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MINIREVIEWS

# Empirically supported psychological treatments: The challenges of comorbid psychiatric and behavioral disorders in people with intellectual disability

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# Abstract

This paper reviews the current state of knowledge on psychological interventions with empirical evidence of efficacy in treating common psychiatric and behavioral disorders in people with intellectual disability (ID) at all stages of their life. We begin with a brief presentation of what is meant by psychiatric and behavioral disorders in this population, along with an explanation of some of the factors that contribute to the increased psychosocial vulnerability of this group to present with these problems. We then conduct a review of empirically supported psychological therapies used to treat psychiatric and behavioral disorders in people with ID. The review is structured around the three generations of therapies: Applied behavior analysis (e.g., positive behavior support), cognitive behavioral therapies ( e.g., mindfulness-based cognitive therapy), and contextual therapies (e.g., dialectical behavior therapy). We conclude with some recommendations for professional practice in the fields of ID and psychiatry.

Key Words: Behavior disorder; Intellectual disability; Psychiatry; Applied behavior analysis; Cognitive behavioral therapies; Contextual therapies

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**Core Tip:** Psychiatric and behavioral disorders are more common in people with intellectual disability (ID) than in the population without ID. Although there is some consensus that empirically supported psychological treatments for psychiatric disorders in the general population can be adapted for people with ID, there is scant published evidence about their application in this population. We discuss the empirical evidence for the application of psychological treatments in people with ID. Our review is structured around the first-, second- and third-generation therapies.

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# INTRODUCTION

Despite the significant challenges in establishing an accurate figure, it is estimated that approximately 1% of the population has some form of intellectual disability (ID)[1]. The causes of ID can be extremely varied, ranging from genetic alterations (e.g., chromosomal or single gene alterations) that are often associated with more severe forms of ID, to environmental factors (e.g., nutritional deficiencies, extreme social deprivation, or child abuse) that are often linked to milder forms.

Whatever the cause, the recommendation when defining ID is to adopt a biopsychosocial approach in which disability is conceived as the interaction of the person with their context[2,3]. Environments can therefore be more or less facilitating, and as a result, attenuate or accentuate the disability depending on existing barriers and supports. ID is a neurodevelopmental disorder whose diagnostic criteria can be found in the 5<sup>th</sup> edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)[4] and the 11<sup>th</sup> edition of the International Statistical Classification of Diseases and Related Health Problems (ICD-11)[5]. It is characterized by significant limitations in intellectual functioning and adaptive behavior that appear before the age of 22 years [6].

For most of the disorders in these manuals, the diagnosis of a mental disorder relies on clinical judgment. To diagnose ID, clinical judgment is also important in the selection, administration, and interpretation of standardized tests used to determine the "significance" of the limitations in the person's intellectual and adaptive functioning, which is defined as two standard deviations or more below the population mean. This article does not focus on psychological treatments for the core symptoms of ID (for an interesting review on this topic see Thurm *et al*[7]); rather, it discusses the treatment of comorbid psychiatric or behavioral disorders in people with ID, the reason being that most interventions with this population are tertiary prevention methods aimed at treating associated conditions rather than its core features. These comorbidities are in fact one of the main causes of exclusion for people with ID and one of the most frequent reasons why they are referred to mental health services.

# PSYCHIATRIC AND BEHAVIORAL PROBLEMS

There is a growing body of literature on the prevalence and treatment of psychiatric and behavioral problems in people with ID[8]. Most of the studies report that such problems are common across the lifespan for this population group. Data on prevalence rise up to 49% [9], and rates are higher in people with more severe disability<sup>[10]</sup>.

The range of problem behaviors exhibited is vast, the most frequent being selfinjury, aggression toward others, disruptive behaviors, inappropriate sexual behaviors, stereotyped behaviors, and pica[11]. Problem behaviors may have a biological, psychological, social, or environmental etiology; or they may be the result of a combination of these factors. They may be a response to a specific social situation ( *e.g.*, rejection), stress (*e.g.*, a major transition, loss of a loved one), or may appear as part



of the symptomatology of a psychiatric disorder (e.g., elevated irritability or paranoid ideation associated with a psychotic disorder may lead to aggression).

Thus, problem behaviors are not defined as a diagnostic category, but are framed within a contextual, non-etiological model where the behaviors are not problematic per se. Whether they are considered to be a problem behavior depends on a number of factors, such as their characteristics (*i.e.*, frequency, duration, intensity), personal variables (e.g., age), or contextual variables (e.g., social norms that govern the environment in which the behavior occurs; the interpretation and meaning given to the behavior by observers). It is vitally important to understand that a problem behavior serves a function; the responsibility of professionals is first-and-foremost to find out what the person wants or needs (e.g., attention, tangible), trying to communicate (e.g., pain, discomfort), or trying to escape (e.g., demand or situation), which will then allow them to design and implement an intervention that responds to the function of said behavior so that the problem behavior is no longer needed[12].

Attitudes toward psychiatric disorders in people with ID have evolved over the years: first, there was outright denial (e.g., until the mid-twentieth century, the possibility that this population might experience psychiatric disorders was not even recognized); there has also been a phenomenon known as diagnostic overshadowing (where the symptoms arising from physical or psychiatric disorders are misattributed to ID, leading to denied diagnosis and treatment); and, at the other extreme, it is common today to have reports of prevalence rates that double or triple those observed in the population without ID. In childhood and adolescence, for example, the most commonly reported comorbid disorders in this group are attention-deficit/ hyperactivity disorder (30%), problem behaviors, autism spectrum disorder (ASD), anxiety disorders, and depressive disorders[9].

A study by Hughes-McCormack et al[13] confirmed ID as a predictor of psychiatric disorders [odds ratio (OR) = 7.1; 95% confidence interval (CI): 6.8-7.3], as they found a substantially higher prevalence of psychiatric disorders at all ages compared with the population without ID. The scientific literature also noted that when a diagnosis of ID is added to a diagnosis of ASD, the likelihood of other co-occurring psychiatric disorders is much higher than in the general population (OR = 130.8; 95%CI: 117.1-146.1)[14].

It is now widely accepted that people with ID experience the full range of psychiatric disorders as people without ID. The disagreement lies in whether these disorders manifest themselves (i.e., signs and symptoms) in the same way or rather in an "atypical" way. As Tassé[15] pointed out, some clinicians have proposed using certain behaviors as equivalents to DSM symptoms, whereas others feel that there is lack of evidence to support behavioral equivalents. The result is a dichotomy opposing those who defend the use of conventional diagnostic systems (DSM, ICD) and those who prefer adaptations specifically developed for people with ID. Reference manuals for the latter would include, for example, the Diagnostic Manual-Intellectual Disability (DM-ID-2)[16] - an adaptation of the DSM-5 - and the Diagnostic Criteria for Psychiatric Disorders for use with Adults with Learning Disabilities/Mental Retardation (DC-LD)[17] – an adapted version of the ICD-10.

## INCREASED VULNERABILITY

The prevalence rates cited above can be explained by the increased biopsychosocial vulnerability in people with ID to develop problem behaviors and psychiatric disorders. It is thus generally accepted that there is a greater biological vulnerability, which predisposes people with ID, for example, to show certain behavioral phenotypes in specific genetic syndromes, alongside the interaction of other psychological and contextual factors often unique to people with ID. We will now look at some of the factors that are commonly associated with problem behaviors and psychiatric disorders.

#### Health problems and difficulties accessing health services

People with ID experience more health problems than the general population. They are more frequently affected by cardiovascular diseases, obesity, diabetes, epilepsy, chronic constipation, kidney disease, osteoarticular disorders, and thyroid disorders [18]. They are also more likely to have poorer oral health[19], lower physical activity levels, higher sedentary behavior, and poorer sleep hygiene<sup>[20]</sup>.

People with ID experience a number of barriers to accessing preventive health care services compared to the general population<sup>[21]</sup>, to receiving routine medical care<sup>[22]</sup>



and accessing mental health services [23]. The scientific literature cites inadequate training of mental health professionals, organizational barriers, lack of services, and poor quality of services as the main obstacles to accessing appropriate mental health care[24]. Barriers are even greater for those with the most severe disabilities[25,26].

#### Lack of training and negative attitudes among health professionals

The attitudes of health professionals toward people with ID have a major impact on the supports and care they provide. Yet, as we have already mentioned, multiple studies have highlighted the lack of ID training among social and health care professionals<sup>[27,28]</sup>, which has repercussions on the quality of emotional support they provide<sup>[29]</sup>.

Among the difficulties in providing satisfactory care, professionals cite not only heavy workloads and resource constraints, but also their own feelings of insecurity, stress, frustration, embarrassment, and fear of dealing with this population[28,30,31]. Worse still, some studies have reported blatant examples of disrespect, such as making negative comments while the person is present, or completely ignoring the person with ID and addressing their companion instead<sup>[32]</sup>. It is not uncommon for health care providers to stereotype people with ID[31], to disregard this population's preferences and decisions regarding their own medical care[33], or even to deny them health care services altogether[34].

A possible explanation for these negative attitudes is that a large proportion of health care professionals are unfamiliar with the essential components that make up the daily lives of people with ID[31]. In fact, many health care professionals have never had contact with this population[30], and yet contact and interaction are precisely what is required in order to educate health care professionals about life with a disability and promote more positive attitudes.

#### Polypharmacy

The issue of polypharmacy in people with ID is also frequent and worrisome. Treating multiple comorbidities and the frequent secondary health problems experienced by people with ID often results in complex polypharmacological interventions, with significant health implications and a high risk of adverse side effects and interactions between medications<sup>[28]</sup>, many of which often go undetected<sup>[35]</sup>.

Studies tend to converge in pointing out the high use of antibiotics, antihypertensive drugs, and lipid-lowering agents, which are administered together with anticonvulsants, psychotropics, antidepressants and antipsychotics. Bowring et al[36] found that 71% of people with ID took some type of medication and, of these, 38% took psychotropics. In fact, it is estimated that between 22% to 72% of people with ID take antipsychotics [36,37], and up to 13% take them at doses higher than what is recommended in medication guides[35]. In many cases, the underlying reason for these high polypharmacy rates is unrelated to the presence of a diagnosed psychiatric disorder. According to Sheehan *et al*[10], 71% of people with ID using antipsychotics had no record of a diagnosed mental illness. It would therefore seem that psychotropic medication is a common treatment for psychiatric and behavioral problems in people with ID, to the detriment of other non-pharmacological approaches such as behavioral therapies or positive behavior support (PBS)[38].

The situation is all the more concerning when we consider that the evidence supporting the safety of these medications in this population is lacking because people with ID are often excluded from randomized clinical trials[39]. Given the polypharmacy that a single individual may be taking at a given time, it is impossible to ignore the potential for dependence and substance use disorder.

#### Changes and transitions

People with ID may be exposed to a greater number of stressful situations, which are directly (e.g., health problems) or indirectly (e.g., rejection and exclusion) related to their disability and impaired coping strategies. These stressors often lead to a deterioration in their emotional state, triggering emotional difficulties[40,41].

Major life events and transitions, which increase as a person ages[42], require appropriate planning that is sensitive to the person with ID and that anticipates changes in order to avoid emotional stress<sup>[43]</sup>. Yet gaps in planning occur frequently throughout their lives, whether in transition from one service to another, when they are of school age, in employment or residential settings, or at end of life. These situations contribute to a higher prevalence of depression and anxiety.

End-of-life care deserves particular attention, given the many difficulties and barriers faced by people with ID in later life stages<sup>[44]</sup>. The loss of significant others



and the (often complicated or pathological) grieving process are extremely important issues because of the contextual and emotional changes that can result from a bereavement.

#### Rights violations

Based on the above discussions, it will come as no surprise that people with ID are more likely to encounter stressors: these include exclusion, interpersonal loss and rejection, overprotection and infantilization, lack of family and social support, stigmatization and low expectations, and rights violations and victimization[45]. The socioeconomic disadvantage that often accompanies ID increases the risk of negative life events[46]. In this context, there is an urgent need for effective measures to facilitate the full realization of the rights enshrined in the Convention on the Rights of Persons with Disabilities (CRPD)[47]; and to ensure that people with ID do not become victims of fundamental rights violations that increases their vulnerability to emotional difficulties. The quality of life conceptual framework has proven to be a useful vehicle to facilitate this task of fulfilling the specific rights highlighted in the CRPD for this collective[48-51].

## EMPIRICALLY SUPPORTED PSYCHOLOGICAL TREATMENTS

Psychological treatments with strong empirical support for efficacy and efficiency in people with ID are extremely scarce. One of the reasons to explain this paucity of empirical evidence is that most people with ID who present with problem behaviors and psychiatric disorders are not receiving appropriate psychological treatments. Although there is ample evidence showing that pharmacological interventions alone are less effective than behavioral interventions, treatment is regrettably often reduced to the use of physical (e.g., exclusion), mechanical (e.g., restraints), or chemical (e.g., psychotropic) interventions.

Further, considerable interindividual differences mean that evidence of the efficacy of an intervention in people with a lower level of support needs may not be generalizable to people with more significant and complex support needs, and vice versa. Most research into psychological treatments has focused on people with lower levels of support needs.

It is extremely difficult to conduct randomized clinical trials and large-scale studies, as people with ID may have such significant support needs making it ethically questionable to assign them to a waitlist control group. Moreover, in this area, small differences may be clinically significant, even when they are not statistically significant.

Finally, we must not forget that there is also evidence pointing to the effectiveness of intrusive and aversive interventions that in effect pose a threat to people's rights (hence introducing an ethical quandary). Considerable effort has been devoted to demonstrating that certain interventions are shown to be ineffective, as has been the case with facilitated communication[52,53].

We concur with Campbell et al[54], who warned against the oversimplification of the concept of effectiveness into "what works/doesn't work", and instead they recommended looking at what interventions work for whom, when, where, and how, assessing their appropriateness and identifying the factors that influence the outcomes (e.g., the quality of the therapeutic relationship). The fact remains, however, that there is a paucity of data supporting the efficacy or effectiveness of psychological treatments aimed at improving the mental health of people with ID. Empirical evidence in this area is still substantially limited [55-57] and the number of available studies are insufficient to make conclusive recommendations, although some interventions show promise, they still require testing in larger, more rigorous trials[58].

An example illustrating this dearth of evidence is a February 2021 Web of Science search for publications with "empirically supported" in the title; the search yielded 422 results, with only three including people with ID. The three articles were about the treatment of problem behavior (functional communication as a well-established treatment), phobic avoidance, and pica (behavioral intervention as a well-established treatment).

To begin to address this gap, Gómez and Navas[59] have listed some of the psychological interventions with the most empirical support for the treatment of problem behaviors or psychiatric disorders in people with ID, establishing their degree of recommendation and current level of evidence. Given the breadth of psychological treatments that could potentially be applied to the full range of problem behaviors and



psychiatric disorders in people with ID, in this paper we will use the classification based on the three generations or waves of therapies, described by Pérez-Álvarez[60]. A summary is presented in Table 1.

#### First-generation therapies

The first generation of behavioral therapy emerged as a rebellion against the prevailing clinical psychology based on psychoanalysis[60], for which the empirical evidence in people with ID was reduced to descriptive or anecdotal data that often generated more pain than progress. In opposition to these psychoanalytic approaches, the paradigms of classical and operant conditioning were advanced[60]. It was this second paradigm that eventually gave rise to behavioral therapy and applied behavior analysis (ABA), which are among the most widely used interventions and for which there exists the most empirical support for its effectiveness in the field of ID[54].

As Hartley et al<sup>[57]</sup> pointed out, interventions based on the principles of functional behavior analysis are, to date, the only ones included in published lists of effective treatments for people with ID. According to Hartley and colleagues, there is also consensus that differential reinforcement of other behaviors and differential reinforcement of incompatible behaviors increase the effectiveness of the intervention when combined with other behavioral techniques. In a review by Campbell *et al*[54] on the evidence-base for effective psychological interventions treating problem behavior in people with ID, functional analysis is categorized at the highest level of evidence ( i.e., "A" with at least one meta-analysis, systematic review, or randomized control trial of high quality and consistency) in two of the reviewed studies. For more information about this system of classification, see Campbell *et al*[54].

Functional analysis is a process aimed at understanding and empirically testing the function of a problem behavior and how it relates to events in the individual's environment (antecedents and consequences). Before determining the existence of a behavioral problem, a multidimensional assessment is needed to exclude health or psychological problems, or medication side effects that could account for the observed behavior in the individual. When these possible causes have been ruled out or treated, a functional analysis is carried out to understand the relationship between the problem behavior and its antecedents and consequences. We must not forget that problem behaviors can be an attempt to communicate a need (e.g., pain relief) or desire (e.g., food) by people who may lack the ability to effectively express themselves in other ways.

In this context, the principles of PBS emanate from the field of disability. PBS is based on respect for the person's values, and its effectiveness is evaluated in terms of improvements to quality of life. In fact, person-centered interventions such as PBS are recommended by the National Institute for Health and Care Excellence[61]. Lavigna and Willis<sup>[62]</sup> reviewed 12 studies that used PBS involving a total of 423 subjects. While the results demonstrated the efficacy of this intervention, most investigations were single case studies or used very small non-randomized sample sizes. In the review by Campbell et al<sup>[54]</sup>, studies using PBS were graded at a "B" level of evidence (*i.e.*, well-conducted clinical studies but no randomized clinical trials directly applicable to the target population, and demonstrating overall consistency of results) and "C" level (*i.e.*, widely held expert opinion but no available or directly applicable studies of good quality). The exception was the intervention by Hassiotis *et al*[63], a randomized controlled trial in which the combination of ABA-PBS together with a standard intervention was shown to be more effective than the standard treatment alone in reducing problem behaviors of lethargy and hyperactivity. McGill *et al*[64] demonstrated using a cluster randomized controlled trial of setting-wide PBS intervention was effective in significantly reducing problem behaviors in social care settings.

#### Second-generation therapies

The second generation evolved from the convergence of cognitive and behavioral therapy. Cognitive behavioral therapy (CBT) deconstructed the contextual and idiographic character of behavioral therapy to understand cognitions as the cause of emotional and behavioral problems, associating such cognitive "defects" with specific disorders[60].

Despite a paucity of evidence of its efficacy in people with ID, CBT has generated much interest and is often considered potentially useful, taking into account the significant methodological limitations of published studies. According to the research reviewed in a meta-analysis by Vereenooghe and Langdon[65], CBT could be a potentially effective treatment for anger and depression (with better outcomes in individual over group-based interventions). Roberts and Kwan[66] found that CBT



Generation	Intervention	Goal	Degree of recommendation
First: Behavioral therapies	Applied behavior analysis	Problem behaviors	А
	Positive behavior support		В
Second: Cognitive-behavioral therapies	Cognitive-behavioral therapy	Anger, aggression; Depression	С
Third: Contextual therapies	Mindfulness-based therapy	Aggression	D
	Mindfulness-based positive behavior support	Problem behaviors	
	Compassion-focused therapy	Self-criticism unfavorable social comparison; Negative social comparison	D
	Dialectical behavior therapy	Wellbeing	D
	Acceptance and commitment therapy	Obsessive thoughts	D

#### Table 1 Psychological interventions with empirical support for people with intellectual disability

significantly reduced anxiety in adults with mild to moderate ID as measured by self, proxy, and clinician reported outcome measures.

While preliminary research exists evaluating the use of CBT for adults with ID, the potential use of CBT among children and adolescents with ID is significantly under researched<sup>[67]</sup>. To the authors' knowledge, the only specifically adapted CBT program for children with ID is Fearless Me!<sup>®</sup>[67], a multimodal CBT program combining both face-to-face sessions and an online component. It is designed for children and adolescents with mild to moderate ID with the aim of helping them learn to manage and overcome anxiety.

Since cognitive therapies rely on verbal skills and the person's ability to self-report emotions and feelings, they need to be adapted for use in people with ID. The level of adaptation will depend on the person's level of support needs. The duration of the intervention will be longer and will require a greater number of sessions than for people without ID. National Institute for Health and Care Excellence (NICE) guidelines[68] recommended adapted CBT for the treatment of depression and anxiety disorders in people with ID, while acknowledging that the quality of evidence on its effectiveness in this population is low.

Mindfulness-based cognitive therapy is a form of CBT that merits particular attention, since it requires less dialogue with the therapist for the client to become aware of and normalize their emotions or bodily sensations, without applying unsuccessful efforts to discard those experiences. Abstract notions are simplified and made more concrete for people with ID through a series of adaptations. For example, Idusohan-Moizer et al[69] described and implemented a 10-session program to treat depression and anxiety in adults with ID. The intervention used mindfulness in breathing and basic yoga stretches characteristic of this approach, which they combined with metaphors and analogies typical of the third-generation therapies we examine in the next section. Although the results indicate a reduction in symptomatology, they should be interpreted with some caution because of issues in determining the specific contributory variables.

#### Third-generation therapies

Originating as a protest against cognitivism, the third generation of behavioral therapy evolved from developments in behavior analysis, radical behaviorism, and an interest in Skinner's verbal behavior. As pointed out by Pérez-Álvarez[60], contextual therapies are a response to the dissatisfaction with statistical diagnostic systems (DSM/ICD), by considering transdiagnostic dimensions (e.g., hyperreflexivity) rather than nosological categories, and by advocating therapeutic principles (e.g., activation and acceptance) rather than specific techniques or treatments. Third-generation therapies explain problems (as is the case in the field of disability) in interactive, functional, and contextual terms, not as something that is defective in the brain or person, in society or culture, but in the co-evolutionary interaction of the individual and the context in which he or she develops. Further, the effectiveness of these therapies is measured by personal achievements in different life domains (and not by reducing a list of symptoms); hence they align well with the current understanding of



interventions for people with ID, where success is measured in terms of supports and quality of life[50,70].

Patterson *et al*[71] highlighted several important findings in their recent review of third-generation therapies for adults with ID. First, only one of the 20 studies that met the inclusion criteria was a randomized controlled trial; the others were single case studies or single group designs with pre- and post-test evaluation. In all, 45% of the included studies used mindfulness-based therapy (MBT), 30% dialectical behavior therapy (DBT), 15% compassion-focused therapy (CFT), and 10% acceptance and commitment therapy (ACT). Adaptations included modifying the language, concretizing abstract concepts, chunking information, using physical and visual prompts, providing additional time to process information, checking whether participants understood, using role play and experiential exercises, reducing the duration of sessions, and involving carers. On average, interventions were conducted over a 35-wk period and included eight sessions, with each session lasting between 30 min (individual therapy) to 120 min (group therapy). Third-wave therapies improved some symptoms of psychiatric disorders for some adults with ID, but were highly effective at reducing problem and offending behavior in the community, enabling participants to maintain "at-risk" placements.

Singh et al[72] tested the effectiveness of mindfulness-based PBS, a customized form of MBT that enables parents and other caregivers to reduce their reported psychological stress to normative levels through mindfulness procedures and to support children with ID to self-manage their problem behaviors through PBS, reporting significant reductions in aggression and disruptive behavior and increases in compliance behaviors. Meditation on the Soles of the Feet is one of the few yet most cited resources to have been specifically developed for the treatment of anger and aggression in people with ID[73]. It involves the person shifting their attention from an emotionally intense situation to an emotionally neutral part of the body, the soles of their feet. Other techniques used are "mindful observation of thoughts" (i.e., focusing on breathing, visualizing, and observing thoughts like clouds passing through the consciousness) and observation of breathing or focusing on noises and objects in the environment. While the duration and form of mindfulness training varies across studies, "soles of the feet" training generally includes intensive weekly or daily sessions of supervised role-playing, practice, and homework. Newer promising mindfulness-based programs in the self-management of aggression are Surfing the Urge<sup>[72]</sup> and Stop, Observe, Breathe, Expand, and Respond Breathing Space<sup>[74]</sup>. Despite the limited and weak evidence, existing studies suggest that mindfulness-based programs are effective when applied individually, in groups, or in the community, as well as when parents or support persons are trained in their use, especially for the treatment of aggressive behavior[75-77]. When working with people with ID, however, it is more advisable to apply the programs individually[78].

DBT, which is aimed primarily at reducing behaviors such as self-harm, also has applications and adaptations in the field of ID. The review conducted by McNair et al [79] described seven studies on DBT adaptations for use with individuals with ID, but the quality of evidence of its efficacy was rated as methodologically "weak"; the reasons cited included the small number of participants, the absence of a comparison group, and the lack of specificity regarding the goals of the therapy. Glicksman et al [80] proposed using this therapy in conjunction with two core models from the field of ID: the person-centered model and the rights-based model. Hewitt *et al*[81] observed that improvements in scores on measures of psychological well-being, psychological distress, and quality of life appeared to be maintained at 6-mo follow-up, but scores at 2-year follow-up suggested a return to baseline for three participants who attended a DBT group for people with ID. In another investigation, Pearson et al [82] interviewed 11 individuals with ID about their experiences with this therapy, and noted that the empowering and validating environment created within DBT appeared to facilitate them having a voice in sessions, as individuals described asserting their needs, exerting control, and showing agency around their learning. They also experienced a positive therapeutic relationship, where the relationship was characterized by trust, validation, attunement, availability, empowerment, and a nonjudgmental stance. Moreover, participants described using skillful behaviors and generalizing these skills to other settings.

CFT is another approach that is gaining traction in the field of ID. The adaptation of this therapy for use in people with ID, proposed by Clapton *et al*[83], consisted of presenting the psychoeducational material in a more concrete and visual manner, avoiding or minimizing the use of abstract language, producing a support manual with simple summaries (written and visual information) for each session's specific purpose, and designing practices and exercises to be done at home (e.g., use of colored



sand and water in a bottle to demonstrate the purpose of calming mind and body). The program, consisting of six sessions of approximately 90 min each, was rated as safe, accessible, and useful by the individuals with ID. The main difficulty with this intervention reported by participants was similar to what tends to be reported by participants from the general population: the initial challenge of being able to receive and generate compassion for oneself. The evidence of the efficacy of CFT, however, is based only on this one study with a pre-post evaluation of six people (in which a significant decrease in the level of self-criticism and unfavorable social comparison was observed); and another by Goad and Parker<sup>[84]</sup> involving two groups of five and six people (in which clinically - but not statistically - significant differences were found).

Fewer studies have been published on treating this population with ACT, a behavioral-contextual approach that combines behavioral change techniques, present moment awareness, and acceptance procedures. A recent review by Byrne and O'Mahony[85], that included eight studies that used ACT with individuals with ID and/or ASD, concluded that ACT may be a useful intervention in reducing psychological difficulties and improving adaptive functioning. However, the small number of individuals included in the sample, as well as the poor methodological rigor of these studies, limit conclusive generalization of these findings. Brown and Hooper[86] outlined how the ACT model was adapted to treat Sarah, 18 years old, who had moderate/severe support needs and was experiencing depressive and anxious thoughts. Similarly, Pankey and Hayes[87] applied a four-session ACT intervention with a young woman with ID (intermittent support needs) and psychosis, and obtained limited but encouraging results.

In sum, it should be reiterated that all of these studies on the use of third-generation therapies in people with ID are quite preliminary and have major limitations (small sample sizes, absence of a control or comparison groups, insufficient evidence of the validity of the assessment instruments used); at best, we can conclude that these treatments show promise, but more effectiveness research is needed.

#### CONCLUSION

The significant conceptual changes that are taking place in the field of ID have important implications for the work of health professionals and their role in diagnosis, classification, and supports planning. For appropriate and accurate decisions to be made, Schalock et al[6,88] recommended: (1) Ensuring that the required criteria for a diagnosis of ID are met; (2) Understanding related constructs and using precise terminology; (3) Recognizing the different conceptions of disability and perspectives that explain ID; (4) Using evidence-based practices in the design and provision of systems of supports[89]; and (5) Approaching subgroup classification as a postdiagnostic strategy, with a specific purpose and based on an explicit classification framework (*e.g.*, according to support needs).

It is also important to bear in mind that, despite the occurrence of diagnostic overshadowing, people with ID have not escaped the omnipresent power of the marketing of psychotropic medications. The medicalization of the lives of people with ID has been promoted at the expense of psychotherapies that, although requiring more effort, have proven efficacy in people without disabilities. We must, therefore, exercise extreme caution to avoid pathologizing people's everyday lives.

In terms of empirically supported psychological treatments, there is an urgent need to improve preventive measures and facilitate access to appropriate, efficacious, and ethical psychological treatments for people with disabilities. To this end, additional and more robust research in this area should be considered a priority, especially in light of the remarkable paucity of reliable empirical evidence for this population. The failure to meet the needs of people with ID and problem behaviors or psychiatric disorders is a clear violation of their rights[49].

Without wishing to undermine the positive examples of second-generation CBTs being adapted for use with people with ID, we believe it would be contradictory to recommend their use given the need to move away from deficit-based models in order to understand ID. Because of their contextual approach, in contrast to the medical model, first- and third-generation therapies are, in our view, more suitable. For thirdwave therapies in particular, there is an urgent need for research into outcome measures with evidence of validity in homogeneous and adequately sized study groups; as well as evidence of cost and efficacy. In this regard, the evaluation of personal outcomes related to quality of life is highly recommended as a way of testing



the efficacy of psychological treatments[90].

In accordance with the NICE guidelines[68], psychological interventions should be tailored to the preferences of people with ID, their level of understanding, their preferred mode of communication, their strengths, needs, and other associated conditions. In addition, interventions should respect the individual's privacy (although they should also seek the collaboration of family and primary support providers) and provide additional supports during and between sessions. To achieve this aim, it is not enough for health care professionals – particularly psychologists and psychiatrists - to know what is ID. They must also learn about the relevant ethical aspects, principles, and values, including supports, inclusion, rights, selfdetermination, and quality of life<sup>[50]</sup>; and be willing to coordinate with professionals from other social, education, and health services.

# REFERENCES

- McKenzie K, Milton M, Smith G, Ouellette-Kuntz H. Systematic review of the prevalence and incidence of intellectual disabilities: Current trends and issues. Curr Dev Disord Rep 2016; 3: 104-115 [DOI: 10.1007/s40474-016-0085-7]
- World Health Organization. International Classification of Functioning, Disability and Health. 2 Geneva: World Health Organization, 2001
- 3 Schalock RL, Luckasson R, Shogren KA. Going beyond Environment to Context: Leveraging the Power of Context to Produce Change. Int J Environ Res Public Health 2020; 17: 1885 [PMID: 32183245 DOI: 10.3390/ijerph17061885]
- 4 American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Arlington (VA): American Psychiatric Association, 2013
- World Health Organization. International statistical classification of diseases and related health 5 problems (ICD-11). Geneva: World Health Organization, 2018
- Schalock RL, Luckasson R, Tassé MJ. Intellectual disability: Definition, diagnosis, classification, 6 and systems of supports, 12th ed. Washington, DC: American Association on Intellectual and Developmental Disabilities, 2021
- 7 Thurm A, Kelleher B, Wheeler A. Outcome Measures for Core Symptoms of Intellectual Disability: State of the Field. Am J Intellect Dev Disabil 2020; 125: 418-433 [PMID: 33211819 DOI: 10.1352/1944-7558-125.6.418
- 8 Hsieh K, Scott HM, Murthy S. Associated Risk Factors for Depression and Anxiety in Adults With Intellectual and Developmental Disabilities: Five-Year Follow Up. Am J Intellect Dev Disabil 2020; 125: 49-63 [PMID: 31877262 DOI: 10.1352/1944-7558-125.1.49]
- Buckley N, Glasson EJ, Chen W, Epstein A, Leonard H, Skoss R, Jacoby P, Blackmore AM, 9 Srinivasjois R, Bourke J, Sanders RJ, Downs J. Prevalence estimates of mental health problems in children and adolescents with intellectual disability: A systematic review and meta-analysis. Aust NZ J Psychiatry 2020; 54: 970-984 [PMID: 32475125 DOI: 10.1177/0004867420924101]
- 10 Sheehan R, Hassiotis A, Walters K, Osborn D, Strydom A, Horsfall L. Mental illness, challenging behaviour, and psychotropic drug prescribing in people with intellectual disability: UK population based cohort study. BMJ 2015; 351: h4326 [PMID: 26330451 DOI: 10.1136/bmj.h4326]
- Tassé MJ, Bertelli M, Kates W, Simon E, Navas P. Intellectual disability (Intellectual Disability 11 Disorder). In: Fletcher R, Cooper SA, Barnhill J. Diagnostic Manual Intellectual Disability. 2nd ed. Kingston (NY): NADD Press, 2016: 75-90
- 12 Carr EG, Dunlap G, Horner RH, Koegel RL, Turnbull AP, Sailor W, Anderson JL, Albin RW, Koegel LK, Fox L. Positive behavior support: Evolution of an applied science. J Posit Behav Int 2002; 4: 4-16 [DOI: 10.1177/109830070200400102]
- Hughes-McCormack LA, Rydzewska E, Henderson A, MacIntyre C, Rintoul J, Cooper SA. 13 Prevalence of mental health conditions and relationship with general health in a whole-country population of people with intellectual disabilities compared with the general population. BJPsych Open 2017; 3: 243-248 [PMID: 29034100 DOI: 10.1192/bjpo.bp.117.005462]
- 14 Dunn K, Rydzewska E, Fleming M, Cooper SA. Prevalence of mental health conditions, sensory impairments and physical disability in people with co-occurring intellectual disabilities and autism compared with other people: a cross-sectional total population study in Scotland. BMJ Open 2020; 10: e035280 [PMID: 32341043 DOI: 10.1136/bmjopen-2019-035280]
- 15 Tassé MJ. Functional behavioural assessment in people with intellectual disabilities. Curr Opin *Psychiatry* 2006; **19**: 475-480 [PMID: 16874119 DOI: 10.1097/01.yco.0000238473.29949.2e]
- 16 Fletcher R, Barnhill J, Cooper SA. Diagnostic Manual –Intellectual Disability (DM-ID-2). 2nd ed. Kingston (NY): NADD Press, 2016
- Royal College of Psychiatrists. DC-LD: Diagnostic criteria for psychiatric disorders for use with 17 adults with learning disabilities/mental retardation. London: Gaskell, 2001
- 18 García-Domínguez L, Navas P, Verdugo MÁ, Arias VB. Chronic Health Conditions in Aging Individuals with Intellectual Disabilities. Int J Environ Res Public Health 2020; 17 [PMID: 32365862 DOI: 10.3390/ijerph17093126]



- Couto P, Pereira PA, Nunes M, Mendes RA. Oral health-related quality of life of Portuguese adults 19 with mild intellectual disabilities. PLoS One 2018; 13: e0193953 [PMID: 29561892 DOI: 10.1371/journal.pone.0193953
- 20 Powers B, Patterson F, Palmiere K, Healy S. "I sit all of the time": Health-related time-use among adults with intellectual disabilities. Res Dev Disabil 2021; 108: 103817 [PMID: 33338775 DOI: 10.1016/j.ridd.2020.103817]
- Anderson LL, Humphries K, McDermott S, Marks B, Sisirak J, Larson S. The state of the science of 21 health and wellness for adults with intellectual and developmental disabilities. Intellect Dev Disabil 2013; 51: 385-398 [PMID: 24303825 DOI: 10.1352/1934-9556-51.5.385]
- 22 Ho P, Bulsara C, Patman S, Downs J, Hill AM. Exploring enablers and barriers to accessing health services after a fall among people with intellectual disability. J Appl Res Intellect Disabil 2020; 33: 604-617 [PMID: 32039539 DOI: 10.1111/jar.12704]
- 23 US Surgeon General. Closing the gap: a national blueprint for improving the health of individuals with mental retardation. Report of the Surgeon General's Conference on Health Disparities and Mental Retardation. Washington, DC: US Public Health Service, 2001
- Whittle EL, Fisher KR, Reppermund S, Lenroot R, Trollor J. Barriers and enablers to accessing 24 mental health services for people with intellectual disability: A scoping review. J Ment Health Res Intellect Disabil 2018; 11: 69-102 [DOI: 10.1080/19315864.2017.1408724]
- Hosking FJ, Carey IM, Shah SM, Harris T, DeWilde S, Beighton C, Cook DG. Mortality Among 25 Adults With Intellectual Disability in England: Comparisons With the General Population. Am J Public Health 2016; 106: 1483-1490 [PMID: 27310347 DOI: 10.2105/AJPH.2016.303240]
- 26 Verdugo MA, Navas P. All means all. Rights and quality of life of people with intellectual disability and greater support needs. Madrid: Real Patronato sobre Discapacidad, 2017
- 27 Navas P, Verdugo MA, Martínez S, Sainz F, Aza A. Derechos y calidad de vida en personas con discapacidad intelectual y mayores necesidades de apoyo [Rights and quality of life of individuals with intellectual disability and extensive support needs]. Siglo Cero 2017; 48: 7-66
- 28 Sisirak J, Marks B, Heller T, Ronneberg C, McDonald K, Ailey S. People with IDD: Health and wellness for all. In: Critical issues in intellectual and developmental disabilities: Contemporary research, practice, and policy. Washington, DC: American Association on Intellectual and Developmental Disabilities, 2016: 109-148
- 29 Havercamp SM, Scott HM. National health surveillance of adults with disabilities, adults with intellectual and developmental disabilities, and adults with no disabilities. Disabil Health J 2015; 8: 165-172 [PMID: 25595297 DOI: 10.1016/j.dhjo.2014.11.002]
- 30 McConkey R, Truesdale M. Reactions of nurses and therapists in mainstream health services to contact with people who have learning disabilities. J Adv Nurs 2000; 32: 158-163 [PMID: 10886447 DOI: 10.1046/i.1365-2648.2000.01413.x]
- Wilkinson J, Dreyfus D, Cerreto M, Bokhour B. "Sometimes I feel overwhelmed": educational needs 31 of family physicians caring for people with intellectual disability. Intellect Dev Disabil 2012; 50: 243-250 [PMID: 22731973 DOI: 10.1352/1934-9556-50.3.243]
- Nagarajappa R, Tak M, Sharda AJ, Asawa K, Jalihal S, Kakatkar G. Dentists' attitude to provision of care for people with learning disabilities in Udaipur, India. Scand J Caring Sci 2013; 27: 57-62 [PMID: 22510055 DOI: 10.1111/j.1471-6712.2012.01000.x]
- 33 Mesa S, Tsakanikos E. Attitudes and self-efficacy towards adults with mild intellectual disability among staff in acute psychiatric wards: an empirical investigation. Adv Ment Health Intellect Disabil 2014; 8: 79-90 [DOI: 10.1108/AMHID-02-2013-0011]
- Strauser DR, Ciftci A, O'Sullivan D. Using attribution theory to examine community rehabilitation 34 provider stigma. Int J Rehabil Res 2009; 32: 41-47 [PMID: 19648802 DOI: 10.1097/MRR.0b013e328307f5b0]
- 35 Espadas C, Ballester P, Londoño AC, Almenara S, Aguilar V, Belda C, Pérez E, Peiró AM. Multimorbidity and psychotropic polypharmacy among participants with autism spectrum disorder with intellectual disability. Psychiatry Res 2020; 292: 113321 [PMID: 32738553 DOI: 10.1016/j.psychres.2020.113321]
- 36 Bowring DL, Totsika V, Hastings RP, Toogood S, McMahon M. Prevalence of psychotropic medication use and association with challenging behaviour in adults with an intellectual disability. A total population study. J Intellect Disabil Res 2017; 61: 604-617 [PMID: 28090687 DOI: 10.1111/jir.12359]
- 37 Griffiths H, Halder N, Chaudhry N. Antipsychotic prescribing in people with intellectual disabilities: a clinical audit". Adv Ment Health Intellect Disabil 2012; 6: 215-222 [DOI: 10.1108/20441281211236661
- Tan X, Marshall VD, Balkrishnan R, Patel I, Chang J, Erickson SR. Psychotropic medication 38 adherence among community-based individuals with developmental disabilities and mental illness. J Ment Health Res Intellect Disabil 2015; 8: 1-22 [DOI: 10.1080/19315864.2014.959216]
- O'Dwyer M, McCallion P, McCarron M, O'Connell J, Henman M. Measuring drug burden in older 39 adults with intellectual disabilities: Critical issues for consideration in finding the optimal measure to improve safety of medicines use. Expert Opin Drug Saf 2020; 19: 649-652 [PMID: 32241202 DOI: 10.1080/14740338.2020.1751119
- 40 Axmon A, Ahlström G, Gagnemo Persson R, Eberhard J. Demographic and diagnostic profiles of older people with intellectual disability and prescription of antipsychotics. Soc Psychiatry Psychiatry *Epidemiol* 2019; **54**: 937-944 [PMID: 30903237 DOI: 10.1007/s00127-019-01695-w]



- 41 Eady N, Courtenay K, Strydom A. Pharmacological management of behavioral and psychiatric symptoms in older adults with intellectual disability. Drugs Aging 2015; 32: 95-102 [PMID: 25573538 DOI: 10.1007/s40266-014-0236-7]
- 42 Alcedo MÁ, Fontanil Y, Solís P, Pedrosa I, Aguado AL. People with intellectual disability who are ageing: Perceived needs assessment. Int J Clin Health Psychol 2017; 17: 38-45 [PMID: 30487879 DOI: 10.1016/j.ijchp.2016.07.002]
- 43 Wachtel LE, Hagopian LP. Psychopharmacology and applied behavioral analysis: tandem treatment of severe problem behaviors in intellectual disability and a case series. Isr J Psychiatry Relat Sci 2006; 43: 265-274 [PMID: 17338446]
- 44 Hunt K, Bernal J, Worth R, Shearn J, Jarvis P, Jones E, Lowe K, Madden P, Barr O, Forrester-Jones R, Kroll T, McCarron M, Read S, Todd S. End-of-life care in intellectual disability: a retrospective cross-sectional study. BMJ Support Palliat Care 2020; 10: 469-477 [PMID: 31619439 DOI: 10.1136/bmjspcare-2019-001985
- Morán L, Gómez LE, Alcedo MA. Inclusión social y autodeterminación: los retos en la calidad de 45 vida de los jóvenes con autismo y discapacidad intelectual [Social inclusion and self-determination: The challenges in the quality of life of youth with autism and intellectual disability]. Siglo Cero 2019; **50**: 29-46 [DOI: 10.14201/scero20195032946]
- Gilmore L, Cuskelly M. Vulnerability to loneliness in people with intellectual disability: An 46 explanatory model. J Policy Pract Intellect Disabil 2014; 11: 192-199 [DOI: 10.1111/jppi.12089]
- United Nations. Convention on the Rights of Persons with Disabilities. New York: UN General 47 Assembly, 2006
- 48 Gómez LE, Verdugo MA, Arias B, Irurtia MJ. Assessment of rights of people with intellectual disability: preliminary study. Psicol Conduct 2011; 19: 207-222
- 49 Gómez LE, Monsalve A, Morán ML, Alcedo MÁ, Lombardi M, Schalock RL. Measurable Indicators of CRPD for People with Intellectual and Developmental Disabilities within the Quality of Life Framework. Int J Environ Res Public Health 2020; 17 [PMID: 32679924 DOI: 10.3390/ijerph17145123
- 50 Gómez LE, Schalock RL, Verdugo MA. A New Paradigm in the Field of Intellectual and Developmental Disabilities: Characteristics and Evaluation. Psicothema 2021; 33: 28-35 [PMID: 33453733 DOI: 10.7334/psicothema2020.385]
- Lombardi M, Vandenbussche H, Claes C, Schalock RL, De Maeyer J, Vandevelde S. The concept of 51 quality of life as framework for implementing the UNCRPD. J Policy Pract Intellect Disabil 2019; 16: 180-190 [DOI: 10.1111/jppi.12279]
- 52 Foster CA. Deej-a Vu: Documentary revisits facilitated communication pseudoscience. Behav Intervent 2019; 34: 577-586 [DOI: 10.1002/bin.1687]
- 53 Travers JC, Tincani MJ, Lang R. Facilitated communication denies people with disabilities their voice. Res Pract Persons Severe Disabil 2014; 39: 195-202 [DOI: 10.1177%2F1540796914556778]
- Campbell M, Robertson A, Jahoda A. Psychological therapies for people with intellectual 54 disabilities: comments on a matrix of evidence for interventions in challenging behaviour. J Intellect Disabil Res 2014; 58: 172-188 [PMID: 23106865 DOI: 10.1111/j.1365-2788.2012.01646.x]
- Antonacci DJ, Manuel C, Davis E. Diagnosis and treatment of aggression in individuals with 55 developmental disabilities. Psychiatr Q 2008; 79: 225-247 [PMID: 18726157 DOI: 10.1007/s11126-008-9080-4]
- Bhaumik S, Gangadharan S, Hiremath A, Russell PS. Psychological treatments in intellectual 56 disability: the challenges of building a good evidence base. Br J Psychiatry 2011; 198: 428-430 [PMID: 21628703 DOI: 10.1192/bjp.bp.110.085084]
- 57 Hartley SL, Horrell SV, Maclean WE. Science to practice in intellectual disability. In: Jacobson JW, Mulick JA, Rojan J. Handbook of intellectual and developmental disabilities. New York, NY: Springer, 2007: 425-443
- 58 Koslowski N, Klein K, Arnold K, Kösters M, Schützwohl M, Salize HJ, Puschner B. Effectiveness of interventions for adults with mild to moderate intellectual disabilities and mental health problems: systematic review and meta-analysis. Br J Psychiatry 2016; 209: 469-474 [PMID: 27198481 DOI: 10.1192/bjp.bp.114.162313]
- 59 Gómez LE, Navas P. Tratamientos psicológicos para personas con discapacidad intelectual y problemas de salud mental [Psychological treatment for people with intellectual disability and mental health problems]. In: Fonseca E. Manual de tratamientos psicológicos: infancia y adolescencia [Manual of psychological treatments: infancy and youth]. Madrid: Pirámide, 2021: 137-157
- 60 Pérez-Álvarez M. Las terapias de tercera generación como terapias contextuales [Third-generation therapies as contextual therapies]. Madrid: Síntesis, 2014
- 61 National Institute for Health and Care Excellence. Learning disabilities and behaviour that challenges: service design and delivery. 2018. [cited 15 Feb 2021]. In: National Institute for Health and Care Excellence [Internet]. Available from:
  - https://www.nice.org.uk/guidance/ng93/chapter/Recommendations
- LaVigna GW, Willis TJ. The efficacy of positive behavioural support with the most challenging 62 behaviour: the evidence and its implications. J Intellect Dev Disabil 2012; 37: 185-195 [PMID: 22774760 DOI: 10.3109/13668250.2012.696597]
- 63 Hassiotis A, Robotham D, Canagasabey A, Romeo R, Langridge D, Blizard R, Murad S, King M. Randomized, single-blind, controlled trial of a specialist behavior therapy team for challenging behavior in adults with intellectual disabilities. Am J Psychiatry 2009; 166: 1278-1285 [PMID:



19687128 DOI: 10.1176/appi.ajp.2009.08111747]

- 64 McGill P, Vanono L, Clover W, Smyth E, Cooper V, Hopkins L, Barratt N, Joyce C, Henderson K, Sekasi S, Davis S, Deveau R. Reducing challenging behaviour of adults with intellectual disabilities in supported accommodation: A cluster randomized controlled trial of setting-wide positive behaviour support. Res Dev Disabil 2018; 81: 143-154 [PMID: 29752027 DOI: 10.1016/j.ridd.2018.04.020]
- 65 Vereenooghe L, Langdon PE. Psychological therapies for people with intellectual disabilities: a systematic review and meta-analysis. Res Dev Disabil 2013; 34: 4085-4102 [PMID: 24051363 DOI: 10.1016/j.ridd.2013.08.030]
- Roberts L, Kwan S. Putting the C into CBT: Cognitive challenging with adults with mild to moderate 66 intellectual disabilities and anxiety disorders. Clin Psychol Psychother 2018; 25: 662-671 [PMID: 29687561 DOI: 10.1002/cpp.2196]
- 67 Hronis A, Roberts R, Roberts L, Kneebone II. Fearless me!©: cognitive behaviour therapy for children with intellectual disability and anxiety. Sydney: University of Technology Sydney & University of Adelaide, 2018
- National Institute for Health and Care Excellence. Mental health problems in people with 68 learning disabilities: prevention, assessment and management: Guidance. 2016. [cited 18 Feb 2021]. In: National Institute for Health and Care Excellence [Internet]. Available from: https://www.nice.org.uk/guidance/ng54
- Idusohan-Moizer H, Sawicka A, Dendle J, Albany M. Mindfulness-based cognitive therapy for 69 adults with intellectual disabilities: an evaluation of the effectiveness of mindfulness in reducing symptoms of depression and anxiety. J Intellect Disabil Res 2015; 59: 93-104 [PMID: 24020487 DOI: 10.1111/jir.12082]
- 70 Verdugo MA, Schalock RL, Gomez LE. El Modelo de Calidad de Vida y Apoyos: La unión tras veinticinco años de caminos paralelos [The Quality of Life Supports Model: Twenty-five years of parallel paths have come together]. Siglo Cero 2021; 52: 9-28 [DOI: 10.14201/scero2021523928]
- Patterson CW, Williams J, Jones R. Third-wave therapies and adults with intellectual disabilities: A 71 systematic review. J Appl Res Intellect Disabil 2019; 32: 1295-1309 [PMID: 31094063 DOI: 10.1111/jar.12619]
- 72 Singh NN, Lancioni GE, Karazsia BT, Myers RE, Kim E, Chan J, Jackman MM, McPherson CL, Janson M. Surfing the urge: An informal mindfulness practice for the self-management of aggression by adolescents with autism spectrum disorder. J Cont Behav Sci 2019; 12: 170-177 [DOI: 10.1016/j.jcbs.2018.10.003
- 73 Calderón R, Caballo C. Revisión sistemática sobre la aplicación y efectividad de tratamientos basados en mindfulness en personas con discapacidad intelectual [Systematic review on the application and effectiveness of treatments based on mindfulness in people with intellectual disabilities]. Rev Española Discapac 2018; 6: 49-74 [DOI: 10.5569/2340-5104.06.01.03]
- Singh NN, Lancioni GE, Myers RE, Karazsia BT, McPherson CL, Jackman MM, Kim E, Thompson 74 T. Effects of SOBER Breathing Space on aggression in children with autism spectrum disorder and collateral effects on parental use of physical restraints. Adv Neurodev Disord 2018; 2: 362-374 [DOI: 10.1007/s41252-018-0073-5
- 75 Adkins AD, Singh AN, Winton ASW, McKeegan GF, Singh J. Using a mindfulness-based procedure in the community: Translating research to practice. J Child Family Stud 2010; 19: 175-183 [DOI: 10.1007/s10826-009-9348-9]
- Chilvers J, Thomas C, Stanbury A. The impact of a ward- based mindfulness programme on recorded 76 aggression in a medium secure facility for women with learning disabilities. J Learn Disabil Offend Behav 2011; 2: 27-42 [DOI: 10.5042/jldob.2011.0026]
- 77 Singh NN, Hwang YS. Mindfulness-based programs and practices for people with intellectual and developmental disability. Curr Opin Psychiatry 2020; 33: 86-91 [PMID: 31725422 DOI: 10.1097/YCO.0000000000000570]
- Singh NN. Implementation Science of Mindfulness in Intellectual and Developmental Disabilities. 78 Am J Intellect Dev Disabil 2020; 125: 345-348 [PMID: 32936888 DOI: 10.1352/1944-7558-125.5.345
- 79 McNair L, Woodrow C, Hare D. Dialectical Behaviour Therapy [DBT] with People with Intellectual Disabilities: A Systematic Review and Narrative Analysis. J Appl Res Intellect Disabil 2017; 30: 787-804 [PMID: 27456814 DOI: 10.1111/jar.12277]
- Glicksman S, Goldberg C, Hamel C, Shore R, Wein A, Wood D, Zummo J. Rights-Based and 80 Person-Centered Approaches to Supporting People With Intellectual Disability: A Dialectical Model. Intellect Dev Disabil 2017; 55: 181-191 [PMID: 28608769 DOI: 10.1352/1934-9556-55.3.181]
- 81 Hewitt O, Atkinson-Jones K, Gregory H, Hollyman J. What happens next? British J Learn Disabil 2019: 47: 126-133 [DOI: 10.1111/bld.12267]
- 82 Pearson A, Austin K, Rose N, Rose J. Experiences of dialectical behaviour therapy in a community setting for individuals with intellectual disabilities. Int J Dev Disabil 2019; 67: 283-295 [DOI: 10.1080/20473869.2019.1651143
- Clapton NE, Williams J, Griffith GM, Jones RS. 'Finding the person you really are ... on the inside': 83 Compassion focused therapy for adults with intellectual disabilities. J Intellect Disabil 2018; 22: 135-153 [PMID: 28105897 DOI: 10.1177/1744629516688581]
- Goad EJ, Parker K. Compassion-focused therapy groups for people with intellectual disabilities: An 84 extended pilot study. J Intellect Disabil 2020; 1744629520925953 [PMID: 32608299 DOI: 10.1177/1744629520925953



- 85 Byrne G, O'Mahony T. Acceptance and commitment therapy (ACT) for adults with intellectual disabilities and/or autism spectrum conditions (ASC): A systematic review. J Cont Behav Sci 2020; 18: 247-255 [DOI: 10.1016/j.jcbs.2020.10.001]
- Brown FJ, Hooper S. Acceptance and Commitment Therapy (ACT) with a learning disabled young 86 person experiencing anxious and obsessive thoughts. J Intellect Disabil 2009; 13: 195-201 [PMID: 19786502 DOI: 10.1177/1744629509346173]
- Pankey J, Hayes SC. Acceptance and commitment therapy for psychosis. Int J Psychol Therapy 87 2003; **3**: 311-328
- Schalock RL, Luckasson R, Tassé MJ. The contemporary view of intellectual and developmental 88 disabilities: Implications for psychologists. Psicothema 2019; 31: 223-228 [PMID: 31292035 DOI: 10.7334/psicothema2019.119]
- 89 Schalock RL, Verdugo MA, Gomez LE. Evidence-based practices in the field of intellectual and developmental disabilities: an international consensus approach. Eval Program Plann 2011; 34: 273-282 [PMID: 21167602 DOI: 10.1016/j.evalprogplan.2010.10.004]
- Gómez LE, Arias B, Verdugo MA, Navas P. An outcomes-based assessment of quality of life in 90 social services. Soc Indicat Res 2012; 106: 81-93 [DOI: 10.1007/s11205-011-9794-9]





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