Third generation behavioural therapy for neurodevelopmental disorders: review and trajectories

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Abstract

Purpose – The purpose of this paper is mainly to present a general review of third generation cognitive-behavioural therapies (CBTs), and to debate whether these approaches are applicable to persons with neurodevelopmental disorders (NDD).

Design/methodology/approach – Despite the lack of consistent literature focused on this population, the authors have considered the available general literature on the third generation of CBTs and analysed core issues of the processes within the context of intellectual disabilities and Autism spectrum disorder.

Findings – The evidence from typical developing population studies and the emerging literature specific to people with NDD is convincing, but there is a need for studies exploring how and when these therapeutic approaches can be applicable. Two behavioural approaches of third generation therapies – acceptance and commitment therapy and mindfulness-based CBT – appear to have the most potential to be adapted for robust intervention for the broad spectrum of persons with NDD.

Research limitations/implications – The number of studies and methodologies applied are a clear limitation and the present paper is only exploratory.

Originality/value – The paper supports clinicians to use the emerging protocols, and to replicate and implement procedures and techniques.

Keywords Intellectual disabilities, Autism spectrum disorder, Cognitive-behavioural therapy, Acceptance and commitment treatment, Mindfulness-based therapy, Third wave psychotherapies

Paper type General review

Introduction

The main feature of the first wave of traditional behavioural therapy was to focus on observable behaviour and direct interaction of the human being with the environment. Among the well-known figures of this wave were Ivan P. Pavlov, John B. Watson, Edward L. Thorndike and Burrhus F. Skinner. The main treatment techniques included exposure, skills training, behavioural activation (BA), token economy, among others. The major limitation of these approaches was that they did not account for the problems of thinking and the influence of private events on behaviour. This gap was addressed by cognitive theories, which have been promoted over the past 30 years through the work of key figures such as Aaron T. Beck and Albert Ellis. A simple example of the therapeutic process typical of this “second wave” (or simply cognitive-behaviour therapy (CBT)) is the aim to change illogical or irrational thinking, seen as the primary cause of any problem. CBT represents a significant advance: its base of evidence is wide, including outcome research with randomized control trials across a varied range of disorders. However, to date no clear scientific link has been established between the processes of cognitive change and the outcomes.
This scenario made possible the emergence of new treatment models focused on the function of problematic cognitions (the process) rather than the content (Webster, 2011). In contrast with the first wave, the third wave put a strong focus on private events, and did not try to change the form or frequency of these private events. These new treatments have developed an expanding base of evidence in just a few years. This third wave of CBT is commonly based on acceptance and mindfulness procedures: it includes dialectical behaviour therapy and mindfulness-based cognitive therapy (MBCT) as well as acceptance and commitment therapy (ACT).

The “third wave” of behavioural therapies for typical developing population

The third wave of behavioural psychotherapies is an important arena of modern psychotherapy development, which has added extensively to the empirically supported treatments (EST) for mental suffering. The presented methods include a diversity of new techniques and open up possibilities for treatment of mental disorders such as borderline personality disorder, chronic depression or generalized anxiety disorder that up to now have received little attention. In 2008 there was a strong reaction when Ost published the first meta-analysis on the efficacy of the third wave of behavioural therapies, and concluded that no third wave therapy fulfils the criteria for EST. However, using cumulative research, we can state that all third wave therapies fulfill minimal entry criteria for EST (Kahl et al., 2012): these methods are “principally efficacious” and they can be considered “empirically supported”, even if the amount of evidence is still unsatisfying.

We will consider below the main expressions of these behavioural therapies, and we will try to outline the core assumptions and processes involved for each approach:

- ACT;
- BA;
- cognitive-behavioural analysis system of psychotherapy;
- dialectical behavioural therapy (DBT);
- metacognitive therapy (MCT);
- MBCT; and
- schema therapy (ST).

**ACT**

ACT is a behavioural therapy system that is based on functional contextualism and the relational frame theory. It postulates the following psychopathological processes as central to human suffering and mental disorders: cognitive fusion; experiential avoidance; attachment to a verbally conceptualized self and a verbally conceptualized past; lack of values or confusion of goals with values; and absence of committed behaviour that moves in the direction of chosen values. The treatment contains experiential modelling, psycho-education about key mechanisms, exercises in mindfulness and cognitive de-fusion. The value orientation of the patient is elicited and shared, and patients are reinforced in value-driven behaviour in contrast to behaviour driven by emotional or experiential avoidance. There are an impressive number of randomized controlled trials (RCTs) testing the efficacy of ACT in heterogeneous clinical conditions.

**BA**

BA emerged from studies analysing the necessary components of classical cognitive therapy (Dimidjian et al., 2006), and has evolved from a long behavioural tradition seeking to increase positive reinforcement by scheduling appropriate patient behaviours and thus achieving antidepressant action (Dobson et al., 2008). Research has shown that BA is a stand-alone component rather than a simple component of cognitive therapy, and that it has a similar or superior efficacy. Important changes compared with earlier versions are a shift from “pleasant” activities to value-driven activities (Kahl et al., 2012), a shift strongly influenced by ACT and the adoption of the concept of “opposite action” from DBT (Jacobson et al., 1996).
**DBT**

DBT was originally developed by Marsha Linehan (1993) for treating parasuicidal patients with borderline personality disorder, and has been adapted for many other clinical issues such as substance abuse and eating disorders. DBT conceptualizes that skills deficits in the area of emotion regulation are at the centre of these disorders (Kahl et al., 2012). DBT includes the practising of different skills in the areas of mindfulness, distress tolerance, emotion regulation and interpersonal effectiveness (McKay et al., 2007; Linehan and Koerner, 2012).

**MCT**

Metacognition is the aspect of cognition that controls mental processes and thinking. Knowledge about metacognition originated in research on learning and decision making in children (Kahl et al., 2012). MCT (White et al., 2011) evolved from classical cognitive therapy; it postulates that at the core of depressive and anxiety disorders there is the “cognitive attentional syndrome”, *id est* cognitive processes such as worrying, rumination, dysfunctional threat monitoring and dysfunctional cognitive and behavioural copying. A study by Solem et al. (2009) indicated that change in metacognitions was a better predictor of outcome than change in cognitions in patients with obsessive compulsive disorder treated with exposure or response prevention techniques. MCT abstains from content-oriented interventions, uses attention training techniques to develop skills in cognitive flexibility, teaches a special form of mindfulness (detached mindfulness) and guides cognitive and behavioural experiments to change metacognition.

**MBCT**

MBCT is a recent addition to CBT that generally aims to change the individual’s relationship to thoughts and feelings instead of changing the individual’s response to irrational thoughts (Shapiro and Carlson, 2009). The focus is to learn to experience dysfunctional thoughts as internal events separated from the self (Segal et al., 2002). Like CBT itself, mindfulness-based approaches encompass a wide range of techniques that are customized to the needs of the individual.

MBCT uses psycho-education and encourages patients to practise mindfulness meditation. A core goal is to develop metacognitive awareness, which is the ability to experience cognitions and emotions as mental events that pass through the mind and may or may not be related to external reality (Taylor et al., 2013).

**ST**

ST is derived from classical cognitive therapy and was originally developed for the treatment of personality disorders. Compared with cognitive therapy, it has substantially elaborated the concept of schemata and modes. ST is integrative in the sense that it uses emotion activation techniques originating in Gestalt and Psychodrama; but it is strictly behavioural in the models communicated to the patient (Kahl et al., 2012). A basic ability reinforced in ST is to recognize the present dysfunctional modes of functioning, such as the detached protector mode, and to have behaviour guided by the healthy adult mode (Arntz and van Genderen, 2009).

**Third generation behavioural therapies for persons with intellectual disabilities (ID)**

We will examine the case of ID, as it is a major example of how behavioural therapies can be adapted to neurodevelopmental disorders (NDD).

People with ID are potentially more susceptible than others to mental health problems. Despite this, the assessment and treatment needs of subjects with ID have often not been recognized, and they have experienced significant obstacles in accessing appropriate services (Taylor et al., 2013).
Moreover, in the past, psychological therapists have avoided engaging with clients with ID, probably because of the lack of assessment tools (negative false), or because of the scarcity of reliable treatment. The research literature supporting the use of psychological therapies for clients with ID is slowly developing. A common opinion in papers is that significant gaps in the evidence base need to be filled. Accordingly, the analysis of Taylor et al. (2013) suggests there are a number of aspects to be defined: first, more rigorous outcome studies (e.g. RCTs) to establish the efficacy of clearly defined psychotherapeutic interventions for specific types of problems; second, more research onto the active ingredients of psychological therapies and mechanisms of change for people with ID experiencing mental health problems; third, follow-up research examining sustainability of treatment effects over time and the transferability of gains from treatment settings into routine care conditions; and fourth, an understanding of the economic consequences of delivering these treatments.

General adaptation to treatment techniques

To work effectively with a person with ID, a conscious effort is needed to adapt the style of presentation to take account of the client’s limitations. Cognitive deficits can create severe problems in therapy if ignored, and include a range of information-processing abilities limitation. Table I (Taylor et al., 2013) summarizes deficits and potential solutions that may be encountered in four domains of cognition: intellect, emotional literacy, memory and executive functioning. These issues must be considered during the assessment phase to drive the adaptation of the treatment process.

The evidence of efficacy

There has been intense debate over the last decade about the relationship between “cognitive” and “behavioural” variables in the treatment of people with ID (Taylor et al., 2013): Sturmey (2006) has questioned the assertion that there is a sufficient evidence base to justify the widespread use of cognitive therapy with people with ID. He pointed out that in making the case for cognitive therapy with this population, a number of inappropriate assertions and errors have been made in the literature concerning behaviour analysis. Such errors include misrepresenting behavioural analysis as an approach that is limited to high-frequency problems in people with severe ID in institutional settings, mislabelling behavioural interventions as cognitive therapy, and “attributing the alleged efficacy of treatment packages to cognitive therapy, when it is more parsimonious to attribute it to behavioural elements of the package of known efficacy” (Sturmey, 2006, p. 110).

According to Sturmey, clinicians and researchers should always try to point out the basic behavioural elements of the therapeutic process used, when relating to a person with ID, particularly if the person has a low-functioning word missing?

<table>
<thead>
<tr>
<th>Cognitive domains</th>
<th>Specific processes</th>
<th>Implications for therapy</th>
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<td>Intellect</td>
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<td>Simple words and short sentences</td>
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<tr>
<td></td>
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<td>“CBT skills”</td>
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<td>Emotional literacy</td>
<td>Assimilation</td>
<td>Frequent repetition and more sessions</td>
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<td></td>
<td>Recall of experiences</td>
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<td>Memory</td>
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<td>Use of reminders and involvement of carers</td>
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<td>Executive functioning</td>
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The case of mindfulness approaches

Mindfulness has been described as a bare awareness of thoughts, feelings and perceptions as they occur (Mingyur Rinpoche and Swanson, 2007). Clinical application of mindfulness arises from the conceptualization of it as both an outcome (i.e. awareness) and a process (i.e. practice). Shapiro and Carlson (2009, p. 4) explain it thus: “(a) mindful awareness: an abiding presence or awareness, a deep knowing that manifests as freedom of mind (e.g. freedom from reflexive conditioning and delusion); and (b) mindful practice: the systematic practice of intentionally attending in an open, caring, and discerning way, which involves both knowing and shaping the mind”. Nevertheless, there is a promising and emergent literature (particularly the group of Singh and Lancioni; see a broad selection of papers in Singh et al., 2013) that provides some support for the effectiveness of mindfulness-based procedures for individuals with ID. The research is limited to a few mindfulness-based procedures, and the outcomes have been evaluated using only single-subject experimental methodology. Much more well-controlled research is needed before we know if the various mindfulness-based strategies are truly effective in the daily life of individuals with ID, who they work for, and why or how the strategies work. However, existing research does indicate that individuals with ID can learn and use mindfulness-based strategies to control some of their behaviours (Taylor et al., 2013).

The case of ACT

ACT formulates that human suffering (i.e. mental health problems) arises primarily from people’s efforts to avoid unwanted internal experiences (i.e. thoughts and emotions). “Psychopathology is seen as the consequence of this learning on everyday lives” (Hayes et al., 2012, p. 62). While the avoidance of unpleasant experiences makes sense in the external world, when this strategy is applied to the internal world of cognitions and emotions, it fails to be effective. The literature on thought suppression shows that the more one tries to avoid, manage or change negative thoughts, the worse they can become (Wegner and Zanakos, 1994).

In ACT, cognitive fusion refers to people believing the content of their thoughts to be literally true. This process is well known in the literature as a key factor in the development of mental health difficulties. For example, Clark (1986) describes how a belief in the thought that a slight breathing difficulty or increased heart rate are in fact the early signs of an impending heart attack is likely to increase a person’s anxiety. This in turn will increase their physical symptoms, leading to a vicious cycle that results in a panic attack. Rather than changing a person’s thoughts, ACT works to undermine their fusion with the literal content of their thoughts (i.e. their believability; Brown and Hooper, 2009) (Figure 1).

In the ACT model, mindfulness and other experiences are used to help people notice their thoughts as they occur, rather than to narrow behavioural repertoire and to fuse with them. This enables people to relate to their thoughts differently (i.e. to re-contextualize them; Hayes et al., 2012)

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**Figure 1** How psychological problem develop according to ACT

![Diagram](https://via.placeholder.com/150)

Source: Webster (2011, p. 310)
and distances them from the literal content. In addition to defusing cognitions, ACT seeks to reconnect people with what is important to them and supports action in a valued life direction (Brown and Hooper, 2009). The aim of ACT is to help the client live the life they want to live, rather than simply avoid the negative or unwanted aspects of it (Figure 2).

Brown and Hooper (2009) published one of the first studies in which the ACT model is applied to a person with ID, opening a new perspective: ACT can help people with moderate to severe learning disabilities. In this single case study they concluded that CBT was not suitable for the subject because of her limited language and verbal reasoning skills, but they showed that she was able to engage in and benefit from ACT. The authors suggest that it may be that the activity-oriented, experiential basis of ACT enabled the patient to participate in the therapeutic process more readily than with a more traditional CBT approach.

Pahnke et al. (2014) recently published a quasi-experimental pilot study of an ACT-based skills training group for students with high-functioning Autism Spectrum Disorder. The ACT group reported reduced levels of stress, hyperactivity and emotional distress, and also showed increased pro-social behaviour. Changes were stable or further improved at the two-month follow-up.

The option of training and treatment using ACT for subjects with ID and ASD appears stimulating and convincing, suggesting a wide range of potential applications.

**Literature review update**

We can consider two very recent books as the main references for the issues discussed. The first is the work by Taylor et al. (2013) on psychological therapies for adults with ID, which covers a wide range of approaches and clinical issues, citing the emerging research. The second contribution is by Sturmey and Didden (2014), and is an indispensable compendium for the clinician, focused on evidence-based intervention for ID.

In addition to these contributions, we ran an exploratory search of the literature to 2015 so that we could compare the previous analyses and commentary. The searches included English-language journal articles using Medline only, without restriction of publication year and inputting the term “third wave behaviour therapies” with the following keywords: CBTs, behavioural (behavioural) therapies, ACT, BA, cognitive-behavioural analysis system of psychotherapy, DBT, MCT, MBCT, ST. This search was combined with a second term “Intellectual Disabilities” with the following keywords: learning disab*, intellectual disab*, neurodevelopment disorders, mental retard*.

![Figure 2: Psychological flexibility as model of human functioning and behaviour change](source: Hayes et al. (2012, p. 62))
mental disab*. Abstracts of the records returned from these electronic searches were reviewed to identify studies to be included. The reference lists for the included studies were also examined to identify additional articles for possible inclusion. Table II describes the preliminary results.

It clearly emerges that we are still far away from having a significant literature. When the papers searched were filtered to select only “clinical” application of third wave behavioural therapies for persons with ID or their staff members or family members, the volume of research is ancillary.

Discussion

Thornicroft et al. (2011) describe a very practical model of the process of development of evidence. Figure 3 gives a sample of this model, which has been suggested in a number of works by Richard Hastings as useful to represent the phases of evidence development and emphasizing increasing evidence (from left to right in the figure).

Phases 1 and 2 of Thornicroft et al.’s translational continuum model refer to the identification of key intervention components and manualization of interventions, and then the initial testing of interventions in exploratory studies (Hastings, 2012). Exploratory outcome studies might include RCT designs.

Taylor et al. (2013) conclude that psychological therapy outcome research involving adults with ID is working through these phases, although much still remains to be done. The present scenarios of research include: case study and case series descriptions, single case designs with some element of experimental control and group design studies – often simple pre- and post-test designs, but including a number of controlled studies, especially for CBT.

The perspective must include different kinds of knowledge (Taylor et al., 2013): first, more robust research designs (especially RCTs) to demonstrate the efficacy of psychological therapies; second, more carefully described and manualized interventions; third, active control intervention conditions in research designs; and fourth, controlled study designs demonstrating which therapeutic interventions tend to lead to better outcomes than others. Without this desired information, the only conclusion that can be drawn with confidence is that psychological therapy is more effective than no intervention or “treatment as usual” (often likely to consist of no specific intervention).

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<th>Figure 3</th>
<th>A model of the process of development of evidence</th>
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<td>Define interventions, manualize, initial testing Phase 1</td>
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<td>Efficacy RCTs Phase 2</td>
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<td>Implementation Phase 4</td>
<td>Increasing evidence</td>
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Source: Hastings (2012)
Taylor et al. (2013) note that currently there are no psychological therapeutic interventions for mental health problems that have attained Phase 3 evidence and are ready for large-scale implementation in routine clinical settings.

Conclusion: why behaviour therapies?

Applied behaviour analysis has, over the past 30 years, generated a source of experience, knowledge and expertise that is central to the development of mental health treatment, both for the general population and people with ID.

If we focus on experiences of applying third wave therapies to the population with ID, a very interesting set of potentialities emerges, particularly related to the development of ACT and mindfulness-based therapies. Following Sturmey (2006), we should assume that the potential benefit and efficacy of these approaches is due to the behavioural elements included in the treatment. In fact, ACT and mindfulness-based treatments are largely relying on learning principles, and adaptation to people with ID (particularly severe disabilities) requires the combined use of third and first generation behavioural techniques.

Consistent with Taylor et al. (2013), we propose some priorities for future research concerning psychological therapies for adults with ID and mental health problems. The first need is for basic science focused on mental health in adults with ID. Here, we need to develop more robust methods of assessing mental health in adults with ID along with high-quality research on the adaptation of mainstream assessment measures of mental health. As a second priority, we need more reliable specialist assessments of mental health problems experienced by adults with severe and profound ID, and consequently more reliable treatment. A third priority area is the need for large-scale, high-quality RCTs exploring both efficacy and then effectiveness of psychological therapies for adults with ID. Finally, a new area of research is needed with a clear focus on implementation science and service model design and evaluation.

References


Further reading


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