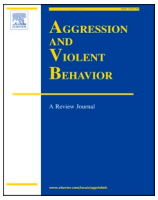
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Cognitive behavioural "third wave" therapies in the treatment of justice-involved individuals: A systematic review

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ABSTRACT

Psychological treatments have been increasingly used with justice-involved individuals; however, evidence regarding their effectiveness remains unclear. Thus, new approaches, such as Cognitive-Behavioural (CB) "third wave" therapies, have been implemented with justice-involved individuals. This systematic review describes and assesses the effectiveness of different CB "third wave" therapies, such as Dialectical Behavioural Therapy (DBT), Acceptance and Commitment Therapy (ACT), Compassion Focused Therapy (CFT), Mindfulness-based Approaches (MBA), Metacognitive Therapy (MCT), and Functional Analytic Psychotherapy (FAP) with justice-involved individuals. The research was conducted in four databases (i.e., B-on, PubMed, Science Direct, and PsycINFO) up to November 2023. Fifty studies were included in the review. DBT was the most assessed, followed by ACT. No studies using FAP and MCT were included. Preliminary evidence for the effectiveness of ACT, DBT, CFT, and MBA with justice-involved populations regarding aggression and violent behaviour reductions was found. However, the studies revealed some methodological shortcomings preventing us from reaching firmer conclusions. More research is needed to understand the impact of CB "third wave" therapies in forensic settings further.

1. Introduction

Much work has been done from Martinson's (1974) pessimistic conclusions regarding the ineffectiveness of the intervention with individuals who commit crimes. The idea that treatment has no apparent effect on individuals or adds little to legal sanctions for long has been challenged. In 1979, Martinson wrote a paper that acknowledged errors in the earlier reviews and reported a considerable number of new studies demonstrating that some interventions did work (Bonta & Andrews, 2017).

By the 1990s, the research published on evaluations of community and correctional interventions with individuals who commit crimes approached 500 publications, making it clear that treatment can reduce recidivism (Bonta & Andrews, 2017). The early formulation of the Risk-Need-Responsivity (RNR) model provided a psychologically informed explanation of why some treatments were more effective than others, becoming one of the most influential models for assessing and treating individuals who commit crimes (Bonta & Andrews, 2017). Since 1990, several principles have been added to strengthen the design and implementation of effective interventions.

Research has established the effectiveness of programs described as Cognitive-Behavioural (CB). A meta-analysis by Wilson et al. (2005) of group-oriented CB programs for individuals who commit crimes found that Cognitive-Behavioural Therapy (CBT) effectively reduced criminal behaviour. CBT programs have shown recidivism risk reductions of 20–30 % compared to control groups and to be more effective in reducing reoffending than non-CBT interventions (Henwood et al., 2015; Wilson et al., 2005). Also, treatment program adherence to RNR principles has been correlated with decreases in reoffending (Dowden & Andrews, 2000; Hanson et al., 2009). However, the effectiveness of most treatments for justice-involved individuals on recidivism remains unclear due to a range of limitations and inconsistent findings (Hopkin et al., 2018). A recent meta-analysis by Beaudry et al. (2021) found no strong evidence of reduced reoffending after participating in CBT-based programs. Indeed, Byrne and NÍ Ghráda (2019) concluded that although CBT treatments gather more evidence, the success of such approaches in reducing recidivism is still under debate.

While research points to the positive effects of CBT on recidivism and

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the mental health needs of individuals who commit crimes (Yoon et al., 2017), its long-term effectiveness has been questioned (Johnsen & Friborg, 2015). The literature consistently finds that justice-involved individuals have higher mental health needs than community individuals (Prins, 2014). Surveys estimate that around one in seven incarcerated individuals is diagnosed with psychosis or depression. Substance abuse is also overrepresented in incarcerated individuals (Fazel et al., 2016). Considering this diversity of needs, treatment approaches that use other strategies, such as CB 'third wave' therapies, began to be used and tested in forensic settings to clarify what works and for whom.

1.1. Cognitive-behavioural 'third wave' therapies

CB 'third wave' therapies have garnered increasing evidence in the last 15 years within the clinical literature, with research suggesting promising results (Benfer et al., 2021; Sierra et al., 2018), especially with difficult-to-treat populations, such as personality and substance use disorders. These therapies aim to construct effective and flexible repertories of behaviour, using mindfulness and acceptance strategies, emphasizing learning through experiential means (Hayes, 2004), and encompassing key concepts such as acceptance, defusion, clarification of values, and psychological flexibility that may be useful with forensic populations (Roberton et al., 2012). "Third wave" therapies include Dialectical Behaviour Therapy (DBT), Compassion Focused Therapy (CFT), Acceptance and Commitment Therapy (ACT), Functional Analytic Psychotherapy (FAP), Metacognitive Therapy (MCT), and Mindfulness-based approaches (MBA).

DBT (Linehan, 1993) is a type of CBT developed to target emotional dysregulation (i.e., affective liability and uncontrolled anger) and behavioural difficulties (i.e., self-harm and violent aggression) associated with chronic and severe emotion dysregulation present in Borderline Personality Disorder (BPD). It was designed to flexibly combine CB and acceptance/mindfulness strategies to regulate and improve emotions as the main improvement mechanisms (Afshari et al., 2020).

ACT, an evidence-based contextual CB approach, uses strategies to change behaviour, acceptance, mindfulness, and values, increasing the breadth and variety of individuals' behavioural responses in the presence of unpleasant private experiences (feelings, sensations, and thoughts), decreasing the reliance on experiential avoidance (Hayes et al., 2006). It does not seek to change difficult thoughts and feelings; instead, it aims to increase psychological flexibility and focuses on the values that matter to individuals to take committed action steps toward a life that fits their values.

FAP, developed by Kohlenberg and Tsai (1991), is a contextual behavioural therapy that uses behavioural principles occurring within the context of the therapeutic relationship to promote adaptive in-session behaviour change to be generalized to outside-of-session contexts. FAP argues that in vivo interventions are more robust, increasing the likelihood of positive outcomes (Maitland et al., 2017). The FAP focuses on the opportunities for therapeutic change that occur when the client's problems are manifested within the therapeutic relationship. Therefore, most FAP research is anchored in case reports and single-subject research, in which researchers assess ideographically defined behaviours (Maitland et al., 2017).

MCT derives from classical cognitive therapy and states that the maintenance of psychological difficulties arises because of perseverative thinking, known as the cognitive attentional syndrome, consisting of dysfunctional coping strategies employed as an attempt to manage distressful thoughts and feelings. This includes rumination, suppression, repetitive thinking, and unhelpful avoidant behavioural strategies (Wells, 2009). Attention training, detached mindfulness, and behavioural experiments targeting metacognitions are examples of therapeutic techniques.

CFT arises from evolutionary psychology, attachment theory, and neuroscience and is a multimodal approach developed to build the ability to experience compassion in individuals with high levels of shame and self-criticism, often from hostile and abusive environments (Gilbert, 2009, 2010; Kolts, 2016). This model intends to develop in the individual the understanding of how the mind works and to promote the acceptance of internal experiences instead of trying to suppress or modify them (Gilbert, 2009).

Mindfulness-based approaches (MBA) comprise Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT). MBSR is a structured, manualized group program developed to manage suffering associated with physical, psychosomatic, and psychiatric disorders. MBSR has been used to reduce chronic illnesses' psychological morbidity and treat emotional and behavioural disorders (Bishop et al., 2004). MBCT is an adaptation of the MBSR that combines elements of cognitive therapy (Segal et al., 2002), facilitating a detached or decentred view of one's thoughts (Baer, 2003). This approach was designed for individuals with a history of persistent depression to help prevent depressive relapse (Segal et al., 2002).

1.2. 'Third wave' cognitive behavioural therapies within forensic settings

Several studies have shown an association between offending and emotion regulation, particularly impulsivity and impaired cognitive and behavioural flexibility (Fazel et al., 2008). Self-regulation is often looked at as an explanatory factor in theories on the development and manifestation of criminal behaviour (Billen et al., 2022), while impulsivity appears to have a mediation effect in violent offending (Wojciechowski, 2021); thus, they can be seen as treatment goals (Bonta & Andrews, 2017). Improving emotion regulation, thoughts, and behaviours is an important aspect of treatment and rehabilitation, providing individuals with tools to reintegrate into society (Billen et al., 2022). Also, there is evidence that treatments addressing anger control, impulsivity, and interpersonal skills are associated with larger reductions in risk for violent offending and/or recidivism (Wojciechowski, 2021). The "third wave" approaches often address these skills.

The general targets of 'third wave' approaches are related to intrapersonal skills (emotional regulation), personality, and psychopathology (impulsivity, anger, hostility, and psychological inflexibility). More recently, 'third wave' approaches have been implemented among individuals who commit crimes under the argument that effective interventions for non-forensic populations will also be effective for forensic ones (Byrne & Ní Ghráda, 2019). DBT has received particular attention in forensic settings, gathering more evidence of applicability and effectiveness (Tomlinson, 2018). Besides, some authors argue that DBT theoretically aligns with the RNR model as DBT addresses many of the most important risk factors for crime and recidivism (Tomlinson, 2018). However, although forensic populations usually face specific challenges that 'third wave' CBT may potentially address, such approaches in the forensic and correctional fields are still scarce.

In recent years, a few systematic reviews have been conducted to better understand the use and effectiveness of some "third wave" therapies within forensic and correctional populations. For example, Tomlinson (2018) conducted a qualitative systematic literature review of DBT programs within forensic psychiatric and correctional populations. The author concluded that DBT seems to reduce recidivism risk in criminal justice systems if applied within a RNR framework. Byrne and Ní Ghráda (2019) conducted a systematic review of the effectiveness of ACT, CFT, MCT, and FAP in the forensic and correctional field. The authors found no studies using MCT or FAP. ACT revealed promising results in the treatment of addictions and anger/aggression issues, although the studies presented some methodological limitations and small sample sizes. More recently, Mitchell and Wupperman (2022) conducted a systematic review to provide an overview of mindfulness interventions for adult male individuals referred for domestic violence (DV) treatment. Six studies were included in the review. Results supported the utility of DV treatments that incorporate mindfulness, with ACT interventions having the most evidence. Finally, Visdómine-Lozano (2022), in a descriptive and comparative review of 44 studies of four

therapies, i.e., FAP, ACT, DBT, and Mode Deactivation Therapy (MDT), used in the treatment of antisocial behaviour and offending, found that these interventions have been used to treat challenging behavioural patterns, incarcerated individuals' institutional behaviours, exhibitionism, at-risk adolescents' aggressive conducts, and offending behaviours performed by juveniles who committed robbery and/or serious sexual offenses. Although FAP and ACT have been used more sparsely, all four therapies revealed positive outcomes.

2. Current study

Although a few previous reviews were conducted, they present some limitations. First, these reviews focused mainly on a specific therapy (i.e., DBT; Tomlinson, 2018), on a specific element of "third wave" therapies (i.e., mindfulness; Mitchell & Wupperman, 2022), or a specific type of offense (i.e., DV; Mitchell & Wupperman, 2022). Second, when the reviews included different intervention approaches, they were often restricted to specific forensic settings and populations (i.e., incarcerated individuals in forensic and correctional settings; Byrne & Ní Ghráda, 2019) or too broad in terms of behaviours addressed (i.e., antisocial behaviour; Visdómine-Lozano, 2022). Thus, the current study aims to provide a broad and comprehensive systematic review of the empirical evidence of 'third wave' therapies within forensic settings with justice-involved individuals. More specifically, this systematic review aims to describe and assess the effectiveness of different CB "third wave" therapies with justice-involved individuals, extending previous reviews by including a wider range of CB 'third wave' approaches, different forensic settings (i.e., prisons, forensic hospitals, probation), and different justice-involved individuals (i.e., men and women, youth, and adults).

3. Methods

3.1. Eligibility criteria

This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009). The inclusion criteria for the current review included the following: (a) studies that evaluate the efficacy of CB "third wave" interventions with justice-involved individuals (adult or juveniles, male or female, and was not restricted by offense type); (b) quantitative empirical studies; and (c) studies written in Portuguese, English or Spanish. The exclusion criteria included: (a) books; (b) studies with samples of individuals without criminal sanctions/no justice involvement; and (c) single case design studies, systematic reviews, and meta-analyses. To ensure the independence of study results, we used the following criteria: (a) we chose the longest follow-up period between intervention application and assessment.

3.2. Search Strategies

Studies were identified using B-on, Medline (PubMed), Science Direct, and PsycINFO until November 2023. The following combined key terms were used: ("third wave cognitive behavioral therapy" OR "CBT" OR "acceptance and commitment therapy" OR "ACT" OR "dialectical behavior therapy" OR "DBT" OR "mindfulness-based therapy" OR "compassion focused therapy" OR "CFT" OR "functional analytic psychotherapy" OR "FAP" OR "metacognitive therapy" OR "MCT") AND (offend* OR aggres* OR batterer OR perpetrator). Our search was limited to titles, abstracts, and keywords. We also examined the reference list of review articles assessing the effectiveness of CB "third wave" therapies (Byrne & Ní Ghráda, 2019; Mitchell & Wupperman, 2022; Tomlinson, 2018) to detect relevant manuscripts not identified through the databases search.

3.3. Data extraction

Duplicates were removed, and the remaining abstracts were read to select manuscripts for full-text eligibility analysis. Two researchers coded the fully read manuscripts selected for inclusion (Table 1). Disagreements were resolved through discussion. A third author resolved any remaining divergence. Data extraction included the following key characteristics: (a) sample characteristics (e.g., age; gender; sample size; criminal sanction); (b) country; (c) design of the study; (d) dropout rate; (e) modality of the program; (f) setting; (g) program duration; (h) theoretical models of the program; (i) targets of treatment; (j) type of outcome (clinical change, recidivism, psychopathology); and (k) treatment outcomes.

3.4. Methodological quality analysis

The quality of the studies was assessed using the Mixed Methods Appraisal Tool (MMAT - version 2018, Hong et al., 2018). The MMAT comprises two screening questions and five items for assessing the methodological quality of qualitative and quantitative studies (i.e., randomized controlled trials, non-randomized and descriptive) and mixed methods. Each of the criteria is rated as "yes," "no," or "can't tell".

4. Results

A total of 2294 references were identified from the initial search in databases. Of these, 842 were duplicates and removed. Thus, 1452 titles and abstracts were screened to access eligibility. The initial screening resulted in 76 references for full-text eligibility reading. Twenty-eight manuscripts were added through the hand search of reference lists, so 104 were fully read. A total of 50 papers met our criteria and were included in the systematic review. Two independent researchers conducted the process. Fig. 1 represents the flow diagram displaying the number of studies included in each phase of the selection process and the reasoning for inclusion/exclusion.

4.1. Quality assessment

Most studies were published in journal papers (n = 40), with ten unpublished doctoral (n = 6) or master's (n = 3) theses and one technical report from 2002 to 2023. The following research designs were used: quantitative randomized trials (n = 13), quantitative non-randomized studies (n = 18), and quantitative descriptive studies (n = 18). As for the randomized trial studies, only nine provided information about the randomization process.

Of the 50 studies, only one study met all five MMAT criteria (Malouf et al., 2017), eight presented four out of the five criteria (González-Menéndez et al., 2014; Lawrence et al., 2021; Lo et al., 2020; Milani et al., 2013; Nesset et al., 2021; Nyamathi et al., 2017; Nyamathi et al., 2018; Silva, 2019), 14 studies showed three out of five criteria (Apsche et al., 2006; Gómez et al., 2014; Mohammadi et al., 2015; Moulden et al., 2020; Orengo-Aguayo, 2016; Plambeck, 2015; Rosenfeld et al., 2019; Silva, 2015; Sousa et al., 2023; Tomlinson, 2015; Wetterborg et al., 2020; Wettermann et al., 2020; Zarling et al., 2017; Zarling & Russell, 2022), 16 presented two criteria (Bianchini et al., 2019; Bouw et al., 2019; Drake & Barnoski, 2006; Evershed et al., 2003; Ferreira, 2012; Flores & Pascual, 2013; Lemmon, 2008; Moore et al., 2018; Pires, 2015; Sakdalan et al., 2010; Shelton et al., 2009; Shelton et al., 2011; Tomlinson & Hoaken, 2017; Trupin et al., 2002; Wahl, 2011; Zarling et al., 2015), and 10 met one criterion (Asmand et al., 2015; Banks et al., 2015; Berta & Zarling, 2019; Bradley & Follingstad, 2003; Brown et al., 2013; Craven & Shelton, 2020; Eccleston & Sorbello, 2002; Long et al., 2011; Rosenfeld et al., 2007; Wupperman et al., 2012). One study met no criteria (Gee & Reed, 2013). For further information on the studies' methodological quality assessment, see supplementary files.

Table 1
Studies characteristics and outcomes.

Study	Design	Sample characteristics	Country	Treatment program and type	Intervention format, timing, setting, and offense/mental needs	Outcome measures	Outcome
Apsche et al. (2006)	Quantitative RCT	MDT Mage = 16.1, DBT Mage = 15.9. Range 15–18. DBT group: 6 MDT group: 5 Males.	USA	MDT vs. DBT	Group, 1-year, forensic hospital, aggression, and conduct problems	Clinical change (60 days follow-up)	MDT and DBT had positive effects on reducing physical aggression. However, MDT was significantly more effective. MDT was effective in reducing depression (more than DBT) and suicidal ideation.
Asmand et al. (2015)	Quantitative descriptive (pre-test/post-test)	Range 18–40. Males.	Iran	DBT vs. REBT	Group, 16 sessions (1 h), community	Clinical change (no follow-up)	DBT has affected all irrational beliefs, and REBT has only affected changing some beliefs. No statistical differences were found between pre-and post-test scores for anxiety, but DBT seems more efficient than REBT.
Banks et al. (2015)	Quantitative descriptive (Pilot, pre- post-test)	Mage = 16 (SD = 1.33, range 14–18). Females.	USA	Modified DBT	Group, 12 weeks (90-min), juvenile rehabilitation centre	Clinical change (no follow-up)	Participants experienced a decrease in internalizing symptoms. The DBT group reported significant reductions in the problems subscale.
Berta and Zarling (2019)	Quantitative descriptive (Cohort)	Mage = 36 (SD = 10). Males.	USA	ACTV	Group, 2 months (24 two-hr sessions), jail, domestic violence	Clinical change and recidivism (1-year follow-up)	Experiential avoidance decreased significantly throughout treatment.
Bianchini et al. (2019)	Quantitative RCT	Mage = 41.79 (SD = 8.14). Males.	Italy	DBT vs. usual REMS	Group and individual, 12 months, forensic hospital, violent offenses	Clinical change	Reduction in difficulties with emotional regulation in the DBT group. Significant reduction in motor impulsiveness in the DBT-treated group alone. No detectable change in alexithymia.
Bouw et al. (2019)	Quantitative descriptive (pre– pos-test)	Mage: 40.1(SD = 11.1). Males.	Netherlands	MBSR	Group, 8 weeks, prison, violent offenses	Clinical change, inmates, and staff views	Inmates, instructors, and prison staff were positive about the intervention. Significant improvements in self-esteem, anger, anxiety/depression, coping mechanisms, and emotion-driven inhibitory control. No differences in stress.
Bradley and Follingstad (2003)	Quantitative RCT (Pilot)	Mage = 36.67 (SD = 8.27, range 34–54). Females.	USA	DBT vs. Comparison	Group, 9 + 9 sessions (2.5 h), prison	Clinical change	Reductions in PTSD, mood, and interpersonal symptoms in DBT group. No differences between completers and non-completers. Significant decreases in depression, Dissociation, Anxious Arousal, and Intrusive Experiences.
Brown et al. (2013)	Quantitative descriptive (pilot study)	Mage = 30.8 (SD = 10.1, range 19–63). Males and females.	USA	Modified DBT (DBT + Skills System [SS])	Group and individual, 4 years weekly (1 h individual DBT and 1 h group SS + 1 h group for sex offenders), forensic hospital/ID	Clinical change	Clinically significant reductions in Red Flags, Dangerous Situations, and Lapses (violent and illegal behaviours). Large reductions in challenging behaviours were observed. Much of the improvement for most behaviours occurred during the 1st year; the most serious behaviours improved more slowly. Dramatic reductions in incarceration, psychiatric hospitalization, and OSRT in the DBT-SS group.
Craven and Shelton (2020)	Quantitative descriptive	Mage = 33.8 (SD = 15.9, range	UK	Mindfulness module of the "I	Group, 12 sessions, forensic hospital, intellectual disabilities	Clinical change and participants' views	Reduction of challenging behaviour with increased signs of emotional

(*continued on next page*)

Table 1 (*continued*)

Study	Design	Sample characteristics	Country	Treatment program and type	Intervention format, timing, setting, and offense/mental needs	Outcome measures	Outcome
	(Quasi-experimental)	20–61). Males.		Can Feel Good" program			regulation. Reduction in depression and low self-esteem. Increased anxiety post module. No significant changes in EBP or IBP. The participants did not rate improvements in their ability to regulate attention, awareness of experience, or non-judgmental attitude. The staff team observed improvements in using mindfulness skills, although non-significant.
Drake and Barnoski (2006)	Quantitative non-randomized	Mage = 14.7 Males and females.	USA	DBT vs. Comparison	Group and individual, juvenile rehabilitation centre	Recidivism	The DBT group recidivated at a lower rate than the comparison group, but the differences are not statistically significant.
Eccleston and Sorbello (2002)	Quantitative descriptive (Cross-sectional)	No information on mean age. Males and females.	Australia	RUSH (DBT adaptation)	Group and individual, 20 sessions of 2 h, twice per week (10 weeks), prison, suicide, and self-harm	Clinical change	Self-harming and dysfunctional behaviour declined. Decline in symptomatology. Marginal increases in depression and anxiety at post-test.
Evershed et al. (2003)	Quantitative non-randomized (Pilot)	Mage = 35.75 (SD = 9.75). Males.	UK	DBT vs. TAU	Group and individual (18 months), forensic hospital	Clinical change	DBT individuals reported greater gains than TAU in reducing the seriousness of violence and hostility, cognitive anger, disposition to anger, outward expression of anger, and anger experience. DBT group either remains stable or improves on all measures. TAU showed deterioration.
Ferreira (2012)	Quantitative descriptive (Pre-pos-test)	Range 18–61. Males.	USA	Modified DBT	Group, 24 weekly sessions (1 h), prison, violent and non-violent offenses	Clinical change	Increases in task-oriented coping for DBT individuals who participated for at least 16-weeks. Decreases in emotion-oriented coping for individuals who participated in the DBT for at least 16-weeks and 8-weeks, despite non-significant. Length of time in the DBT group did not affect coping style.
Flores and Pascual (2013)	Quantitative non-randomized (pre- pos-test)	Mage = 49,55 Males.	Spain	ACT-based protocol vs TAU (waitlist)	Group and individual, 14 sessions (1.5 h), prison, domestic violence	Clinical change	Significant differences in favour of the ACT group in avoidance, impulsivity, and effort to eliminate discomfort, activity level, and behaviour valued by staff. No record of complaint or recidivism for any of the subjects who achieved freedom after the intervention.
Gee and Reed (2013)	Quantitative descriptive (Pilot study)	Range 18–55. Females.	UK	Modified DBT	Group and individual, 8-week. 2 groups per week (90 min), and 1 individual session (50 min), prison, violent offenses/BPD	Clinical change	Reduction in time spent on the assessment and care and in adjudications. Improvement in overall mental health and a high percentage of client satisfaction. Women were generally more able to manage their distress in more effective and less destructive ways.
Gómez et al. (2014)	Quantitative descriptive (Case series study)	Range 15–17. Males and females.	Spain	Brief protocol ACT-based	Group, 4 90-min sessions over 2 weeks, community, conduct disorders	Recidivism and clinical change (1 year follow-up	Decreases in disruptive behaviour in class and increases in a desirable behaviour. Decreases in

(*continued on next page*)

Table 1 (*continued*)

Study	Design	Sample characteristics	Country	Treatment program and type	Intervention format, timing, setting, and offense/mental needs	Outcome measures	Outcome
							impulsivity. The changes expanded across different areas in their lives. No participant presented illegal behaviours at 1-year follow-up.
González-Menéndez et al. (2014)	Quantitative RCT	Mage = 33.59 (SD = 7.5, range 22–49). Females.	Spain	ACT vs. CBT	Group, 16 weekly sessions (90 min), prison, drug offenses	Clinical change and drug outcomes (6, 12, and 18-month follow-up)	Reductions in drug abuse, anxiety, and avoidance in both conditions, without differences between groups. The percentages of mental disorders were reduced only in ACT participants. At the 18-month follow-up, ACT was better than CBT in maintaining abstinence rates.
Lawrence et al. (2021)		Mage = 33.73 (SD = 10.10) Males	USA	ACTV vs. Duluth/ CBT (TAU)	Group, 24 weekly sessions, community, domestic violence	Recidivism (up to 5 years follow-up)	Significant differences between TAU and ACT in completion rates were found, with ACTV group being more likely to complete intervention (TAU = 50.3 % vs ACT = 59.9 %). Men in TAU were more likely to receive any conviction, a violent conviction, and a DV conviction compared to men in ACTV. Time to new conviction post-treatment was shorter for men in TAU. The risk of receiving any new conviction was associated with noncompletion for TAU than ACTV participants.
Lemmon (2008)	Quantitative non-randomized (Quasi-experimental	Mage = 35 (range 19–55). Females.	USA	DBT Coping Skills vs. TAU	Group, 24-week, prison	Clinical change (no follow-up)	No differences were found between DBT and TAU groups in coping ability and impulsiveness. However, the treatment group significantly improved coping abilities and lowered impulsiveness, while changes within the comparison group were non-significant.
Lo et al. (2020)	Quantitative non-randomized (Experimental)	Mage = 37.68 (SD = 9.04). Females.	Australia	Positive psychology, CBT, and mindfulness	Group, 9 sessions of 1.5 h and bi-weekly sessions over 5 weeks, prison	Clinical change (1 month follow-up)	Improvements in well-being and distress. Participants reported low physical aggression, more consideration of others, learning to treat others as they want to be treated, paying more attention to people when they are talking, being able to stop and think in the moment, and being able to recognize their own strengths. The training was well received by participants and staff.
Long et al. (2011)	Quantitative descriptive (pre- post-test)	Mage = 31.7 (SD = 8.5). Females.	UK	DBT adapted (completers vs. non-completers)	Group, Weekly, 90-min (17 sessions), forensic hospital, violent offenses	Clinical change (3 months follow-up)	Completers: significant changes on CRI subscales - positive reappraisal, problem-solving, and alternative rewards; on BPRS-E subscales - anxiety and suicidality; and DWF items - ability to engage in activities to reduce negative mood and ability to recognize mood changes.

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Table 1 (*continued*)

Study	Design	Sample characteristics	Country	Treatment program and type	Intervention format, timing, setting, and offense/mental needs	Outcome measures	Outcome
							Non-completers: Tension scores increased; BPRS-E hostility scores were reduced. 3-month follow-up: reductions in risk behaviours for completers; no change in risk behaviours for non-completers.
Malouf et al. (2017)	Quantitative RCT (pilot)	Mage = 37.2 (SD = 15.7, range 18–81). Males.	USA	*Re*-Entry Values and Mindfulness Program (REVAMP) + TAU vs. TAU	Group, twice a week for 90 min for 4 weeks, jail	Clinical change and risky behaviours (Follow up: self-report at 3 months and official records at 3 years)	Increases in willingness/ acceptance compared to TAU. Increases in self-judgment and shame. Despite non-significant, all risky behavioural outcomes (alcohol use, alcohol symptoms, marijuana use, marijuana symptoms, self-reported crime, official record crime frequency, official record crime latency) favoured REVAMP. REVAMP was associated with reduced recidivism. No improvements in self-control and emotion regulation. Participants provided positive evaluations of REVAMP.
Milani et al. (2013)	Quantitative RCT (experimental	Adolescents. Males.	Iran	MBCT vs. control	Group, 8 1.5-h sessions, two days a week, juvenile centre	Clinical change (2 weeks follow-up)	The experimental and control groups significantly reduced anger, physical aggression, and hostility. No significant reductions in verbal aggression.
Mohammadi et al. (2015)	Quantitative non-randomized (Quasi-experimental	Range 13–15. Males.	Iran	ACT vs. control (TAU)	Group, 8 sessions (90 min), juvenile centre, physical and verbal aggression, anger, hostility	Clinical change (2-month follow-up)	Significant differences between experimental and control groups at post-test. Treatment significantly decreased aggression. Results persisted in a follow-up test.
Moore et al. (2018)	Quantitative descriptive (Pilot pre-post-test)	Mage = 34.79 (SD = 8.48). Males.	USA	DBT	Group, 8 week, 8 sessions (1 h and 15 min each session), jail	Clinical change	Changes (despite non-significant) on WCCL subscales - skills usage, dysfunctional coping, and blaming others. Non-significant changes in emotional or behavioural dysregulation Participants feedback: helpful in teaching skills for maintaining employment.
Moulden et al. (2020)	Quantitative descriptive (pre- pos-test)	Mage = 36.36 (SD = 12.47). Males and females.	Canada	DBT	Group and individual, 1-year (weekly 2.5 h sessions), forensic hospital, psychosis	Clinical change	Higher scores on intrapersonal skills, improved insight into mental state, and decreased impression management. Increases in anger and wish for vengeance. Staff ratings: reductions in risk and most patients achieved early release.
Nesset et al. (2021)	Quantitative RCT	No information on age. Males.	Norway	CBT vs. MBSR	CBT: 2 individual sessions +30 h group. MBSR: 2 individual sessions +8 group sessions (16 h), outpatient forensic hospital, domestic violence	Clinical change (12 months follow-up)	Reductions in anxiety and depression (no differences between groups). The total symptom scores remained high in both groups. Small but significant reductions in emotional regulation scores at 12 months of follow-up in both groups. Post-treatment depression and anxiety were still at cut-off levels. The interventions had a

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Table 1 (*continued*)

Study	Design	Sample characteristics	Country	Treatment program and type	Intervention format, timing, setting, and offense/mental needs	Outcome measures	Outcome
							substantial effect on violent behaviour.
Nyamathi et al. (2017)	Quantitative RCT	Mage =39.1 (SD = 11.5) Females	USA	DBT-CM (Dialectical Behavioural Therapy – Corrections Modified) vs. Health Promotion (HP)	DBT-CM and HP 6 weekly group sessions and 6 weekly individual sessions (over 3 months), community	Clinical change and drug and alcohol measures	65.5 % of DBT-CM participants and 48.3 % of HP participants were abstinent for drug use (urine analysis and self-report). Drug abstinence increased at six-month follow-up in both groups. The magnitude of the increase in drug use abstinence was greater in the DBT-CM group. Participants in the DBT-CM group were more likely to become or remain alcohol abstinent; the HP group did not change. The differences in increased odds of substance abstinence were not significant.
Nyamathi et al., 2018	Quantitative RCT	Mage =39.1 (SD = 11.5) Females	USA	DBT-CM vs. HP	DBT-CM and HP 6 weekly group sessions and 6 weekly individual sessions (over 3 months), community	Clinical change and recidivism	HP participants were likelier to report a longer time since their last exited prison or jail. Recidivism was 15.5 % for DBT-CM and 20.7 % for HP. The effect of DBT-CM on reducing recidivism was greater among those who were younger, expressed a desire for help and participants with Desire for Help score > 35.
Orengo-Aguayo (2016)	Quantitative non-randomized (Quasi-experimental	Mage = 38.06 (SD = 9.51). Males.	USA	ACT	Group, 3 times per week for 4 weeks, 12 (2 h) sessions, jail, domestic violence	Clinical change and participant's views	Non-significant changes at post-test in outcome measures (ACT skills, internalizing symptoms, and externalizing behaviours). Participants positively viewed the ACT, and reported learning about and putting into practice the ACT skills.
Pires (2015)	Quantitative non-randomized (Exploratory clinical trial)	Mage = 16.71 (SD = 0.951, range 13–18). Males.	Portugal	CFT vs. TAU	Individual, 20 sessions, 5 months, juvenile centre, violent crimes	Clinical change	Trend of improvement in the treatment group in aggressive behaviour, self-compassion, compassion for others, and fear/compassion block. All subjects in the experimental group showed clinical improvement, while most subjects in the control group deteriorated.
Plambeck (2015)	Quantitative descriptive (pre post-test)	Range = 9–56. 70.7 % between 20 and 39. Males.	USA	ACT	Group, 90-min, weekly (8 weeks), jail, violent and non-violent offenses/ aggression and anger problems	Clinical change and recidivism (1-month follow-up)	No significant changes from the post-test to the follow-up on anger. Significant reductions in psychological inflexibility. Significant decreases in the number of problematic anger-related behaviours were reported at the end of treatment.
Rosenfeld et al. (2007)	Quantitative descriptive	Mage = 36.7 (SD = 11.7, range 17–70). Males.	USA	DBT	Group and individual, 24 weekly sessions (6 months), probation, stalking	Clinical change and recidivism (average length of follow-up 12.2 months)	Significant changes in WBSI and marginal significant changes in the STAXI. Treated offenders were significantly less likely to re-offend than dropouts. None of the completers were re-arrested for a subsequent stalking offense. No differences in re-arrest rates between groups.

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Table 1 (*continued*)

Study	Design	Sample characteristics	Country	Treatment program and type	Intervention format, timing, setting, and offense/mental needs	Outcome measures	Outcome
Rosenfeld et al. (2019)	Quantitative RCT	Mage = 36.03 (SD = 11.51). Males and females.	USA	DBT modified vs. CBT	Group and individual, 24 weekly sessions (1 h group and 45-min individual sessions), probation, stalking	Recidivism and clinical change (1-year follow-up)	No differences between treatments. The rates of reoffence suggest a very small, non-significant benefit from the more intensive DBT intervention, but the magnitude of this effect size does not reflect a clinically significant difference in treatment effects.
Sakdalan et al. (2010)	Quantitative descriptive (pilot, pre-pos-test)	Mage = 26.18 (SD = 2.92, range 23–29). Males and females.	New Zealand	Adapted DBT	Group and individual, 13 week (1.5 h sessions), community	Clinical change	Changes in the START risk and strength domains and the HONOS-LD. No change in the VABS-II. Participants reported that they enjoyed the course and learned a lot from the program.
Shelton et al. (2011)	Quantitative descriptive (pre–post-test)	Mage = 17.92 (SD = 0.796, range 16–19). Males.	USA	DBT - Corrections Modified	Group, 16-week, prison, violent and non-violent offenses	Clinical change	Improvements in physical aggression and distancing coping style. Changes in disciplinary tickets from pre- to post-test. Improved scores, although not significant, on PANAS negative affect and the WCCL self-control subscale.
Shelton et al. (2009)	Quantitative non-randomized (Cross-sectional)	Mage = 28 (SD = 10.29, range 16–59). Males and females.	USA	DBT - Corrections Modified	Group and individual, 16 weeks (group) + 8 weeks (individual), prison, violent and non-violent offenses	Clinical change (6-month and 12-month follow-up)	Correctional officers and mental health staff: better understanding of negative behaviours and learning alternative ways to help inmates (instead of punishment). They observed positive changes in participants' behaviours. Changes in seeking social support, accepting responsibility, planful problem solving, and escape-avoidance. PANAS negative symptoms and BPRS scores were significant for the adult male facility. Significant changes in BPAQ physical at pre-test and follow-up for adult and young males. Significant changes in disciplinary tickets at post-treatment, but not at 6-month follow-up.
Silva (2019)	Quantitative non-randomized (Controlled trial)	Mage = 15.67 (SD = 0.92). Males.	Portugal	CFT vs. CG (TAU)	Individual, 20 weeks, 60 min sessions, juvenile centre, psychopathic traits	Clinical change (3-month follow-up)	Psychopathic traits were reduced in the treatment group but not in the CG. While most participants from the CFT group improved on YPI-S and none deteriorated, the majority of participants from the CG deteriorated over time.
Silva (2015)	Quantitative non-randomized (Exploratory clinical trial)	Mage = 16.71 (SD = 0.951, range 13–18). Males.	Portugal	CFT vs. CG (TAU)	Individual, 20 sessions, 5 months, Juvenile centre, violent offenses	Clinical change	Improvement in the treatment group regarding the use of avoidance and attacking strategies to deal with shame. No flexibility in the psychopathic traits of the subjects of the experimental group.
Sousa et al. (2023)	Quantitative non-randomized (Controlled trial)	Mage = 15.82 (SD = 1.15) Males	Portugal	CFT vs. CG (TAU)	Individual, 20 sessions, 5 months, Juvenile centre, violent offenses	Clinical change (6-month follow-up)	CFT group continued to process the soothing system as unpleasant (with decreased vmHRV), but they seemed to become able to

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Table 1 (*continued*)

Study	Design	Sample characteristics	Country	Treatment program and type	Intervention format, timing, setting, and offense/mental needs	Outcome measures	Outcome
							adaptively recover from the stimuli without avoiding it or resorting to maladaptive coping strategies. CFT group revealed decreases in difficulties in emotion regulation. CG group seemed to have actively employed coping strategies associated with increases in vmHRV not only when the soothing system was triggered but also when recovering from the stimuli.
Tomlinson (2015)	Quantitative non-randomized (quasi-experimental	Mage = 41.06 (SD = 12.27, range 22–61). Males and females.	USA	DBT vs. TAU	Group, 6 months, community, violent and non-violent offenses	Clinical change (follow-up 6 months)	DBT group 1: decreases in overall aggression and premeditated and impulsive aggression during treatment and at 6 months follow-up; decreases in anger and hostility during treatment and at 6 months follow-up. DBT group 2: decreases in aggression during the treatment (marginally significant).
Tomlinson and Hoaken (2017)	Quantitative RCT	28–63 (Mage = 42.73, SD = 12.12). Males and females.	Canada	DBT	Group, 6 months (approximately 24 sessions), forensic hospital, violent and non-violent offenses	Clinical change (before, during, and after DBT); 12 months follow-up)	No changes in hostility between DBT and TAU over the first six months. DBT effects were most noticeable in the months following DBT. While some participants improved during TAU, several participants declined. DBT patients either improved or remained stable.
Trupin et al. (2002)	Quantitative non-randomized (Quasi-experimental)	Group 1 Mage = 14.8; Group 2 Mage = 15.5; Group 3 Mage = 15.2. Females.	USA	DBT vs. TAU (Mental Health Cottage; General Population Cottage; General Population Comparison Cottage)	Group, from 60 to 90 min, once or twice per week, for 4 weeks, juvenile centre	Clinical change (90 days follow-up)	MHC group demonstrated significant reductions in behaviour problems, while GPCC did not. DBT did not result in a significant decrease in risk assessment scores. During the DBT the number of youths participating in rehabilitative services increased. Females on the MHC showed decreases in serious behaviour problems. Suicidal acts, aggressive behaviour, and class disruption decreased during the year, but no significant reductions were found compared to the prior year. The staff's use of punitive actions reduced on MHC, and the staff's use of restrictive punitive actions increased on GPCD.
Wahl (2011)	Quantitative non-randomized (pilot, pre- post-test)	Mage = 38.16 (SD = 8.88, range 24–61). Females.	USA	DBT component vs. control	Group, 8 sessions (2 h, twice weekly for 4 weeks), prison, violent and non-violent offenses	Clinical change	No improvements in Borderline symptomology. Significant increases in the frequency of adaptive skills between weeks one and two in DBT group. Decreases in institutional infractions from the month prior to treatment to the month following treatment for DBT, but not for controls.

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Table 1 (*continued*)

Study	Design	Sample characteristics	Country	Treatment program and type	Intervention format, timing, setting, and offense/mental needs	Outcome measures	Outcome
Wetterborg et al. (2020)	Quantitative descriptive (Pragmatic clinical trial)	Mage = 35.3 (SD = 8.56). Males.	Sweden	DBT	Group and individual, 12 months (1 h + 2.5 h per week), outpatient forensic hospital and probation, BPD	Clinical change (1 year follow-up)	No reductions in suicide attempts. Reductions in self-destructive behaviours and decreases in rule-breaking and non-violent criminal offending. No substantial improvements in the alcohol use- or drug use-related outcomes. While symptoms of BPD and depression were reduced during treatment, anxiety remained high. Improvements among completers were maintained 1 year after the intervention.
Wettermann et al. (2020)	Quantitative non-randomized (quasi-experimental	Mage = 29.71 (SD = 7.35). Males.	Germany	R&R vs. DBT vs TAU	Group and individual, DBT: 12 months, R&R: 2 sessions of 2 h (18 weeks), Forensic hospital, violent and non-violent offenses	Clinical change (follow-up 2 to 3 months	Both programs revealed improvements in the measured constructs. Differences were found between R&R and DBT in word fluency, with those receiving R&R improving more than those receiving DBT. R&R seems effective in reducing reoffending, DBT in reducing emotion regulation problems. No superiority for one intervention over TAU or differential effects between the two programs was found.
Wupperman et al. (2012)	Quantitative descriptive (pilot trial, pre- post-test)	Mage = 38 (SD = 13.44, range 21–64). Females.	USA	Mindfulness & Modification Therapy (MMT)	Individual, 12 weekly 90-min sessions +11 60-min sessions, community, domestic violence/alcohol abuse and aggression	Clinical change, recidivism, and toxicology tests	Significant decreases in alcohol use, drug use, and aggression.
Zarling et al. (2015)	Quantitative RCT	Mage = 31.45 (SD = 7.39, range 19–67). Males and females.	USA	ACT vs. Attention placebo control	Group, 12 weekly 2-hr sessions, community, domestic violence/ aggression	Clinical change (3- and 6-months follow-up)	Significant reduction in physical and psychological aggression, partially mediated by experiential avoidance and emotion dysregulation. Reductions in recidivism 1-year post-treatment.
Zarling et al. (2017)	Quantitative non-randomized	Mage = 33.37 (SD = 10.65, range 18–70). Males.	USA	ACTV vs. Duluth Model/CBT.	Group, 24 weekly sessions, community, domestic violence	Recidivism (1 year follow-up)	No differences between groups in average number of domestic violent (DV) charges. During intervention: fewer ACTV participants were charged compared with Duluth/CBT participants; men in the Duluth/CBT group had higher odds of receiving any charges. After 12 months: ACTV participants were less likely to be arrested. Significantly fewer ACTV participants had DV charges. The odds of Duluth/CBT men being charged with a violent offense were higher than for men in the ACTV group.
Zarling and Russell (2022)	Quantitative RCT	Mage = 33.84 (range 18–66). Males.	USA	ACT vs. Duluth/ CBT	Group, 24 sessions, once per week (90 min), community, domestic violence/IPV	Clinical change and recidivism	ACT participants did not show differences in domestic assault charges at 1 year follow-up. ACT participants acquired fewer violent charges and non-violent charges than Duluth participants. ACT victims

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Table 1 (*continued*)

Study	Design	Sample characteristics	Country	Treatment program and type	Intervention format, timing, setting, and offense/mental needs	Outcome measures	Outcome
							reported fewer IPV behaviours than Duluth victims at 1 year follow-up.

Note. DBT = Dialectical Behavioural Therapy; ACT = Acceptance Commitment Therapy; CFT = Compassion Focused Therapy, MBSR = Mindfulness-Based Cognitive Therapy; MBCT = Mindfulness-Based Cognitive Therapy; MDT = Mode Deactivation Therapy; REBT = Rational Emotional Behaviour Therapy; ACTV = Achieving Change through Values-Based Behaviour; REMS = Residenze per l'Esecuzione delle Misure di Sicurezza; RUSH = Real Understanding of Self-Help Program; TAU = Treatment As Usual; BPD = Borderline Personality Disorder; ID = Intellectual Disabilities; RCT = Randomized Control Trial; PANAS = Positive and Negative Affect Scale; EBP = Externalizing Behaviour Problems; IBP = Internalizing Behaviour Problems; WCCL = Ways of Coping Checklist; BPRS-E = Expanded Brief Psychiatric Rating Scale; CRI = Coping Responses Inventory; YPI – S = Youth Psychopathic Traits – Short Version; SYART = Short-term Assessment of Risk and Treatability; VABS-II = Vineland Adaptative Behaviour Scales – Second Edition; HONOS-LD = Health of the Nation Outcome Scales for People with Learning Disabilities; WBSI = White-Bear Suppression Inventory; STAXI = State-Anger Expression inventory; BPAQ = Buss-Perry Aggression Questionnaire.

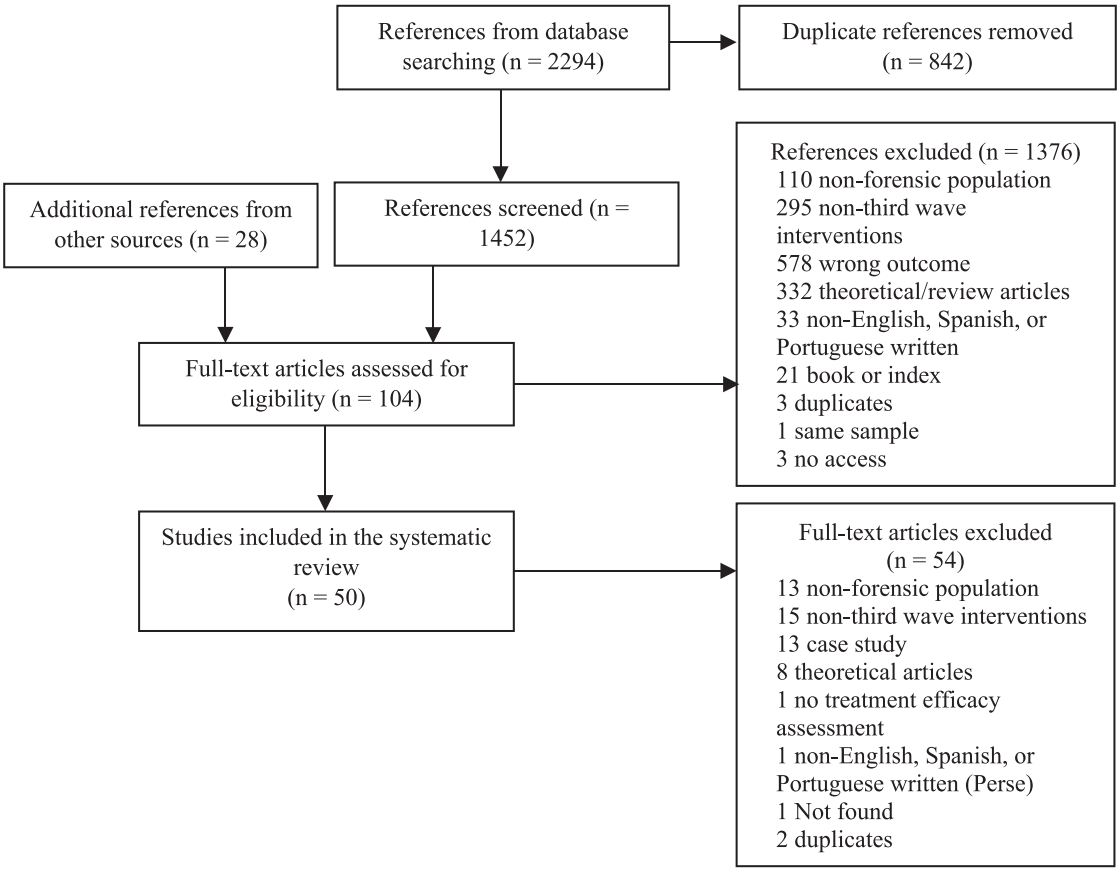


Fig. 1. Flow diagram.

4.2. Characteristics of studies included

4.2.1. Samples

The samples size ranged from 5 to 3474, with a mean of 134.22 (*SD* = 502.63). Ages varied from 13 to 70 years. In 28 studies, the sample comprised male individuals, 12 female individuals, and 10 had both genders (cf. Table 1). The 50 studies yielded a total sample population of 6711 participants that covered offenses like violent and non-violent offenses (e.g., trafficking, burglary; $n = 8$), domestic violence (DV) ($n = 9$), violent offenses (e.g., assault, homicide, sex offenses; $n = 5$), stalking ($n = 2$), and drug offenses ($n = 1$); 25 studies did not provide information regarding the type of offense. Mental health difficulties, such as physical and verbal aggression, anger, and hostility ($n = 5$), intellectual disabilities ($n = 2$), conduct disorders ($n = 2$), BPD ($n = 2$), psychosis ($n = 1$), suicide and self-harm ($n = 1$), alcohol and/or drug abuse ($n = 2$), and psychopathic traits ($n = 2$) were also included. Only ten studies performed specific risk assessments.

More than half of the studies were conducted in the United States ($n = 26$). Four were conducted in the United Kingdom and Portugal, three in Spain and Iran, two in Canada and Australia, and one in Sweden, Netherlands, Italy, Norway, New Zealand, and Germany.

4.2.2. Treatment approaches

The treatment approaches of the papers covered ACT, CFT, DBT, and MBA. Twenty-eight studies used DBT, eleven used ACT, and four used CFT. MBA was used in seven studies: three studies used MBCT; two studies used MBSR; one used Mindfulness and Modification Therapy (MMT); and one focused on pre and post-gains of a mindfulness module from the "I Can Feel Good" DBT skills program. See details in Table 1.

The interventions targeted a range of psychosocial variables related

to emotions, personality, and psychopathology (impulsivity, anger, hostility, problematic anger-related behaviours, psychological inflexibility, psychopathic traits, BPD, antisocial behaviour, and intellectual disabilities with challenging behaviours), coping strategies, intrapersonal skills, suicide and self-harm prevention, risk behaviour, substance abuse, and offending behaviour including institutional rule-breaking, physical aggression, stalking, conduct disorder.

4.2.3. Treatment procedures

Twenty-seven studies used group intervention, 17 used both group and individual sessions, and six used individual intervention. Group sessions ranged between eight and 24, while individual sessions ranged between four and 20 (cf. Table 1).

Twenty-two studies did not include a control/comparison group, and 28 did. Of the 28 that did, 16 compared the program/intervention with TAU/comparison group (Bradley & Follingstad, 2003; Drake & Barnoski, 2006; Evershed et al., 2003; Flores & Pascual, 2013; Lemmon, 2008; Malouf et al., 2017; Milani et al., 2013; Mohammadi et al., 2015; Pires, 2015; Silva, 2015; Silva, 2019; Sousa et al., 2023; Tomlinson, 2015; Trupin et al., 2002; Wahl, 2011; Zarling et al., 2015). Twelve studies compared two intervention types (Asmand et al., 2015; Apsche et al., 2006; Bianchini et al., 2019; González-Menéndez et al., 2014; Lawrence et al., 2021; Nesset et al., 2021; Nyamathi et al., 2017; Nyamathi et al., 2018; Rosenfeld et al., 2019; Wettermann et al., 2020; Zarling et al., 2015; Zarling & Russell, 2022).

Eighteen studies took place in prison settings, ten in forensic psychiatric hospitals, nine in juvenile correctional centers, ten in the community, two in outpatient forensic hospitals, and one in multiple contexts (outpatient forensic hospital and probation). Dropout rates varied between 0 % (e.g., Apsche et al., 2006; Berta & Zarling, 2019; Gómez et al., 2014) and 53.2 % (Gee & Reed, 2013).

Thirty-five studies used clinical change as an outcome, three used recidivism (Zarling et al., 2017; Drake & Barnoski, 2006; Lawrence et al., 2021), nine used both clinical change and recidivism (Apsche et al., 2006; Berta & Zarling, 2019; Gómez et al., 2014; Malouf et al., 2017; Nyamathi et al., 2018; Plambeck, 2015; Rosenfeld et al., 2007; Rosenfeld et al., 2019; Zarling & Russell, 2022), two used clinical change and drug tests (González-Menéndez et al., 2014; Nyamathi et al., 2017) and one used clinical change, recidivism, and toxicology tests (Wupperman et al., 2012). The follow-up period ranges from two weeks (Gómez et al., 2014; Milani et al., 2013) to 10 years (Wettermann et al., 2020), but the most common is one year or less. Twenty studies had no follow-up.

4.2.4. Treatment outcomes

Studies using ACT approach overall reported significant reductions on the level of experiential avoidance and psychological inflexibility (Berta & Zarling, 2019; Flores & Pascual, 2013; González-Menéndez et al., 2014), aggression and its dimensions (physical aggression, verbal aggression, anger, and hostility; Mohammadi et al., 2015; Plambeck, 2015; Zarling et al., 2015; Zarling & Russell, 2022), impulsivity (Flores & Pascual, 2013; Gómez et al., 2014), drug use (González-Menéndez et al., 2014), and recidivism (Berta & Zarling, 2019; Flores & Pascual, 2013; Lawrence et al., 2021; Zarling et al., 2015; Zarling et al., 2017; Zarling & Russell, 2022). In Gómez et al. (2014), the changes found expanded across different areas of the participants' lives (i.e., family, social relationships, school achievement, and occupational status). A follow-up of a prior study from González-Menéndez et al. (2014) found that ACT was better than CBT in maintaining drug abstinence rates and reducing mental disorders (except for anxiety symptoms). While changes in anxiety observed in the CBT group deteriorated after six months, the ACT group displayed significant progressive decreases at six months. Other studies comparing ACT group intervention with Duluth (CBT) intervention (e.g., Lawrence et al., 2021; Zarling et al., 2017; Zarling & Russell, 2022) found promising results regarding ACT's potential to reduce recidivism among IPV perpetrators. On the other hand, Orengo-Aguayo (2016) found no significant changes in outcomes, i.e., ACT skills, internalizing, and externalizing behaviours. However, participants assessed the ACT treatment positively and reported learning about and putting into practice the ACT skills.

DBT studies overall reported reductions in difficulties with emotional regulation and impulsivity (Bianchini et al., 2019; Lemmon, 2008), challenging behaviours (Brown et al., 2013), aggression, and impulsive behaviours (Apsche et al., 2006; Evershed et al., 2003; Shelton et al., 2009; Shelton et al., 2011; Tomlinson, 2015; Tomlinson & Hoaken, 2017; Wahl, 2011), hostility (Tomlinson, 2015; Tomlinson & Hoaken, 2017), externalization of blame (Moore et al., 2018), symptoms of anxiety, depression and/or low self-esteem (Asmand et al., 2015; Banks et al., 2015; Bradley & Follingstad, 2003; Wetterborg et al., 2020), self-harming and dysfunctional behaviour (Eccleston & Sorbello, 2002; Gee & Reed, 2013; Long et al., 2011), PTSD symptoms (Banks et al., 2015; Bradley & Follingstad, 2003), and drug and alcohol abstinence (e.g., Nyamathi et al., 2017). Reductions in incarceration, risk of reoffending, rule-breaking, and lower rates of reoffence at follow-ups were also reported (Brown et al., 2013; Drake & Barnoski, 2006; Moulden et al., 2020; Nyamathi et al., 2018; Rosenfeld et al., 2007; Rosenfeld et al., 2019; Sakdalan et al., 2010; Wetterborg et al., 2020; Wettermann et al., 2020). Also, positive changes were found in well-being and functioning (Gee & Reed, 2013), problem-solving, alternative rewards, and anxiety (Long et al., 2011). Besides, intrapersonal skills, insight into mental state, acknowledgment of problems/accepting responsibility, openness and willingness to acknowledge problems (Moulden et al., 2020; Shelton et al., 2009), and coping skills (Ferreira, 2012; Lemmon, 2008; Moore et al., 2018; Sakdalan et al., 2010; Shelton et al., 2009; Shelton et al., 2011; Wahl, 2011; Wettermann et al., 2020), seeking of social support, planful problem solving demonstrated a significant change from baseline to follow-up (Shelton et al., 2009).

In the study by Wettermann et al. (2020), the tested programs (DBT vs. R&R) were associated with improvements in nearly all the measured constructs, but no superiority was found between the two programs over TAU. Even so, they concluded that R&R seemed to be effective in reducing reoffending and DBT in reducing emotion regulation problems. In the study by Apsche et al. (2006), the MDT intervention proved to be superior to DBT, although both treatments have had positive effects in reducing rates of physical aggression.

Three studies (two from the same team) paid attention to providing correctional officers and mental health staff with a better understanding of alternative ways to help individuals instead of using punitive measures (Shelton et al., 2009; Shelton et al., 2011; Trupin et al., 2002). In the study by Trupin et al. (2002), the group in which the staff did not receive the DBT intensive training adhered less to the DBT model and used more punitive actions.

There were also some reports of non-significant results in this set of studies with the DBT approach. Bianchini et al. (2019) reported that DBT had no significant effect on alexithymia; however, only two patients had such a deficit. Rosenfeld et al. (2019) and Tomlinson and Hoaken (2017) reported the absence of any significant difference between the DBT and TAU groups. Tomlinson and Hoaken (2017) found a significant decline in hostility only at the 12-month follow-up. Trupin et al. (2002) reported no significant changes in risk assessment. Wetterborg et al. (2020) found no substantial improvements in any of the alcohol or drug-use-related outcomes and no reduction in suicide attempts. Also, while symptoms of BPD and depression were substantially reduced during treatment, anxiety remained high.

The four CFT studies included were conducted by the same team and addressed the evaluation of a structured psychotherapeutic intervention with juveniles. Pires (2015) found moderate effects in aggressive behaviour, self-compassion, compassion for others, and fear/compassion block. Silva (2015) also found that CFT was successful regarding the use of avoidance and attacking strategies to deal with shame, although with no flexibility in the psychopathic traits in the subjects of the experimental group. The study by Silva (2019) found a large effect size

in the reduction of psychopathic traits. Finally, the study conducted by Sousa et al. (2023) revealed that although CFT participants continued to process the soothing system as unpleasant, they became more able to adaptively recover from the stimuli without avoiding it or resorting to maladaptive coping strategies.

MBA studies generally reported benefits in emotional regulation (Wupperman et al., 2012), emotional distress, i.e., anxiety and depression (Nesset et al., 2021), aggression/violent behaviour (Lo et al., 2020; Milani et al., 2013; Nesset et al., 2021; Wupperman et al., 2012), impulsivity and coping styles (Bouw et al., 2019), and self-esteem (Bouw et al., 2019; Malouf et al., 2017). However, Craven and Shelton's (2020) study did not reveal clinical changes, and Milani et al. (2013) reported an absence of significant reductions in verbal aggression, which they attributed to the prison environment. The studies by Lo et al. (2020) and Malouf et al. (2017) took a slightly different approach, focusing on participants' well-being and positive gains. The study from Lo et al. (2020) addressed improvements in well-being and distress, skills such as being more considerate of others, learning to treat others as they want to be treated, paying more attention to people when they are talking, being able to stop and think at the moment, and being able to recognize their strengths that they are proud of. Malouf et al. (2017) reported increased willingness/acceptance, self-judgment, and shame.

5. Discussion

The current systematic review aimed to describe and assess the effectiveness of different CB "third wave" therapies with justice-involved individuals. DBT was the most used approach, followed by ACT and MBA. Indeed, previous reviews on the utility of "third wave" therapies in forensic and correctional settings also pointed to an over-representation of DBT approaches followed by ACT approaches (e.g., Byrne & Ní Ghráda, 2019; Tomlinson, 2018; Visdómine-Lozano, 2022). A possible explanation for the highest use of DBT and ACT approaches might be the promising results of these approaches both in clinical (e.g., DeCou et al., 2019; Gloster et al., 2020) and forensic settings (e.g., Byrne & Ní Ghráda, 2019; Tomlinson, 2018; Visdómine-Lozano, 2022). Contrarily, CFT was only used in four studies, all of them conducted by the same team. This finding suggests that this therapy, despite its promising results with clinical populations (e.g., Craig et al., 2020), has aroused little interest from professionals and researchers in forensic contexts. In this review, no studies were found using FAP, or MCT approaches, attesting to the dearth of research and evidence of these approaches for justice-involved populations, as previous reviews noted (e.g., Byrne & Ní Ghráda, 2019; Visdómine-Lozano, 2022). The absence of studies using FAP and MCT approaches with forensic populations might be due to the idiographic nature of treatment targets in the case of FAP (Maitland et al., 2017) or to the insufficient results regarding the efficacy of such therapies with clinical populations (e.g., Kanter et al., 2017; Sharma et al., 2022).

Results from this systematic review pointed out that "third wave" therapies targeted a wide range of psychological variables, such as emotion regulation, personality, psychopathology, impulsivity, anger, hostility, psychopathic traits, coping skills, substance abuse, and offending behaviour, identified as risk factors for recidivism and violence (Bonta & Andrews, 2017; Goodley et al., 2022). This finding is relevant as recidivism prevention, the ultimate goal of the criminal justice system, requires effective interventions based on and directed to the factors that place individuals at risk and make it difficult for them to successfully reintegrate into society (Beaudry et al., 2021). Indeed, research has supported that interventions adhering to the RNR principles were more effective in reducing recidivism (Dowden & Andrews, 2000; Hanson et al., 2009). However, most of the tested interventions were developed in the community or clinical populations for other outcomes (than offending behaviour), and most of the studies included in this systematic review did not seem to specifically focus on reducing criminogenic needs, as proposed by RNR model (Bonta & Andrews, 2017). Indeed, only a small number of studies conducted specific risk assessments, and it is unclear if or how the therapy was implemented following RNR principles. Thus, future studies should address this limitation, including specific risk assessments and implementing therapy in accordance with RNR principles, as Tomlinson (2018) proposed.

Contrary to most studies using the CBT approach (e.g., Harrison et al., 2020; Henwood et al., 2015; Wilson et al., 2005), studies included in this systematic review included other variables than recidivism or reoffence to assess intervention efficacy. This finding is in accordance with more recent proposals that point to a need to assess not only behavioural changes but also changes in other variables associated with the origins and maintenance of antisocial behaviour (Brazão et al., 2015). The assessment of other variables is in accordance with the RNR principles (Bonta & Andrews, 2017) but also helps to better understand the mechanisms behind recidivism and reoffence reductions.

Overall, this review provides evidence for the effectiveness of "third wave" treatment interventions with justice-involved individuals regardless of the study design (quantitative randomized trials, quantitative non-randomized studies, and quantitative descriptive studies), sample size, participants' gender (i.e., male, female, or both), and type of offenses (violent or non-violent offenses). Studies reported significant changes after therapy across the different approaches included in this systematic review.

The included studies using DBT approaches overall reported positive changes after treatment completion. Positive outcomes have been found in emotional regulation, aggression, impulsivity, hostility, anxiety, depression, PTSD, self-esteem, self-harming and dysfunctional behaviour, and coping skills. Studies also have reported reductions in recidivism and reoffending. These findings are in line with DBT aims (Linehan, 1993) and other reviews' conclusions (Tomlinson, 2018). However, studies comparing DBT with other treatment approaches (e.g., CBT, MDT), despite the positive results found regarding DBT, tend to demonstrate equivalence between the different types of interventions (Rosenfeld et al., 2019; Wettermann et al., 2020), or even superiority of other approaches, such as MDT (Apsche et al., 2006). Only Asmand et al.'s (2015) results favoured DBT over REBT, and Nyamathi et al.' (2017) and Nyamathi et al.' (2018) results favoured DBT over Health Promotion approach.

Another finding regarding DBT relates to delayed improvements after the conclusion of the intervention. For example, Tomlinson and Hoaken (2017) reported no significant improvements immediately after the intervention but only some months later; Brown et al. (2013) found that most of the improvement in the less severe behaviours occurred in the first year, but the more severe behaviours improved more gradually across the first four years (Brown et al., 2013). These happen perhaps because patients take time to consolidate and synthesize their skills – a possible incubation effect (Tomlinson & Hoaken, 2017). An interesting finding noted in different studies was the reporting of increases in anxiety, depression, and anger after the treatment (Eccleston & Sorbello, 2002; Moore et al., 2018; Moulden et al., 2020). A possible explanation for these results might relate to the fact that individuals become more aware of their internal and external signs (Craven & Shelton, 2020). The anxiety may be related to an increased understanding and awareness of these experiences. Other authors suggested that lower levels of anxiety at pre-treatment may reflect individuals' inability to identify and disclose painful emotions, while higher post-treatment scores may suggest greater awareness and insight into their emotional states (Eccleston & Sorbello, 2002).

Studies assessing ACT approaches reported that individuals who attend therapy reported significant decreases in experiential avoidance and psychological inflexibility, aggression, anger, hostility, impulsivity, and recidivism following previous reviews (Byrne & Ní Ghráda, 2019; Visdómine-Lozano, 2022). Bolstering these findings is the fact that the studies comparing ACT with CBT approaches (González-Menéndez et al., 2014; Lawrence et al., 2021; Zarling et al., 2017; Zarling & Russell, 2022) and with control conditions favoured ACT – both in recidivism

and psychological changes. This result is of particular importance as recent meta-analyses found conflicting results regarding CBT efficacy, claiming new approaches in justice-involved individuals' treatment (Beaudry et al., 2021). Interestingly, most studies included in this systematic using ACT were conducted with IPV perpetrators (Berta & Zarling, 2019; Flores & Pascual, 2013; Lawrence et al., 2021; Zarling et al., 2015; Zarling et al., 2017; Zarling & Russell, 2022). The criticism regarding the efficacy of traditional treatments for IPV perpetrators has led to substantial efforts to identify alternative strategies and techniques for treating IPV perpetrators, such as ACT (Cunha & Caridade, 2023). Results suggest the feasibility and utility of ACT treatments for IPV, reducing aggression beyond the effects of a CBT/Duluth Model (Lawrence et al., 2021; Zarling et al., 2017; Zarling & Russell, 2022).

Other studies using ACT reported an extension of changes across individuals' life areas, such as family, social relationships, school achievement, and occupational status (Gómez et al., 2014). The ACT studies also revealed that results tend to persist over the follow-up period (e.g., Gómez et al., 2014; Lawrence et al., 2021; Mohammadi et al., 2015; Zarling et al., 2017; Zarling & Russell, 2022), and often treatment gains were found after the treatment (González-Menéndez et al., 2014; Plambeck, 2015; Zarling et al., 2015). Continuous treatment improvements may result from teaching participants to modify the stimulus conditions that affect them (Villagrá Lanza & González Menéndez, 2013). Zarling et al. (2015) suggest that improvements over time are due to the skills learned in treatment that are reinforced through repeated practice. Thus, ACT demonstrates treatment gains even after treatment ends because a cumulative, positive effect is gained from the skills learned and practiced. Less positive were the results of ACT in decreasing internalizing symptoms (e.g., González-Menéndez et al., 2014; Orengo-Aguayo, 2016), as also noted by Byrne and Ní Ghráda (2019). Thus, ACT might act more specifically in externalizing behaviours, such as aggression, impulsivity, and recidivism, rather than internalizing ones. Indeed, ACT does not aim to change difficult thoughts and feelings or decrease symptomatology; instead, it aims to increase psychological flexibility, focusing on the values that matter to individuals to take committed action steps toward a life that fits with their values (Hayes et al., 2006). However, a study by Orengo-Aguayo (2016) found no significant pre- to post-intervention changes in any of the outcomes assessed (i.e., internalizing and externalizing problems). These results, however, might have an explanation. Indeed, ACT developers have found, in some cases, an immediate worsening effect when participants come into contact with previously aversive and avoided thoughts and feelings (Hayes & Strosahl, 2004). As this study has no follow-up, the results may reflect this process. These results suggest that further studies should be conducted to understand better the effects of ACT on individuals' behaviour and emotions.

The studies using MBA included in this review reported positive improvements in emotional regulation, emotional distress, self-esteem, and aggression/violent behaviour. MBCT (Lo et al., 2020; Malouf et al., 2017; Milani et al., 2013) and MBSR (Bouw et al., 2019; Nesset et al., 2021) were the most common MBA identified. These findings are partially in accordance with a recent review of mindfulness interventions for individuals referred for IPV treatment (Mitchell & Wupperman, 2022). The improvements in aggression/violent behaviour found after MBA were interesting findings, as mindfulness-based treatments were not specifically developed to reduce aggressive behaviours. However, despite the overall positive findings, the study of Craven and Shelton (2020) did not reveal clinical changes. The authors attributed the absence of results to methodological shortcomings (e.g., small sample size, lack of power) and the intervention program characteristics, suggesting that a deeper focus on developing adapted skills with more detailed hand-outs to support participants' learning processes has the potential to increase clinical improvements. The authors also found a curious result, i.e., increased signs of anxiety following the mindfulness module compared to the pre-test. The increased anxiety could be related to a greater awareness of the internal and external surroundings, which may lead to increased anxiety as individuals develop mindfulness skills (Craven & Shelton, 2020). As previously mentioned, some DBT studies also reported these results, and curiously, Craven and Shelton (2020) assessed a mindfulness module included in a DBT intervention. Although studies suggested promising results of mindfulness-based interventions with justice-involved individuals, further research should be conducted to better investigate the potential outcomes of such interventions.

Although CFT revealed positive outcomes on aggressive behaviour, self-compassion, compassion for others, avoidance and attacking strategies to deal with shame, and psychopathic traits (Pires, 2015; Silva, 2015; Silva, 2019; Sousa et al., 2023), it only consists of four studies, all of them conducted by the same team, in the same country (i.e., Portugal), and with a specific population (juveniles). Besides, no studies compared CFT to alternative therapy. However, results from these studies followed previous findings with clinical populations (Craig et al., 2020), suggesting that CFT might be a promising therapy for juveniles who commit crimes.

Despite the overall positive effects of DBT, ACT, CFT, and MBA, firm conclusions are difficult to draw about the effectiveness of "third wave" approaches in treating justice-involved individuals due to the methodological shortcomings inherent in many of the studies. Indeed, only one study included in this review accomplished all the MMAT criteria, and only eight accomplished four criteria, only 13 employed RCTs, and most studies relied on small samples. Besides, more than half of the studies had no follow-up assessments, and the follow-up period was small for those who had. However, some of the limitations mentioned might represent the exploratory nature of some of the studies and the still little widespread use of these approaches with justice-involved populations. Another problem that persists despite a different approach is the high dropout rates. An explanation for these high dropout rates relies on the target population (i.e., populations resistant to and uninterested in psychological interventions; e.g., Berta & Zarling, 2019; Gómez et al., 2014). In addition, some participants of such interventions found some of the intervention conceptions hard to understand (e.g., Bouw et al., 2019; Eccleston & Sorbello, 2002). Thus, perhaps the difficulty of understanding some concepts might lead to premature abandonment of therapy.

5.1. Strengths and limitations

This systematic review aimed to provide a broad and comprehensive understanding of the empirical evidence of CB 'third wave' therapies within forensic settings with justice-involved individuals. This work extends previous reviews by including a wider range of CB "third wave" approaches, different forensic settings (i.e., prisons, forensic hospitals, probation), and different justice-involved individuals (i.e., men and women, youth, and adults). Our systematic review allows us to conclude that ACT, DBT, CFT, and MBA showed promising results, providing some preliminary support for their use with justice-involved populations.

Despite the contributions of this systematic review, some limitations should be referred to. The main limitation was the high prevalence of studies conducted in the USA and the absence of studies in languages other than English, Portuguese, and Spanish, which would allow a greater understanding of the use of "third wave" therapies with justice-involved populations in other countries. In addition, although including different studies differentiates this systematic review from other systematic reviews, it makes it difficult to gather a deeper comprehension of the more effective "third wave" therapies. More specifically, the variability in the designs used (i.e., quantitative randomized trials, quantitative non-randomized studies, and quantitative descriptive studies), the treatment targets, the participant's gender and age, the "third wave" therapies, and the type of offense prevent us from making reliable conclusions regarding "third wave" therapies efficacy with justice-involved populations. Further studies should consider these issues to better understand the efficacy of the different "third wave"

therapies. Besides, the exclusion of case studies and case reports limited our conclusions since some types of "third wave" therapies, such as FAP, have been mainly assessed using this kind of design due to their nature (e.g., Visdómine-Lozano, 2022). Besides, the limited number of RCT studies included in the systematic review limits our conclusions regarding the effectiveness of the different therapies. Finally, some potential variables (e.g., gender, gender orientation) that may moderate the effectiveness of the examined interventions were not considered.

6. Conclusions and future perspectives

This systematic review revealed that "third wave" therapies, namely ACT, DBT, CFT, and MBA, showed positive results in different outcomes, such as emotion regulation, aggression, impulsivity, self-esteem, emotional distress, and violent behaviours, providing some support for the use of such approaches with justice-involved populations. However, the methodological limitations of different studies included in this review prevent us from drawing definitive conclusions regarding the effectiveness of these treatments. Thus, developing more studies analyzing the effectiveness of "third wave" therapies with forensic populations remains essential. Although control trials are particularly difficult to implement in forensic settings, especially prison settings, due to institutional constraints, follow-ups, or contamination of allocation conditions, the development of RCTs, the so-called "gold standard" for measuring the effectiveness of an intervention (Lennox et al., 2022), is crucial to adequately evaluate the impact of interventions with justice-involved individuals. In addition, RCTs should allow for comparison of "third wave" therapies to alternative therapies to better understand if the effectiveness might be attributable to a psychological intervention rather than CB "third wave" therapy per se. To reduce data bias, both psychological variables and recidivism data should be included to properly assess the effectiveness of the different "third wave" therapies. Variables identified as possible mediators/moderators of the impact of the intervention should also be considered in further studies. At last, as the follow-up length in most studies was short, it is recommended that studies include more extended follow-up periods to better assess the persistence of change. This is even more important as some studies included in this systematic review reported changes only after the end of the intervention (Brown et al., 2013; González-Menéndez et al., 2014; Tomlinson & Hoaken, 2017; Zarling et al., 2015) and others found a continuation of changes of the treatment conclusion (Gómez et al., 2014; Zarling et al., 2017; Zarling & Russell, 2022).

In short, this review has relevant implications for optimizing the implementation and assessment of "third wave" therapies, especially ACT, DBT, CFT, and MBA, with justice-involved populations. The promising results of such interventions, albeit exploratory, can boost the investment in new intervention approaches within forensic settings, which is so important given the mixed results regarding the effectiveness of the traditional treatments (e.g., Beaudry et al., 2021).

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CRediT authorship contribution statement

Olga Cunha: Conceptualization, Data curation, Methodology, Project administration, Supervision, Validation, Writing – original draft, Writing – review & editing. **Bárbara Pereira:** Formal analysis, Investigation, Methodology, Validation, Writing – original draft. **Marta Sousa:** Formal analysis, Investigation, Methodology, Visualization. **Andreia Castro Rodrigues:** Supervision, Validation, Visualization, Writing – review & editing.

Declaration of competing interest

All the others declare that they have no conflicts of interest.

Data availability

No data was used for the research described in the article.

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