinking’ (Morrison et al., 2014).

Cannabis use (Caspari, 1999) and substance misuse (Buhler et al., 2002) are associated with a worse long-term course of FTD in psychosis. It might be helpful to highlight the impact of drug use through psychological formulation, and develop strategies for identifying and coping with high risk situations, whilst reducing cravings. However, note that CBT with motivational interviewing has sometimes demonstrated only small, and non-statistically significant, effects on substance misuse in psychosis (Barrowclough et al., 2010). Given the link between clarity of communication and emotional salience, it might be beneficial to increase coping in adverse situations (e.g. assertiveness

techniques) and address systemic stressors (e.g. high expressed emotion relatives). This may require some general coordination of care alongside the more focused cognitive behavioural work.

Discussion

This article considered how CBT might be adapted for working with individuals experiencing FTD, including assessment, formulation, and intervention strategies. The proposed techniques represent a starting point from which to develop, evaluate and refine therapy. It is important to recognise that FTD is a heterogeneous and multidimensional construct. Various, and sometimes distinct, cognitive and language difficulties have been observed in individuals with psychosis, which likely lie on a continuum of severity (Roche et al., 2014). Therefore, although we provide guidance on how therapists might use CBT in the presence of FTD, they also need to remain flexible and adapt our recommendations to meet clients' presenting needs and priorities.

We know relatively little about FTD, but it is likely due to disturbance in the organisation, control and processing of thoughts (e.g. Holzman et al., 1986). Theories of FTD have reflected changing paradigms within psychology (Harrow & Quinlan, 1985). Psychoanalytical thinking largely influenced early theories and approaches, which later became more in line with family therapies. In the current article, we have argued that understanding FTD from a cognitive-behavioural perspective might be beneficial. We propose that certain appraisals and coping strategies could exacerbate or maintain difficulties with speech and thinking over time. We also suggest a number of ways that therapists might address these difficulties using cognitive behavioural techniques. This certainly requires further research and clarification in a well-defined cognitive model of thought disorder. This, in turn, will help to inform nomothetic formulations and guide clinical practice.

To finish on a note of caution, there is currently very little research exploring the effectiveness of CBT for individuals with FTD. Large randomised controlled trials evaluating CBT for psychosis often exclude individuals with high levels of thought disorder due to perceived difficulties in engaging and working with these individuals. This view is supported by research suggesting that thought disorder can reduce therapeutic alliance in CBT (Cavelti et al., 2016), which is associated with key outcomes in therapy (Goldsmith et al., 2015). In the future, it would be useful to explore the utility of CBT in clients with FTD employing or adapting the strategies discussed in this paper.

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