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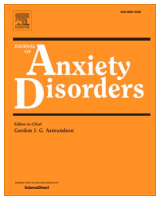

Review



# Intensive treatments for children and adolescents with anxiety or obsessive-compulsive disorders: A systematic review and meta-analysis

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ABSTRACT

Anxiety and obsessive-compulsive disorders have a significant negative impact on youth. Cognitive behavioural therapy (CBT) is recommended and established as effective first-step treatment, but persistent symptoms and non-response are common. Intensive psychological treatments deliver more or longer sessions over a shorter time span, with fewer session gaps. However, an understanding of their effectiveness, characteristics, acceptability, and feasibility is lacking. Systematically searching five databases yielded four controlled and 36 uncontrolled studies ($N$=2707) involving youth with primary anxiety or obsessive-compulsive disorders, many of whom received prior treatments. Intensive treatments were acceptable and feasible, with low drop-out rates. Between-group analyses compared intensive treatment with standard treatment ($k$ = 2) or waitlist ($k$ = 2), revealing no significant post-treatment differences in symptom severity or remission. Uncontrolled within-group analyses of intensive treatments showed large improvements from pre- to post-treatment in symptoms ($k$ = 47), remission ($k$ = 17), impairment ($k$ = 22), functioning ($k$ = 5), and quality of life ($k$ = 2), with larger effects at follow-ups. Intensive treatments show promise for youth with anxiety or obsessive-compulsive disorders by potentially offering high treatment completion rates and comparable outcomes to standard CBT, aiding earlier recovery and reducing overall suffering. This systematic review/meta-analysis provides a comprehensive overview of intensive treatments, their theoretical considerations, and empirical findings. Future RCTs should compare the effectiveness of standard and intensive treatments and identify optimal populations for their use.

## 1. Introduction

Anxiety disorders and obsessive-compulsive disorder (OCD) are prevalent, affecting 6.5–7.2 % and 1–4 % of youth, respectively (Beesdo et al., 2009; Nazeer et al., 2020; Polanczyk et al., 2015; Sadler et al., 2018). These conditions are associated with various functional impairments and reduced daily functioning and quality of life, affecting academic and social domains (Coluccia et al., 2017; Subramaniam et al.,

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2013). Moreover, anxiety disorders and OCD typically develop during childhood and adolescence, often persisting into adulthood if left untreated (Creswell et al., 2014). Providing effective and timely treatment for youth is therefore crucial.

The current first-choice evidence-based psychological treatment for anxiety and obsessive-compulsive disorders is cognitive behavioural therapy (CBT), with exposure as the key component (Walter et al., 2020). Standard CBT typically involves 10–18 weekly one-hour sessions, addressing the specific disorder in a step-by-step approach (James et al., 2020). Previous meta-analyses have demonstrated reduced symptoms with moderate effect size, response rates of around 70 %, and remission rates of around 50 % for both anxiety disorders and OCD following standard CBT (James et al., 2020; Öst et al., 2016). In addition to CBT, guidelines recommend medications such as selective serotonin reuptake inhibitors (SSRIs) for youth with severe anxiety disorders or OCD (e.g., Australian and US guidelines; Melbourne Children's Campus Mental Health Strategy Anxiety Guideline Development Group, 2023; Walter et al., 2020) or following unsuccessful standard CBT (e.g., Dutch and UK guidelines; GGZ Standaarden, 2017; NICE, 2005). SSRIs can be considered as a treatment option for youth with anxiety or OCD (Wang et al., 2017), under sufficient pharmacologist observation. These medications are commonly integrated into matched-care plans based on symptom nature, severity, and course, or in stepped-care plans for youth not benefitting adequately from standard CBT. However, meta-analyses found no superior efficacy of medication over CBT (Kotapati et al., 2019; e.g., Wang et al., 2017), and a network meta-analysis demonstrated no enhanced outcomes from combining both approaches (Arnardóttir & Skarphedinsson, 2023).

Despite CBT and medication, persistent anxiety or obsessive-compulsive symptoms are not uncommon (James et al., 2020; Kotapati et al., 2019; Wang et al., 2017). While around 70 % of youth respond to these treatments with symptom reduction (McGuire et al., 2015; Öst et al., 2016), meta-analyses suggest that around 8–10 % of youth with anxiety or OCD experience relapse after discontinuing CBT (Levy et al., 2022). However, studies vary widely, with some reporting relapse rates of nearly 40–50 % within four years (Ginsburg et al., 2018; Liu et al., 2021), and others reporting only 9.7 % of non-remission at any of the measured time points during and after treatment, with around 27 % of patients not in remission at three-year follow-up (Ivarsson et al., 2024; Melin et al., 2020). Treatment effectiveness can also be undermined by premature discontinuation (Leeuwerik et al., 2019), occurring in approximately 10–13 % of CBT cases and 17–24 % for medication, often due to logistical issues, lack of efficacy, or adverse events (Johnco et al., 2020; Öst et al., 2016). Moreover, medication carries the risk of potentially impairing side effects (Strawn et al., 2023; Wang et al., 2017), with higher relapse risks upon discontinuation compared to CBT (Batelaan et al., 2017; Levy et al., 2022). This suggests that standard CBT and medication may not effectively address individual factors linked with treatment non-response (Chorpita & Daleiden, 2009), such as initial symptom severity, comorbid conditions, functional impairment, avoidance behaviour, and parental accommodation or psychopathology (Garcia et al., 2010; Ginsburg et al., 2008; Hudson et al., 2015; Torp et al., 2015). This underscores the need for additional support for these youth and in-session approaches that better leverage factors associated with non-response (de Jong et al., 2023) to expedite breaking the negative trajectory.

Consequently, there is growing interest in recent decades in intensifying psychological treatments, to enhance effectiveness and optimise exposure outcomes. These treatments commonly incorporate CBT with exposure, often in longer sessions conducted daily or multiple times per week in fewer total weeks (Jónsson et al., 2015; Öst & Ollendick, 2017; Remmerswaal et al., 2021). For youth with severe complaints or not benefitting sufficiently from current treatments, having greater amounts of in-vivo exposure and shorter periods between exposure sessions than in conventional CBT may reduce the potential for fear reinstatement from negative events between sessions, in line with inhibitory learning principles (see Craske et al., 2014, 2018; Gallistel & Gibbon, 2000; Hermans et al., 2005). In cases involving non-response or serious avoidance, the increased support and structure of intensive formats could promote treatment immersion for youth and parents, potentially enhancing motivation, commitment, and outcomes (Glenn et al., 2013; Lewin et al., 2005). Although intensive treatments are mentioned in several clinical guidelines as an alternative treatment format for youth with severe problems or second-step treatment for non-responders, detailed information is often missing from these guidelines (e.g., Geller & March, 2012; Walter et al., 2020).

Various intensive interventions, implemented across diverse settings (e.g., outpatient and inpatient facilities, remote delivery, summer camps), show differences in treatment characteristics such as duration, frequency, and delivery settings (e.g., clinic, community centre, at home) and modes (e.g., individual versus group). Some interventions emphasise parental involvement and family functioning (Canavera et al., 2022; Storch, Geffken, et al., 2007), while others personalise treatments to address comorbid issues, treatment obstacles, and exposure in personally relevant contexts (Riise et al., 2016), or incorporate motivational techniques (Merlo et al., 2010; Petersen et al., 2022). In a meta-analysis by Jónsson et al. (2015), intensive CBT for youth and adults with OCD was compared to standard CBT, revealing larger effects for intensive CBT at post-treatment but not at follow-up. This aligns with findings that intensive treatments provided more immediate relief than standard treatment for adults with severe and acute anxiety, with lower drop-out rates in the intensive treatment, showing promise for enhancing completion rates (Pittig et al., 2021). Other meta-analyses found that intensive and standard CBT for youth and adults with anxiety disorders and OCD were comparable at post-treatment, which maintained at follow-ups (Öst & Ollendick, 2017; Remmerswaal et al., 2021). While these mostly examined outpatient treatment, Veale et al. (2016) conducted a meta-analysis of intensive inpatient and residential treatments, which are considered the highest and second-highest levels of care, and reported significant symptom reductions in adults with OCD. However, all meta-analyses of youth samples primarily focused on symptoms and remission, and excluded non-CBT and group treatments, residential samples, and non-randomised controlled trials (Giridharan et al., 2023; Jónsson et al., 2015; Öst & Ollendick, 2017).

To the best of our knowledge, there is currently no comprehensive up-to-date overview of intensive treatments for youth with anxiety disorders or OCD, including their treatment components and degree of intensity (Jónsson et al., 2015). Likewise, their efficacy remains unclear, both in terms of symptom severity and remission, and broader outcomes such as impairment, overall functioning, and quality of life. These gaps pose challenges for researchers and clinicians in understanding and comparing the effectiveness and variations of these interventions. Additionally, since intensive formats with prolonged exposure sessions may place higher demands on families, it is essential to assess their acceptability and potential adverse events, such as deterioration of well-being or hope (Moritz et al., 2015). Finally, a precise overview is needed regarding implementation feasibility and drop-out rates compared to standard treatment. Some families may struggle to accommodate intensive treatment alongside school or work commitments, while others, especially those with long distances to treatment units, may find one or two weeks of intensive treatment more feasible than standard treatment (Whiteside et al., 2014).

### 1.1. The current study

This systematic review and meta-analysis aimed to provide a thorough understanding of intensive treatments, applied as standard care for youth with anxiety disorders or OCD, matched care for severe problems or comorbidities, and stepped care for non-responders. Four research questions were addressed:

1. Which intensive psychosocial treatments for children and adolescents with an anxiety disorder or obsessive-compulsive disorder (OCD) have been developed and evaluated empirically?
2. What are the characteristics (e.g., duration, frequency, and length of treatment) and active components (e.g., degree of personalisation and parental involvement) of these treatments?
3. What is the efficacy of these treatments, in terms of a) achieving symptom relief and remission, and b) impairment, general functioning and quality of life?
4. Which adverse events have been reported and how do youth, parents, and therapists describe the acceptability (e.g., perceived appropriateness, fairness, reasonableness) and feasibility (e.g., implementation and practicability) of these treatments?

## 2. Method

The study protocol was preregistered in PROSPERO (2023CRD42023407777) and was elaborated during the research process to address additional aspects (detailed amendments in Supplementary Materials 1). Research question 3 was broadened to encompass impairment, overall functioning, and quality of life outcomes; mixed-sample studies required >80 % of participants with a primary anxiety or obsessive-compulsive disorder; remission was adjusted to include CY-BOCS scores ≤12; and meta-analysis required sufficient homogeneity and non-intensive comparators in RCTs. This systematic review follows PRISMA 2020 reporting guidelines (Page et al., 2021).

### 2.1. Search strategy

Five electronic databases (PsycINFO, Medline, CINAHL, Scopus, Web of Science) were searched for primary literature via the EBSCOhost platform, on March 9th and November 23rd, 2023. Backward and forward citation searches were performed to find additional articles by searching reference lists of included publications and relevant meta-analyses (Jónsson et al., 2015; Öst & Ollendick, 2017; Remmerswaal et al., 2021; Veale et al., 2016), and searching databases for articles that have cited the included studies. Unpublished data were sought by contacting experts in the field for information on ongoing, completed, terminated, and unpublished studies. Non-peer-reviewed reports, including grey literature like dissertations and conference abstracts, were not searched to ensure all sources had undergone a thorough review process. For conference abstracts, associated peer-reviewed papers were sought through databases and directly from the authors to include them in the systematic review.

The search strategy (see Supplementary Materials 2) was composed of four keyword categories: anxiety/obsessive-compulsive disorder, children/adolescents, intensive, and treatment. Keywords were derived from existing articles and expert suggestions, including synonyms, alternative spellings, and hierarchical family forms (APA Thesaurus and MeSH terms). Search strings were adapted to each database. The results were not restricted by publication period or country.

### 2.2. Inclusion and exclusion criteria

For inclusion in the systematic review, studies needed to meet the following criteria:

1. Mean sample age below 18 years, with a primary DSM-5 anxiety disorder (Separation Anxiety Disorder, Selective Mutism, Specific Phobia, Social Anxiety Disorder, Panic Disorder, Agoraphobia, Generalised Anxiety Disorder, Other Specified Anxiety Disorder, Unspecified Anxiety Disorder) or OCD diagnosis, or equivalent classifications consistent with previous DSM and ICD categories. In mixed samples, >80 % of participants needed to have an anxiety disorder or OCD to be included.
2. Inclusion of intensive psychosocial treatment (i.e., psychotherapy and social treatment that is non-pharmacological) for anxiety or obsessive-compulsive disorders: to fulfil criteria as an intensive treatment, it was required to entail three or more sessions per week and two or more treatment hours per week, with ten or more hours of total therapist contact.
3. Inclusion of at least one pre- and post-treatment measure of anxiety or obsessive-compulsive symptom severity or remission (controlled and uncontrolled designs, excluding case studies).
4. Peer-reviewed and published in English.

The DSM-III and ICD-8 were chosen as minimum diagnostic versions due to their consistency over time (Fabiano & Haslam, 2020; First et al., 2021). Intensive treatment was defined as involving at least double the number of sessions and treatment hours per week compared to standard CBT for anxiety disorders and OCD (James et al., 2020; O'Kearney et al., 2006). This closely aligns with Remmerswaal et al. (2021), as well as Jónsson et al. (2015) and Öst and Ollendick (2017), with the exception of not imposing a maximum treatment length. Internet-based treatments were assessed based on therapist contact hours. Comorbid disorders and concurrent medication use were included, regardless of medication stability.

### 2.3. Study selection

Articles from the searches were imported into Covidence (Covidence systematic review software, 2023). Duplicates were automatically removed based on study titles, publication years, publication volumes, and authors. Two independent reviewers (COWG and CMG) assessed the unique articles for eligibility by screening titles and abstracts, resolving any disagreements through discussion. The same reviewers also conducted the full-text screening independently, following a piloted process and flowchart (Figure S3.1) to ensure inter-rater reliability. Discrepancies were resolved through discussion. Following Cochrane recommendations (Lefebvre et al., 2019), multiple reports from the same study were merged, extracting data from the most relevant report regarding symptom severity and remission. Subgroup data for anxiety disorders or OCD were requested from authors of studies where less than 80 % of the sample had a primary anxiety or OCD diagnosis. If this data was unavailable, the studies were excluded from the review.

### 2.4. Data extraction

Data were extracted using Covidence, following the Cochrane Collaboration's Intervention Review data collection form (Higgins & Green, 2011). Two reviewers (COWG and CMG) independently extracted outcome and sample data from the included studies. Cohen's Kappa was calculated to assess inter-rater reliability for the coding of the primary outcomes (Li et al., 2022). For symptom severity, the Kappa statistic was $\kappa = 0.98$, 95 %CI = [0.93; 1.00], indicating near-perfect agreement (Landis & Koch, 1977). For remission outcomes, Kappa showed near-perfect agreement, $\kappa = 0.95$, 95 %CI = [0.87; 1.00]. All differences were resolved through consensus after independent data extraction, leaving no further disagreements. Unclear information was supplemented with details from cited studies and protocols.

Methodological, sample, and intervention characteristics were extracted for each study (see Supplementary Materials 4). Primary outcomes of symptom severity and remission data were extracted for youth self-reports and parent reports using a measures hierarchy, selecting the most preferred measure for each study (see Table S4.1). For OCD, the Children's Yale-Brown Obsessive-Compulsive Scale (CY-BOCS; Scahill et al., 1997) was the preferred symptom severity measure. Preferred anxiety measures were those assessing functioning and severity specific to that anxiety disorder (such as the Clinician Severity Rating [CSR] of the Anxiety Disorders Interview Schedule for DSM-IV [ADIS]; Silverman et al., 2001). Remission was defined as no longer

meeting primary disorder diagnosis criteria or achieving CY-BOCS scores ≤ 12 (Mataix-Cols et al., 2016), treated as a dichotomous variable. In studies defining remission more loosely, it was labelled 'not available' (NA). Remission proportions were calculated using an intention-to-treat approach, encompassing all participants who initiated treatment regardless of drop-outs, to specifically represent confirmed remission cases. If available, general functioning, quality of life, and impairment outcomes were extracted as secondary outcomes, prioritising youth self-reports followed by parent reports (Berman et al., 2016). Concurrent treatment was extracted, with medications summarised into categories of antidepressants (SSRIs and SNRIs), benzodiazepines, antipsychotics, stimulants, and other medications. Outcome data were extracted for pre-treatment, post-treatment, and latest follow-up measures (following Cochrane recommendations, see Li et al., 2022).

Aligning with prior acceptability-feasibility studies, acceptability refers to how treatments are perceived in terms of appropriateness, fairness, and reasonableness, while feasibility refers to the implementation and practicability of treatments (Babiano-Espinosa et al., 2019; Wolters et al., 2020). Acceptability outcomes were extracted as any specific measure of acceptability, and different measures were standardised to a percentage of the total score range for each respective measure. For feasibility, drop-out was used as main indicator (aligning with e.g., Remmerswaal et al., 2021). Narrative text related to acceptability and feasibility were also extracted (e.g., comments from study authors, parents, or youth on qualitative interviews and open-ended questionnaire measures regarding treatment). Given the absence of specific measures of adverse events in studies, mentions of suicidal thoughts, treatment fear, stigma, adjustment problems, and loss of hope (Moritz et al., 2015) were sought in the articles, adopting a similar approach as Remmerswaal et al. (2021).

#### 2.4.1. Categorisation of variables

Parental involvement was classified according to four categories (Kreuze et al., 2018) by two independent reviewers (COWG and CMG). Category 1, 'no or low', involved a maximum of two parent sessions or partial participation for psychoeducation. Category 2, 'moderate', included specific parent training components and participation in more than two but not all sessions. Category 3, 'high', consisted of parents being present in all sessions and receiving multiple parent training components. Category 4, 'parent-mediated treatment', involved treatment delivered fully or exclusively through parents.

Personalisation refers to the degree of individualised treatment tailoring, beyond typical session content, categorised and independently rated by two reviewers (COWG and CMG). Category 1, 'no or low', included treatments with up to two personalised sessions. Category 2, 'moderate', involved some personalised sessions or addressing individual needs beyond sessions. Category 3, 'high', encompassed personalisation of all sessions and incorporation of relevant contexts, techniques, or methods best suited to each individual (e.g., employing specific treatment components based on client characteristics).

### 2.5. Risk of bias assessment

One author (COWG) and a research assistant (AM) experienced in risk of bias assessments independently evaluated the quality and risk of bias of the included RCTs. The revised Cochrane Risk of Bias (RoB2) tool (Sterne, Savović, et al., 2019) was used, classifying bias as 'low', 'some concerns', or 'high' across five domains per study: randomisation process, deviations from intended interventions, missing data, outcome measurement, and selection of reported results.

Non-randomised controlled trials were assessed for risk of bias by two independent reviewers (COWG and RH) using the Risk Of Bias In Non-randomised Studies of Interventions (ROBINS-I) tool (Sterne et al., 2016). This tool evaluates bias risk as 'low', 'moderate', 'serious', or 'critical' across seven domains per study: confounding, participant selection, classification of interventions, deviations from intended interventions, missing data, outcome measurement, and selection of reported results.

### 2.6. Data synthesis

For continuous outcomes, RCTs comparing intensive with waitlists or non-intensive treatments were compared in between-group analyses. Between-group analyses of secondary outcomes and subgroups could only be performed in case of low heterogeneity among study samples and treatment settings (Hedges & Pigott, 2004; Schwarzer et al., 2015). Exploratory within-group analyses by diagnostic status were conducted by selecting subgroups with homogenous samples, and including the respective diagnostic proportions from mixed-sample studies. Publication bias was assessed using funnel plots and Egger's regression test (Egger et al., 1997), given there were enough studies to achieve sufficient power (Moreno et al., 2009; Sterne et al., 2011). Parent reports were used in analyses for RCTs and non-RCTs where child data were unavailable and separate analyses were conducted of parent data, of studies with youth for whom prior treatment was insufficient, and of non-intensive control groups.

For primary outcomes, between-group standardised mean differences (SMD) were calculated for RCTs to determine the overall effect of interventions. Difference in effect sizes (ESs) between intensive and control groups were first determined: $SMD_{between} = SMD_{within_{intensive}} - SMD_{within_{control}}$ For this, within-group SMDs were calculated separately for intensive and control groups. These were calculated for pre-treatment to post-treatment and to follow-up with Cohen's *d,* utilising a formula robust against potential intervention effects in within-group designs (Becker, 1988; Harrer et al., 2021): $SMD_{within} = M_{post} - M_{pre}/SD_{pre}$ Here, $M_{post}$ and $M_{pre}$ indicate mean post- and pre-treatment scores, respectively, and $SD_{pre}$ indicates pre-treatment standard deviations.

These Cohen's *d* ESs were subsequently transformed to Hedges' *g* ESs, a small-sample (n≤20) correction adjusting for potential overestimation of effects (Hedges, 1981). Hedges' *g* can be interpreted using Cohen's rules of thumb: *g*-values of 0.2, 0.5, and 0.8 indicate small, medium, and large effects, respectively (Cohen, 1988). Ninety-five percent confidence intervals (CIs) were calculated using standard errors (SE) of the corrected ESs (formulas provided in Supplementary Materials 5). Since the included studies did not report correlations, SEs were calculated with a conservative correlation of 0.7, consistent with previous research (Hofmann et al., 2010; Kreuze et al., 2018) and supported by sensitivity analyses with 0.3 and 0.8 correlations (Supplementary Materials 6).

For dichotomous outcomes (e.g., remission and drop-outs), between-group and within-group differences were calculated using risk ratios (RR). An RR of 1 signifies no difference between groups, RR > 1 indicates higher probability of the event in the treatment group compared to the control group, and RR < 1 signifies a lower probability. These were pooled using the Mantel-Haenszel method without continuity correction (Mantel & Haenszel, 1959). Continuous between-group and within-group ESs were pooled using random effects models to account for anticipated heterogeneity between studies. For both continuous and dichotomous outcomes, 95 % CIs around pooled effects were calculated using Knapp-Hartung adjustments, reducing the likelihood of false positives (Knapp & Hartung, 2003; Langan et al., 2019). The heterogeneity variance $\tau^2$, which quantifies ES variance on the same scale to indicate the range of true ESs underlying the data, was calculated using the restricted maximum likelihood estimator (Viechtbauer, 2005). ES heterogeneity between studies was assessed using the $I^2$-statistic, demonstrating the percentage of ES variation attributable to between-study heterogeneity (Higgins & Thompson, 2002). Results should be interpreted with caution in case of heterogeneity, with rules of thumb of 25 %, 50 %, and 75 % indicating low, moderate, and substantial heterogeneity.

## 3. Results

### 3.1. Search results

The initial search yielded 5794 articles from 5782 studies (Fig. 1). Five additional studies were identified through citation searching and one recently completed study after contacting experts in the field. After removing duplicates and screening titles and abstracts, 235 studies were screened using full-texts. Finally, 39 articles were included, consisting of 40 studies and 47 intensive treatment arms. The updated search yielded 379 new articles, resulting in 171 articles after removing duplicates. After screening titles and abstracts, 15 articles were screened using full-

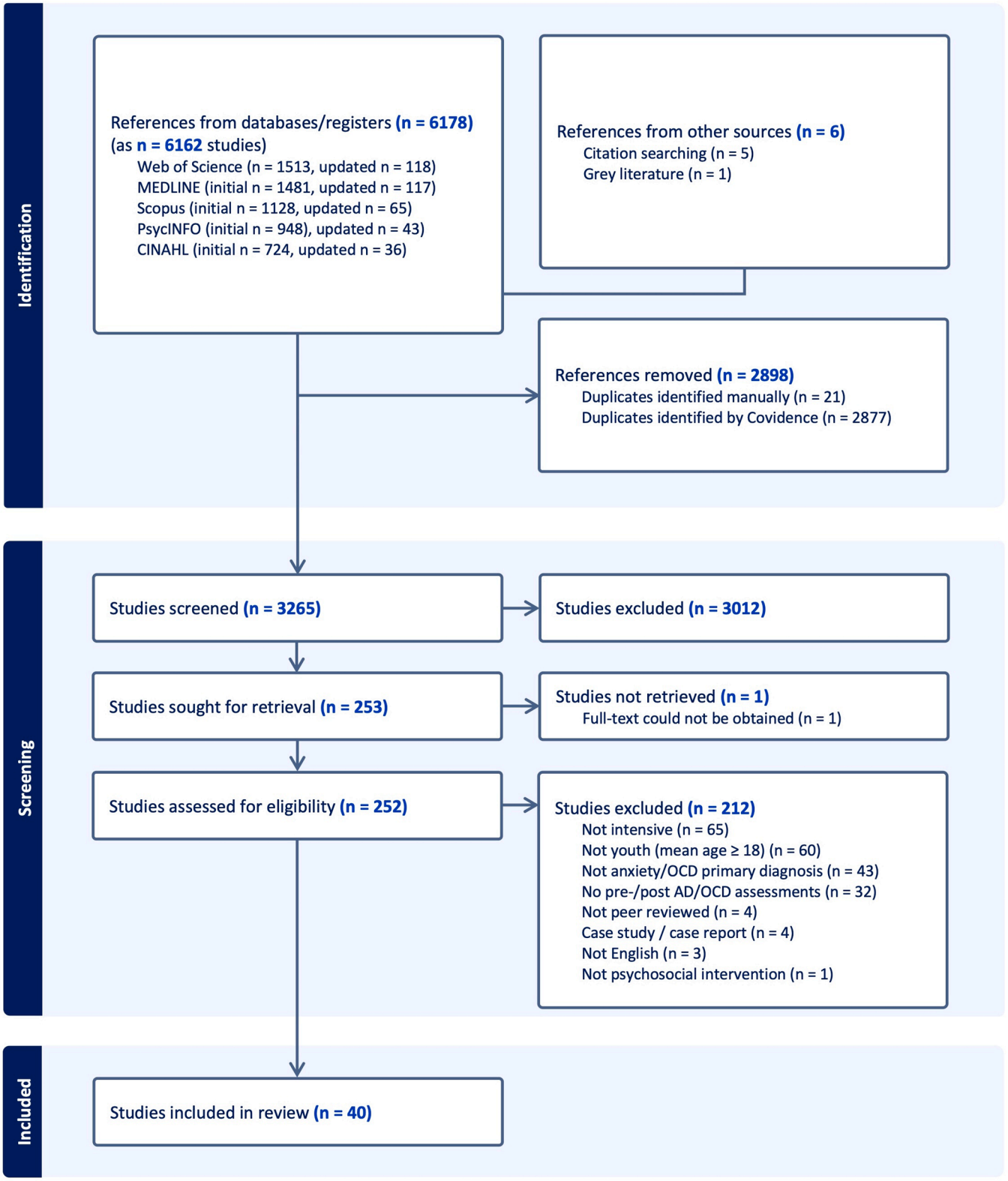


**Fig. 1.** Flowchart of Study Selection Process.

texts and none were included. A list of excluded studies and exclusion reasons is found in Supplementary Materials 7.

### 3.2. Studies evaluating intensive treatments for youth with anxiety or obsessive-compulsive disorders

To address research question 1, Table 1 provides background information for the 40 included studies ($N = 2707$, range 3–472). The majority focused specifically on OCD (50 %, $k = 20$, $N = 1037$), while others examined mixed samples (20 %, $k = 8$, $N = 1128$), selective mutism (10 %, $k = 4$, $N = 229$), panic disorder or agoraphobia (8 %, $k = 3$, $N = 100$), separation anxiety disorder (5 %, $k = 2$, $N = 32$), and specific phobia (3 %, $k = 1$, $N = 3$). One mixed-sample study included up to 9 % of youth with a secondary anxiety or obsessive-compulsive disorder diagnosis, but with different primary diagnoses (Whiteside et al., 2018).

Among the included studies, most (68 %, $k = 27$) did not specify the rationale for initiating intensive treatment or explicitly categorise the treatment as standard or matched care. No studies specifically examined stepped care models with intensive treatment, although three (8 %, $N = 299$) involved exclusively non-responder samples. Some studies reported participants initiating intensive treatment due to severe symptoms (18 %, $k = 7$, $N = 189$) or past treatment failures (20 %, $k = 8$, $N = 447$). Similarly, 18 studies (45 %) reported that some portion of participants had received previous psychotherapy, while 11 (28 %) reported some participants' prior pharmacological treatment, and 17 (43 %) did not provide information on participants' prior treatment. Indications for intensive treatment, such as symptom severity or previous non-response, were most reported among OCD studies (50 %, $k = 10$), followed by anxiety (20 %, $k = 2$) and mixed anxiety/OCD studies (13 %, $k = 1$). Similarly, prior treatment was most reported in OCD studies (90 %, $k = 18$), followed by anxiety (40 %, $k = 4$) and mixed anxiety/OCD studies (13 %, $k = 1$).

When reported (70 %, $k = 28$), participants' concurrent medication use was prevalent among study samples, including antidepressants (30 %, $k = 12$), antipsychotics (15 %, $k = 6$), anxiolytics (13 %, $k = 5$), other (23 %, $k = 9$), and unspecified medications (38 %, $k = 15$; Table 1). Medication was explicitly stable in twelve (44 %) and unstable in five studies (19 %). Concurrent medication was most reported in OCD studies (80 %, $k = 16$), followed by mixed anxiety/OCD (63 %, $k = 5$) and anxiety studies (60 %, $k = 6$).

Most studies were conducted in the USA (83 %, $k = 33$), two studies in Norway (5 %), and one study each (3 %) in Australia, Germany, Italy, the Netherlands, Switzerland, and Turkey. Study designs included chart reviews (25 %, $k = 10$), uncontrolled pre–post studies (23 %, $k = 9$), and RCTs (18 %, $k = 7$). Notably, several studies did not provide detailed study procedures (e.g., Gregory et al., 2020; Kay et al., 2016), resulting in missing information.

### 3.3. Characteristics and components of intensive interventions

We identified four types of intensive interventions, of which 25 were outpatient-based (consisting of 64 % OCD studies; 20 % anxiety studies; 12 % mixed anxiety/OCD studies), 6 were inpatient-based, the highest level of stepped-care (67 % OCD studies; 33 % mixed studies), 6 were residential-based, one step below inpatient treatments (50 % OCD studies; 33 % mixed studies; 17 % anxiety studies), and 8 were camp- or home-based (75 % anxiety studies; 13 % mixed studies; 13 % OCD studies). Notably, inpatient treatments are typically the highest level of care with 24/7 support for acute suicide risk, self-neglect, or danger. Residential treatments are one step less intensive than inpatient units, typically embedded in community settings without night-time support, assuming residents are self-sufficient and not suicidal (Veale et al., 2016).

Treatment characteristics and components (research question 2) are presented in Table 2. Most treatments were based on CBT (45 of 47; 96 %), except one study evaluating acceptance and commitment therapy (Petersen et al., 2022) and another using psychomotor therapy (Esposito et al., 2017).

Active treatment components included exposure (in 90 % of treatments), psychoeducation (55 %), cognitive components (45 %), parent strategies or involvement (38 %), self-directed exposure without direct therapist involvement (28 %), relapse prevention (28 %), medication management (28 %), naturalistic practice or involvement (23 %), family therapy (20 %), and relaxation (15 %). Treatments were primarily conducted in outpatient (60 %) and residential settings (18 %), delivered individually (68 %) and in groups (45 %). A minority included booster sessions (18 %), continuing treatment or through remote therapist contact. Exposure at school or treating school-related factors was uncommon (5 %). Parental involvement varied, ranging from high (45 %) to none or low (23 %). Treatment personalisation was classified as moderate (38 %), high (23 %), and low (10 %). Parental involvement and personalisation were not reported in 15 % and 28 % of studies, respectively.

Overall, the 42 intensive interventions had between 2 and 10 sessions/week ($Mdn = 5.0$, details in Table 2), lasting 45 minutes to 8 hours/session ($Mdn = 3.0$ hours), with 4–74 total sessions ($Mdn = 14.0$) over 1–25.8 weeks ($Mdn = 3.0$). The 23 outpatient treatments consisted of 2–10 sessions/week ($Mdn = 4.7$), with 1–8 hours/session ($Mdn = 2.75$) and 4–60 total sessions ($Mdn = 14.0$) over 1–14 weeks ($Mdn = 3.0$). Five inpatient treatments, the highest level of stepped-care, had a higher intensity (5–7 sessions/week [$Mdn = 6.0$], 1–6 hours per session [$Mdn = 4.1$]) and longer duration (47.5–74.2 sessions [$Mdn = 60.0$], 6.6–12 weeks [$Mdn = 10.5$]). Residential treatments, one step below inpatient units, were slightly less intensive (3–5 sessions/week [$Mdn = 5.0$], 45 minutes to 7 hours [$Mdn = 4.1$ hours]), with similar durations (9.9–25.8 weeks [$Mdn = 10.5$]). Seven camp- and home-based treatments had 2–7 sessions/week ($Mdn = 5.0$) and 1–8 hours/session ($Mdn = 3.0$), with 5–54 sessions ($Mdn = 14.0$) in 1–18 weeks ($Mdn = 1.0$).

### 3.4. Heterogeneity of studies and planned analyses

Seven RCTs were identified, three of which investigated intensive treatment in both the treatment and control groups. These were therefore only included in within-group analyses (Leyfer et al., 2019; Merlo et al., 2010; Riemann et al., 2013; see Table 2). The remaining four compared intensive treatment to a waitlist or non-intensive treatment. These RCTs exhibited substantial heterogeneity, focusing on selective mutism, separation anxiety, and OCD, with mean ages ranging from 6.6 to 13.3 years. Treatment settings varied: two CBT treatments were conducted in camp settings, one outpatient CBT treatment, and one non-CBT psychomotor therapy in a residential setting. Despite this heterogeneity and the limited number of studies, a between-group meta-analysis could provide valuable insights by pooling results. However, more studies were required to analyse secondary outcomes and perform subgroup analyses for meaningful comparisons, without increased standard errors and reduced precision of subgroup effects (Hedges & Pigott, 2004; Schwarzer et al., 2015). Therefore, we omitted these planned and preregistered analyses.

Six articles were merged with other articles after identifying overlapping samples through careful examination of study and participant details (see Supplementary Materials 7; Lefebvre et al., 2019). In six out of forty-seven treatment arms, parent data were analysed because child data were unavailable. Separate analyses were conducted of parent data (Appendix B), of studies including non-responders (Appendix B), and control groups (Supplementary Materials 8).

### 3.5. Risk of bias and publication bias

The overall risk of bias of RCTs included in between-group analyses ($k = 4$) and non-randomised controlled trials in within-group analyses ($k$

**Table 1**
Background Data of Included Studies.

| Study | Country | Design | N | Mean age (SD) | Females (%) | Primary diagnosis | Diag. tool | DSM/ ICD | Comorbidities (n, %) | Previous treatment | Indication for intensive treatment | Drop-outs (%) | Reported concurrent treatment in sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Randomised controlled trials (RCTs) with waitlist or non-intensive treatments as controls ($k = 4$) | | | | | | | | | | | | | |
| Cornacchio et al. (2019) | USA | RCT: IGBT vs. waitlist + PE | 29 | 6.6 (1.3) | 22 (76 %) | SM | ADIS | DSM−5 | ADs (39, 135 %), OCD (2, 7 %), EXT (2, 7 %), Other (2, 7 %) | NA | NA | Intensive: 0 (0 %) Control: 0 (0 %) | Medication NOS, stable (5, 17 %) |
| Esposito et al. (2017) | Italy | RCT: psychomotor tx vs. counselling | 166 | 7.8 (1.1) | 90 (54 %) | SM | SMQ | DSM−5 | NA | NA | NA | Intensive: 11 (7 %) Control: 17 (10 %) | NA |
| Santucci & Ehrenreich-May (2013) | USA | RCT: camp vs. waitlist | 28 | 9.2 (1.6) | 28 (100 %) | SAD | ADIS | DSM-IV | ADs (29, 104 %), OCD (1, 4 %), EXT (2, 7 %) | CBT (4, 14 %), antidepressants (6, 21 %), other (2, 7 %) | NA | Intensive: 0 (0 %) Control: NA | Antidepressants (6, 21 %), stimulants (1, 4 %), other (1, 4 %), stable |
| Storch et al. (2007) | USA | RCT: ICBT vs. weekly CBT | 40 | 13.3 (2.7) | 22 (55 %) | OCD | ADIS | DSM-IV-TR | EXT (19, 48 %), ADs (18, 45 %), DDs (7, 18 %), OCD (1, 3 %), Other (8, 20 %) | Combination (18, 45 %), psychotherapy alone (2, 5 %), medication NOS alone (9, 23 %) | NA | Intensive: 0 (0 %) Control: 2 (5 %) | Antidepressants (28, 70 %), antipsychotics (8, 20 %), other (2, 5 %), stable |
| Randomised controlled trials (RCTs) with intensive treatments as both treatment and control groups ($k = 3$) | | | | | | | | | | | | | |
| Leyfer et al. (2019) | USA | RCT: DCS-augm. vs. placebo-augm. ICBT | 24 | 14.5 (1.8) | 14 (58 %) | PD/Ag | ADIS | DSM-IV | ADs (18, 75 %), DDs (3, 13 %), EXT (1, 4 %) | NA | NA | Intensive: 2 (8 %) Control: 0 (0 %) | Antidepressants (10, 42 %), stable |
| Merlo et al. (2010) | USA | RCT: ICBT+MI vs. ICBT+PE | 16 | 13.3 (3.0) | 6 (38 %) | OCD | ADIS | DSM-IV | NA | NA | NA | NA | NA |
| Riemann et al. (2013) | USA | RCT: ICBT+AMP vs. ICBT+ACC | 42 | 15.6 (1.2) | 22 (52 %) | OCD (30, 71 %), SocAD (3, 7 %), GAD (5, 12 %), PD (1, 2 %), AD NOS (3, 7 %) | CI | NA | OCD (31, 74 %), DDs (26, 62 %), ADs (7, 17 %), EXT (11, 26 %), Other (4, 10 %) | NA | Severe complaints | NA | Medication NOS (37, 88 %) |
| Non-randomised controlled studies (NRCTs, $k = 2$) | | | | | | | | | | | | | |
| Chase et al. (2012) | USA | NRCT | 51 | 15.25 (1.4) | 35 (69 %) | PD/Ag | ADIS | DSM-IV | NA | NA | NA | Intensive: 1 (2 %) Control: 3 (6 %) | Medication NOS, stable |
| Gittins Stone et al. (2023) | USA | NRCT | 130 | 13.8 (2.7) | 79 (61 %) | SocAD (43, 33 %), OCD (38, 29 %), SP (17, 13 %), GAD (15, 12 %), Ag (5, 4 %), PD (4, 3 %), SAD (3, 2 %), AD NOS (5, 4 %) | NA | NA | NA | NA | NA | Intensive: NA Control: NA | Medication NOS |
| Other designs (e.g., open label, uncontrolled, and naturalistic trials; $k = 31$) | | | | | | | | | | | | | |
| Adam et al. (2022) | Germany | Quasi SCED | 7 | 15.7 (2.1) | 3 (60 %) | OCD | DCL-ZWA | DSM−5, ICD−10 | ADs (2, 29 %), Other (1, 14 %) | Antidepressants (3, 43 %) | NA | 2 (29 %) | OCD-specific medication NOS (4, 57 %), stable |

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**Table 1** (*continued*)

| Study | Country | Design | N | Mean age (SD) | Females (%) | Primary diagnosis | Diag. tool | DSM/ ICD | Comorbidities (n, %) | Previous treatment | Indication for intensive treatment | Drop-outs (%) | Reported concurrent treatment in sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Björgvinsson et al. (2008) | USA | Open trial | 23 | 15.3 (NA) | 11 (48 %) | OCD | NA | NA | ADs (3, 13 %), DDs (8, 35 %), EXT (4, 17 %), Other (8, 35 %) | Outpatient psychosocial treatment (23, 100 %) | Previous treatment unsuccessful | NA | Medication NOS |
| Canavera et al. (2022) | USA, Australia | SCED | 8 | 10.8 (2.1) | 5 (63 %) | OCD | ADIS | DSM-IV | ADs (10, 125 %), EXT (2, 25 %), DDs (1, 13 %), Other (1, 13 %) | Anxiety treatment (3, 38 %), ERP (2, 25 %), counselling (2, 25 %), intensive phobia treatment (1, 13 %) | NA | 0 (0 %) | Antidepressants (2, 25 %), other (1, 13 %), stable |
| Conelea et al. (2023) | USA | Pre–post | 36 | 12.3 (2.6) | 18 (50 %) | OCD | CI | DSM−5 | EXT (19, 53 %), ADs (15, 83 %), Other (13, 28 %), DDs (12, 67 %), OCD (2, 11 %) | Antidepressants (24, 67 %), antipsychotics (5, 14 %), benzodiazepines (5, 14 %), anxiolytics (2, 6 %), stimulants (2, 6 %), other (9, 25 %) | Previous treatment unsuccessful | NA | Antidepressants (24, 67 %), antipsychotics (5, 14 %), benzodiazepines (5, 14 %), anxiolytics (2, 6 %), stimulants (2, 6 %), other (9, 25 %), unstable |
| Franklin et al. (1998) | USA | Open trial | 14 | 14.1 (2.2) | 4 (29 %) | OCD | CI | DSM-IV | Other (2, 14 %), OCD (1, 7 %) | Inpatient treatment (2, 14 %) | NA | NA | Antidepressants (8, 57 %), anxiolytics (1, 7 %), stable |
| Gregory et al. (2020) | USA | Cost-effectiveness | 264 | NA | NA | OCD | NA | NA | NA | CBT or medication NOS (264, 100 %) | Previous treatment unsuccessful | NA | Medication NOS |
| Guo et al. (2020) | USA | Chart review | 10 | 12.8 (2.3) | 7 (70 %) | OCD | ADIS | NA | NA | Psychosocial treatment (8, 80 %) | Severe complaints | NA | Medication NOS (8, 80 %), unstable |
| Haggerty et al. (2022) | USA | SCED | 25 | 7.9 (NA) | 20 (80 %) | SM | NA | NA | NA | Behavioural therapy (12, 48 %), play therapy (1, 4 %), Intensive behavioural therapy (4, 16 %), previous years CKC (3, 12 %), SM summer camp (1, 4 %) | NA | 0 (0 %) | NA |
| Hong et al. (2022) | USA | Pre–post | 9 | 6.1 (1.5) | 5 (56 %) | SM | ADIS | DSM−5 | ADs (8, 89 %) | NA | NA | 0 (0 %) | NA |
| Iniesta-Sepúlveda et al. (2018) | USA | Chart review | 9 | 14 (2.0) | 1 (11 %) | OCD | CI | DSM-IV-TR | Other (10, 111 %), ADs (5, 56 %), DDs (5, 56 %), EXT (1, 11 %) | Medication NOS (3, 33 %), CBT (3, 33 %), daily 1-hour CBT (1, 11 %), daily 3-hour CBT (1, 11 %), bibliotherapy (1, 11 %), talk therapy (1, 11 %), religious counselling (1, 11 %) | Severe complaints, previous treatment unsuccessful | 0 (0 %) | Antidepressants (4, 44 %), antipsychotics (2, 22 %), benzodiazepines (1, 11 %), other (1, 11 %), unstable |
| Kay et al. (2016) | USA | Chart review | 71 | 11.6 (1.5) | 37 (51 %) | OCD | CY-BOCS-SR | NA | NA | NA | NA | NA | NA |
| Knowles et al. (2016) | USA | Pre–post | Total: 472 OCD: 243 | 15.6 (1.2) | 245 (52 %) | OCD (243, 52 %), GAD (29, 6 %), SocAD (24, 5 %), PD (4, | CI | NA | DDs (230, 49 %), ADs (75, 16 %), OCD (12, 14 %) | NA | NA | NA | NA |

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**Table 1** (*continued*)

| Study | Country | Design | N | Mean age (SD) | Females (%) | Primary diagnosis | Diag. tool | DSM/ ICD | Comorbidities (n, %) | Previous treatment | Indication for intensive treatment | Drop-outs (%) | Reported concurrent treatment in sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AD: 84 | | | 1 %), AD NOS (18, 4 %) | | | | | | | |
| Højgaard et al. (2020) | USA | Chart review | 314 | 15.6 (1.2) | 157 (50 %) | OCD | CI | DSM-IV | NA | Outpatient treatment (155, 90 %), inpatient treatment (68, 40 %), partial hospital or day treatment (30, 17 %), intensive outpatient treatment (19, 11 %), residential treatment (20, 12 %) | NA | NA | Medication NOS |
| Molinari et al. (2019) | USA | Chart review | 165 | 13.9 (2.5) | 98 (59 %) | AD NOS | CI | NA | NA | NA | NA | NA | Medication NOS |
| Olino et al. (2011) | USA | Chart review | 41 | 12.4 (2.8) | 22 (53 %) | OCD | NA | DSM-IV | DDs (6, 15 %), ADs (5, 12 %), EXT (10, 24 %) | Medication | NA | NA | Medication NOS (36, 88 %), unstable |
| Petersen et al. (2022) | USA | Case series | 3 | 14.3 (2.1) | 1 (33 %) | OCD | NA | NA | NA | NA | Severe complaints | NA | Antidepressants (2, 67 %), stable |
| Riise et al. (2016) | Norway | Pre–post | 22 | 13.3 (1.6) | 7 (32 %) | OCD | KSADS | DSM-IV, DSM−5 | ADs (6, 27 %), DDs (4, 19 %), EXT (1, 5 %), Other (1, 5 %) | ERP (9, 41 %), other psychotherapy (4, 18 %) | NA | 2 (9 %) | Antidepressants (2, 9 %), antipsychotics (1, 5 %) |
| Riise et al. (2018) | Norway | Pre–post | 41 | 15.0 (1.8) | 29 (71 %) | OCD | KSADS | DSM-IV, DSM−5 | DDs (13, 32 %), ADs (13, 32 %), Other (6, 15 %), EXT (4, 10 %) | ERP (27, 66 %), other psychotherapy (18, 44 %) | NA | 0 (0 %) | Antidepressants (4, 10 %), stimulants (2, 5 %), antipsychotics (1, 2 %), stable |
| Santucci et al. (2009) | USA | Case series | 4 | 9.75 (1.3) | 4 (100 %) | SAD | ADIS | DSM-IV | ADs (5, 125 %) | CBT (2, 50 %) | Severe complaints, previous treatment unsuccessful | 0 (0 %) | No |
| Schneider et al. (2018) | USA | Pre–post | 70 | 15.4 (1.1) | 43 (61 %) | GAD (30, 43 %), SocAD (25, 36 %), AD NOS (9, 13 %), PD (4, 6 %), SAD (1, 1 %), SM (1, 1 %) | CI | NA | DDs (56, 80 %), ADs (27, 39 %), EXT (16, 23 %), OCD (10, 14 %) | Antidepressants (55, 79 %), antipsychotics (26, 37 %), anxiolytics (18, 26 %), stimulants (18, 26 %), other (11, 16 %) | NA | NA | Antidepressants, antipsychotics, stimulants, other, unstable |
| Sperling (2022) | USA | Chart review | 104 | 15 (2.8) | 62 (60 %) | OCD, AD NOS | NA | NA | NA | NA | NA | 8 (8 %) | Medication NOS |
| Sperling et al. (2024) | USA | Chart review | 63 | 13.7 (2.9) | 34 (54 %) | OCD, AD NOS | NA | NA | NA | NA | NA | NA | Medication NOS (49, 78 %) |
| Storch et al. (2006) | USA | Open trial | 7 | 11.1 (1.4) | 3 (43 %) | OCD subtype PANDAS | ADIS | DSM-IV | EXT (4, 57 %), ADs (3, 43 %), Other (3, 43 %), DDs (2, 29 %) | Antidepressants (7, 100 %) | NA | 0 (0 %) | Antidepressants (6, 86 %), stable |
| Storch et al. (2010) | USA | Open trial | 30 | 13.4 (3.2) | 15 (50 %) | OCD | ADIS | DSM-IV | EXT (21, 70 %), ADs (12, 40 %), DDs (8, 27 %), Other (5, 17 %) | Antidepressants (30, 100 %), antipsychotics (25, 83 %), non-CBT (17, 57 %), CBT (6, 20 %), anxiolytics (6, 20 %) | Previous treatment unsuccessful | 1 (3 %) | Anxiolytics (6, 20 %), other (18 %), stable |

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**Table 1** (*continued*)

| Study | Country | Design | N | Mean age (SD) | Females (%) | Primary diagnosis | Diag. tool | DSM/ ICD | Comorbidities (n, %) | Previous treatment | Indication for intensive treatment | Drop-outs (%) | Reported concurrent treatment in sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Storch, Bagner, et al. (2007) | USA | Case series | 5 | 9.6 (4.4) | 1 (20 %) | OCD | CI, CY-BOCS | NA | EXT (2, 40 %), DDs (1, 20 %) | Antidepressants (5, 100 %), supportive psychotherapy (2, 40 %), antipsychotics (1, 20 %) | Previous treatment unsuccessful | 0 (0 %) | Medication NOS |
| Tolin et al. (2009) | USA | SCED | 3 | 14.3 (1.2) | 0 (0 %) | SP situational | ADIS | DSM-IV | DDs (1, 33 %) | NA | Severe complaints | 0 (0 %) | No |
| Ünver et al. (2019) | Turkey | Chart review | OCD: 36 AD: 68 | OCD: 13.6 (2.3) AD: 14.2 (1.9) | OCD: 16 (44 %) AD: 48 (46 %) | OCD (36, 14 % of total sample), GAD (30, 12 %), SocAD (19, 7 %), SAD (15, 6 %), PD (4, 2 %) | CI | DSM-IV | OCD: NOS (34, 94 %) AD: NOS (66, 97 %) | NA | NA | OCD: 9 (25 %) AD: 17 (25 %) | Medication NOS (OCD: 34, 94 %; AD: 62, 91 %) |
| Whiteside et al. (2018) | USA | Chart review | 143 | 14.0 (2.9) | 82 (57 %) | OCD (75, 52 %), AD NOS (55, 39 %), SocAD (24, 17 %), GAD (14, 10 %), SAD (8, 6 %), SP (4, 3 %), PD/ Ag (3, 2 %), SM (2, 1 %), Other (13, 9 %) | MINI-KID | DSM-IV-TR | NA | Combination (96, 67 %), psychotherapy (18, 12 %), medication NOS (11, 8 %) | NA | 8 (6 %) | NA |
| Wiener et al. (2012) | USA | Pre–post | 25 | 15.2 (1.8) | 11 (44 %) | PD | ADIS | DSM-IV | NA | NA | NA | 1 (4 %) | NA |
| Wolters et al. (2021), study 1 | Netherlands | Chart review | 69 | 15.3 (2.4) | 38 (64 %) | OCD | NA | DSM−5, ICD−10 | Other (29, 42 %), ADs (10, 17 %), EXT (7, 10 %), DDs (3, 5 %) | Outpatient treatment (37, 63 %), residential day treatment (12, 20 %) | Severe complaints, previous treatment unsuccessful, preference, accelerate progress, relapse | 3 (4 %) | NA |
| Wolters et al. (2021), study 2 | Switzerland | Pre–post | 19 | 15.1 (2.0) | 10 (59 %) | OCD | NA | DSM−5, ICD−10 | EXT (6, 35 %), DDs (3, 18 %), ADs (4, 24 %), Other (2, 11 %) | Outpatient treatment (14, 82 %), residential day treatment (2, 12 %), inpatient treatment (1, 6 %) | Accelerate progress | 1 (5 %) | NA |
| Mean | | | 63.0 | 12.5[a] | 53.3 | | | | | | | **Intensive** | |
| Median | | | 30.0 | 13.9 | 54.1 | | | | | | | 4.2 %[a] | |
| SD | | | 88.7 | 2.6 | 19.5 | | | | | | | 0.1 % | |
| Range | | | 3–472 | 6.1–15.7 | 0–100 | | | | | | | 6.0 | |
| | | | N total 2707 | | | | | | | | | 0.0 %–28.6 % **Control** 7.3 %[a] 5.0 % | |

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**Table 1** (*continued*)

| Study | Country | Design | N | Mean age (SD) | Females (%) | Primary diagnosis | Diag. tool | DSM/ ICD | Comorbidities (n, %) | Previous treatment | Indication for intensive treatment | Drop-outs (%) | Reported concurrent treatment in sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | 4.8 | |
| | | | | | | | | | | | | 0.0 %–10.2 % | |

*Note.* ACC = attention control condition; AD = anxiety disorder; ADIS = Anxiety Disorder Interview Schedule; Ag = agoraphobia; AMP = attention modification program; augm. = augmented; CI = clinical interview; CKC = Confident Kids Camp; CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale; CY-BOCS-SR = CY-BOCS self-reported; DCL-ZWA = Diagnose-Checkliste für Zwangsstörungen, Diagnostic Checklist for OCD; DCS = d-cycloserine augmented ICBT; DD = depressive disorder; diag. = diagnostic; DSM = Diagnostic and Statistical Manual of Mental Disorders; ERP = exposure with response prevention; EXT = externalising disorders; GAD = generalised anxiety disorder; ICBT = intensive cognitive behavioural therapy; ICD = International Classification of Diseases; IGBT = intensive group cognitive behavioural therapy; KSADS = Schedule for Affective Disorders and Schizophrenia for School-Aged Children; MI = motivational interviewing; MINI-KID = Mini International Neuropsychiatric Interview for Children and Adolescents; NA = not available; NOS = not otherwise specified; NRCT = non-randomised controlled trial; OCD = obsessive-compulsive disorder; PANDAS = paediatric autoimmune neuropsychiatric disorders associated with streptococcus; PD = panic disorder; PE = psychoeducation; RCT = randomised controlled trial; SAD = separation anxiety disorder; SCED = single-case experimental design; SM = selective mutism; SMQ = Selective Mutism Questionnaire; SocAD = social anxiety disorder; tx = treatment.

[a]Weighted mean

= 3) was high (Appendix A). Caution is warranted when interpreting the results of the four RCTs, primarily due to potential bias stemming from missing outcome data characterised by high or unreported drop-out rates, and unblinded participants and therapists. The risk of bias in the non-randomised controlled trials mainly associated with potential bias arising from confounding factors and the risk of selectively reported results. Furthermore, one non-controlled study introduces bias risk by exclusively analysing outcomes for treatment responders, where post-treatment assessments for non-responders were unavailable (Molinari et al., 2019). The remaining 33 studies were uncontrolled, posing an inherent risk of bias as they cannot account for confounders (Sterne, Hernán, et al., 2019).

Publication bias was assessed using funnel plots (Figure A.5) and Egger's test for the primary outcome in the within-group meta-analysis. Statistically significant asymmetry was found (Egger's intercept = 3.133, 95 %CI = [1.09; 5,17]), $t = 3.007$, $p < .01$), indicating potential publication bias. Given the high heterogeneity between studies ($I^2$ = 94.8 %), asymmetry does not definitively indicate publication bias, but the findings should be interpreted with caution due to a risk of over-estimated effect sizes. There was insufficient power to conduct these analyses for between-group meta-analyses (Moreno et al., 2009; Sterne et al., 2011).

### 3.6. Symptom relief following intensive treatment

#### 3.6.1. Comparing between-group intensive and control conditions

To address research question 3a, regarding the efficacy of intensive treatments for symptom relief, four RCTs comparing intensive treatments with standard treatment ($k = 2$) or waitlist ($k = 2$) were meta-analysed. The uncontrolled effects of each condition were initially evaluated separately for each RCT through within-group analyses (see Supplementary Materials 8), to determine the overall effect of intensive versus control treatments via between-group analyses. These analyses revealed differences in symptom change between conditions at post-treatment (Fig. 2), ranging from small (-0.16) to large ESs (0.97), with an overall medium non-significant ES (0.50) with moderate heterogeneity, indicating no significant difference between the groups. A single study included follow-up data (Storch, Geffken, et al., 2007) and could not be meta-analysed.

Between-group analyses based on parent reports (Appendix B, $k = 2$) revealed a small, statistically significant overall ES (0.43) with negligible heterogeneity, indicating symptom improvements favouring the intensive treatment. Notably, the ES in one study was negative based on child reports but positive based on parent reports (Santucci & Ehrenreich-May, 2013).

#### 3.6.2. Comparing uncontrolled within-group changes over time

Within-group analyses were based on all non-RCT studies. Fig. 3 (top, 47 treatment arms) displays uncontrolled ESs of symptom severity over time after intensive treatment. ESs were positive and ranged from negligible (0.0) to large (5.14). Overall, a large statistically significant pooled ES was found (1.61), indicating positive changes in symptom severity from pre-treatment to post-treatment. Substantial heterogeneity between studies warrants caution in interpreting this effect. From pre-treatment to follow-ups (Fig. 3, bottom, 18 treatment arms), uncontrolled ESs were positive and ranged from small (0.33) to large (5.23), yielding a large statistically significant overall ES (2.13) with substantial heterogeneity, indicating positive symptom changes over time.

Uncontrolled within-group analyses of parent reports at post-treatment (Figure B.1, top, 15 treatment arms) revealed an overall medium-sized statistically significant post-treatment ES (0.76) with moderate heterogeneity. At follow-ups (Figure B.1, bottom, 9 treatment arms), the pooled follow-up ES was large (1.03) and statistically significant with moderate heterogeneity.

Separate uncontrolled within-group analyses of studies with treatment-resistant youth, for whom prior treatment was insufficient,

**Table 2**
Treatment Characteristics of Included Studies.

| Study | Intervention (comparator) | Setting / context | Active components | Personalisation | Parental involvement | Delivery format | Booster sessions | Sessions/ week | Minutes /session | Total sessions | Total hours | Total weeks | SS measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intensive outpatient treatments (26 treatment arms) | | | | | | | | | | | | | |
| ‡ Canavera et al. (2022) | Five-day intensive treatment program | Outpatient | ERP, parental involvement using scaffolding | NA | High | Individual, parent-focused | No | 10 | 60–75 | 10 | 10–13 | 1 | CY-BOCS |
| | (Waitlist baseline period) | | | | | | | | | | | | CY-BOCS |
| ‡ Chase et al. (2012) | Eight-day Intensive Panic Control Treatment for Adolescents (PCT-A) | Outpatient | CBT, psychoeducation, cognitive restructuring, fear/ avoidance hierarchy, interoceptive/ situational exposure, relaxation, homework | NA | No or low | Individual | 4 weeks of brief weekly phone sessions | 6 | Days 1–3: 90–200 Days 4–5: 360–420 Day 8: NA M: 1095 | 6 | M: 110 | 1 | MASC |
| | (Weekly panic control treatment) | Outpatient | CBT, psychoeducation, cognitive restructuring, fear/ avoidance hierarchy, relaxation, homework | NA | No or low | Individual | No | < 1 | 60 | 11 | 11 | 12 | MASC |
| ‡ Franklin et al. (1998) | Intensive treatment with therapist-assisted exposure | Outpatient | Psychoeducation, ERP, self-monitoring, homework | Low | No or low | Individual | No | 4.2 | 90 | M: 18 | 27 | 4 (1 mo.) | Y-BOCS |
| | (Weekly treatment with therapist-assisted exposure) | Outpatient | Psychoeducation, ERP, self-monitoring, homework | Low | No or low | Individual | No | < 1 | 60 | M: 16 | 16 | 17 (4 mo.) | Y-BOCS |
| Gregory et al. (2020), IOP | IOP | Outpatient | CBT, ERP, medication management | NA | NA | Individual | NA | 4–5 | 144–225 | 48–60 | 115–225 | 12 | CY-BOCS |
| Guo et al. (2020) | UCLA IOP | Outpatient | ERP, mindfulness, ACT, distress tolerance, family therapy, group therapy, medication management | High | High | Individual, group, parent-focused | No | 4 | 180 | M: 49 | M: 148 | M: 12 Rg: 4–14 | CY-BOCS |
| Iniesta- Sepúlveda et al. (2018), IOP | IOP | Outpatient | CBT, ERP, psychoeducation, fear hierarchy, homework, relapse prevention | High | Moderate | Individual, parent-focused | No | 5 | 180 | M: 33 | 100 | M: 7 Rg: 3–11 | CY-BOCS |
| † Leyfer et al. (2019) | DCS-augmented intensive CBT | Outpatient | CBT augmented with 50 mg of DCS (pill), psychoeducation, cognitive | Low | High | Individual, parent-focused | No | 6 | Sessions 1–3: 120, sessions 4–5: 480, session 6: | 6 | 24 | 1 | PDSS |

(*continued on next page*)

**Table 2** (*continued*)

| Study | Intervention (comparator) | Setting / context | Active components | Personalisation | Parental involvement | Delivery format | Booster sessions | Sessions/ week | Minutes /session | Total sessions | Total hours | Total weeks | SS measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | restructuring, interoceptive and in-vivo exposure, relapse prevention | | | | | | 120<br>M: 240 | | | | |
| | (Placebo-augmented intensive CBT) | Outpatient | CBT augmented with 50 mg of placebo (pill), psychoeducation, cognitive restructuring, interoceptive and in-vivo exposure, relapse prevention | Low | High | Individual, parent-focused | No | 6 | Sessions 1–3: 120, sessions 4–5: 480, session 6: 120<br>M: 240 | 6 | 24 | 1 | PDSS |
| † Merlo et al. (2010) | Intensive family-based CBT plus 3 MI sessions | Outpatient | ERP, psychoeducation, cognitive components, motivational interviewing, staging rulers, decisional balance worksheets, goal statements, parent training | Moderate | High | Individual, parent-focused | No | 4.7 | 90 | 14 | 21 | 3 | CY-BOCS |
| | (Intensive family-based CBT plus 3 PE sessions) | Outpatient | ERP, psychoeducation, cognitive components, parent training | Low | High | Individual, parent-focused | No | 4.7 | 90 | 14 | 21 | 3 | CY-BOCS |
| Molinari et al. (2019) | CBT-based multimodal IOP, PHP, or residential treatment | Outpatient, inpatient, residential | CBT, homework, medication management | Moderate | NA | Individual | No | Max 5 | Max 360 | M: 36 | Max 216 | M: 5 | SCARED |
| Olino et al. (2011) | IOP | Outpatient | ERP, group therapy, treatment readiness, fear hierarchy, family involvement, medication management | Moderate | Moderate | Individual, group, parent-focused | No | 4 | 135 | M: 49 | M: 109 | M: 12 | CY-BOCS |
| Petersen et al. (2022) | Intensive ACT combined with ERP | Outpatient | ERP (values-based), ACT, self-monitoring form, discussing values, Choice Point graphic, experiential yoga, unhooking skills (e.g., acceptance, diffusion, management of compulsions), homework, family involvement | NA | No or low | Individual | No | 5 | 180 | 15 | 45 | 3 | CY-BOCS |

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**Table 2** (*continued*)

| Study | Intervention (comparator) | Setting / context | Active components | Personalisation | Parental involvement | Delivery format | Booster sessions | Sessions/ week | Minutes /session | Total sessions | Total hours | Total weeks | SS measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Riise et al. (2016) | Concentrated ERP | Outpatient, school | Naturalistic ERP (e.g., home/school), psychoeducation, homework, relapse prevention, parental involvement, focus on reducing family accommodation | High | High | Group (TCR 1:1), parent-focused | 3 weeks of daily ERP tasks, text messages to therapists | 4 | Day 1: 180, days 2–3: 300, day 4: 180, M: 240 | 4 | 16 | 1 | CY-BOCS |
| Riise et al. (2018) | Concentrated ERP | Outpatient, school | Naturalistic ERP (e.g., home/school), psychoeducation, homework, relapse prevention, parental involvement, focus on reducing family accommodation | High | High | Group (TCR 1:1), parent-focused | 3 weeks of daily ERP tasks, text messages to therapists | 4 | Day 1: 180, days 2–3: 300, day 4: 180, M: 240 | 4 | 16 | 1 | CY-BOCS |
| Sperling (2022) | Intensive outpatient group-based treatment program | Outpatient | Naturalistic exposure (personalised), psychoeducation, mindfulness, cognitive components, relaxation, relapse prevention, parental involvement, fear/ avoidance hierarchy, homework, caregiver guidance group, skills for caregivers (behavioural training, validation, self-care, accommodation reduction, independence-fostering), weekly family meeting, medication management | High | High, parent-mediated | Group, parent-focused | Treatment extension | 4 | 150 | Min. 16 M: 26 | M: 65 | Min: 4 M: 7 | SCAS |
| Sperling et al. (2024) | Intensive CBT | Outpatient | ERP, psychoeducation, cognitive components, parental involvement, caregiver guidance group, weekly | High | High, parent-mediated | Group, parent-focused, online, blended | Treatment extension | 4 | 165 | 34 | 88 | 8 | SCAS-C/P |

(*continued on next page*)

**Table 2** (*continued*)

| Study | Intervention (comparator) | Setting / context | Active components | Personalisation | Parental involvement | Delivery format | Booster sessions | Sessions/ week | Minutes /session | Total sessions | Total hours | Total weeks | SS measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | family meeting, medication management | | | | | | | | | | |
| ‡ Storch et al. (2006) | Intensive CBT | Outpatient | ERP, psychoeducation, cognitive components, parental involvement, reducing family accommodation, homework | Moderate | High | Individual, Parent-focused | No | 4.7 | 90 | 14 | 21 | 3 | CY-BOCS |
| | (Waitlist baseline period) | | | | | | | | | | | | CY-BOCS |
| Storch et al. (2010) | Intensive family-based CBT | Outpatient | CBT, ERP, psychoeducation, fear hierarchy, cognitive components, relapse prevention, family involvement | Moderate | High | Individual, parent-focused | No | 4.7 | 90 | 14 | 21 | 3 | CY-BOCS |
| Storch et al. (2007) | Intensive CBT | Outpatient | CBT, ERP, psychoeducation, fear hierarchy, cognitive components, reducing family accommodation, homework | Low | Moderate | Individual | No | 5 | 90 | 15 | 23 | 3 | CY-BOCS |
| * Storch et al. (2007) | Intensive family-based CBT | Outpatient | CBT, ERP, fear hierarchy, psychoeducation, cognitive components, parental involvement | High | High | Individual, parent-focused | Max 4 booster sessions, 9 patients received M: 1.2 booster sessions | 5 | 90 | 14 | 21 | 3 | CY-BOCS |
| | (Weekly family-based CBT) | Outpatient | CBT, ERP, fear hierarchy, psychoeducation, cognitive components, parental involvement | High | High | Individual, parent-focused | Max 4 booster sessions, 6 patients received M: 1.2 booster sessions | 1 | 90 | 14 | 21 | 14 | CY-BOCS |
| ‡ Tolin et al. (2009) | Intensive daily behaviour therapy | Outpatient, home, school | Exposure (direct, graded, in-vivo, interoceptive), parent training (contingency management), cognitive restructuring, skill training, role- | High | High, parent-mediated | Individual, parent-focused | No | 5 | 90–120 | 15 | 23–30 | 3 | CGI-S |

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**Table 2** (*continued*)

| Study | Intervention (comparator) | Setting / context | Active components | Personalisation | Parental involvement | Delivery format | Booster sessions | Sessions/ week | Minutes /session | Total sessions | Total hours | Total weeks | SS measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | playing, relaxation, motivational interviewing, environmental modifications, relapse prevention | | | | | | | | | | |
| | (Waitlist baseline period) | | | | | | | | | | | | CGI-S |
| Whiteside et al. (2018) | Five-day clinic-based intensive exposure-based group CBT | Outpatient | CBT, parent-coached exposure, psychoeducation, fear hierarchy, generalisation to home, parental involvement, relapse prevention | Moderate | Parent-mediated | Group | Contact as needed | 2 | 90–120 M: 192 | 10 | M: 32 | 1 | SCAS |
| Wiener et al. (2012) | Eight-day intensive treatment program | Outpatient | CBT, exposures (interoceptive, situational, massed without hierarchy), psychoeducation, cognitive restructuring, relapse prevention | Low | No or low | Individual | No | 8 | Days 1–3: 120, day 4–5: 300, day 6–7: 0, day 8: 120, M: 135 | 8 | 18 | 1 | PDSS-C |
| Wolters et al. (2021), study 1 | Brief IGBT during ongoing CBT | Outpatient | CBT, naturalistic ERP with emphasis on different contexts, psychoeducation, cognitive components, relapse prevention | NA | No or low | Group (TCR 1:2) | No | 5 | 210–240 | 5 | 18–20 | 1 | CY-BOCS |
| Wolters et al. (2021), study 2 | Brief IGBT during ongoing CBT | Outpatient | CBT, naturalistic ERP with emphasis on different contexts, psychoeducation, cognitive components, relapse prevention | NA | No or low | Group (TCR 1:2) | No | 5 | 210–240 | 5 | 18–20 | 1 | CY-BOCS |
| Mean | | | | | | | | 4.9 | 156.2 | 16.2 | 49.9 | 4.0 | |
| Median | | | | | | | | 4.7 | 165.0 | 14.0 | 24.0 | 3.0 | |
| SD | | | | | | | | 1.5 | 57.5 | 13.8 | 46.8 | 3.8 | |
| Range | | | | | | | | 2–10 | 60–480 | 4–60 | 10–225 | 1–14 | |
| Intensive inpatient treatments (6 treatment arms) | | | | | | | | | | | | | |
| Björgvinsson et al. (2008) | Intensive inpatient treatment program | Inpatient | ERP, self-directed exposure (60 min., 3x per week), self-directed practice groups, psychoeducation, homework, cognitive- | Moderate | No or low | Individual | No | 5–7 | 90 | 48–57 | 71–86 | M: 10 | CY-BOCS-SR |

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**Table 2** (*continued*)

| Study | Intervention (comparator) | Setting / context | Active components | Personalisation | Parental involvement | Delivery format | Booster sessions | Sessions/ week | Minutes /session | Total sessions | Total hours | Total weeks | SS measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | behavioural groups, family therapy | | | | | | | | | | |
| Gregory et al. (2020), PHP | PHP | Inpatient | CBT, ERP, medication management | NA | NA | Individual | NA | 5 | 360 | 60 | 360 | 12 | CY-BOCS |
| Iniesta-Sepúlveda et al. (2018), PHP | PHP | Inpatient | CBT, ERP, psychoeducation, fear hierarchy, homework, relapse prevention | High | Moderate | Individual, parent-focused | No | 5 | 240–300 | M: 33 | M: 133–166 | M: 7 Rg: 4–11 | CY-BOCS |
| † Riemann et al. (2013) | CBT plus attention modification | Inpatient | CBT, medication management, attention modification | Moderate | No or low | Individual | No | 7 | M: 244, Rg: 180–270 | M: 74 | M: 302 | M: 11 | SCARED |
| | (CBT plus attention control) | Inpatient | CBT, medication management, attention control | Moderate | No or low | Individual | No | 7 | M: 244, Rg: 180–270 | M: 74 | M: 302 | M: 11 | SCARED |
| Schneider et al. (2018) | Multimodal residential treatment | Inpatient | CBT, ERP, interoceptive exposure, group therapy, experiential therapy groups, non-therapeutic recreation activities, medication management | High | No or low | Individual, group | No | 7 | 57–114 | M: 74 | M: 70–139 | M: 11 | SCARED |
| Mean | | | | | | | | 6.0 | 209.9 | 62.0 | 198.9 | 9.8 | |
| Median | | | | | | | | 6.0 | 244.2 | 60.0 | 149.4 | 10.5 | |
| SD | | | | | | | | 1.0 | 119.6 | 10.8 | 125.0 | 2.0 | |
| Range | | | | | | | | 5–7 | 56.8–360 | 47.5–74.2 | 69.7–360 | 6.64–12 | |
| Intensive residential treatments (6 treatment arms) | | | | | | | | | | | | | |
| Conelea et al. (2023) | Intensive treatment program focused on ERP | Residential | ERP, medication management, treatment in milieu setting, group therapy, family therapy | NA | Moderate | Individual, group, parent-focused | No | 5 | 240 | M: 29 | M: 114 | M: 6 Rg: 13–126 | CY-BOCS |
| * Esposito et al. (2017) | Psychomotor therapy program for SM | Residential | Developing awareness of and respecting other's personal space, sharing a common space during play, developing emotional stability and social interactions, psychomotoric treatment | NA | NA | Individual | No | 3 | 45 | 77 | 58 | 26 (6 mo.) | SMQ |
| | (Behavioural and educational | Residential | Suggestions about parental and | NA | Parent-mediated | Parent-focused | No | NA | NA | 1 | NA | 1 | SMQ |

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**Table 2** (*continued*)

| Study | Intervention (comparator) | Setting / context | Active components | Personalisation | Parental involvement | Delivery format | Booster sessions | Sessions/ week | Minutes /session | Total sessions | Total hours | Total weeks | SS measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | counselling for parents of children with SM) | | teacher behaviour towards children in order to encourage children to speak | | | | | | | | | | |
| Højgaard et al. (2020) | Specialty hospital, residential treatment with intensive ERP | Residential | CBT, ERP, cognitive restructuring, thought challenging, addressing comorbidities, process groups, experiential therapy groups | Moderate | No or low | Individual, group | No | 5 | 80–159, M: 119 | M: 54 | M: 72– 143 | M: 11 Rg: 1–30 | CY-BOCS-SR |
| Kay et al. (2016) | CBT-based multidisciplinary residential treatment | Residential | CBT, ERP, homework | NA | NA | Individual | No | 5 | 120–180 | M: 50 | M: 100–149 | M: 10 | NA |
| Knowles et al. (2016) | Residential treatment program with intensive ERP | Residential | CBT, ERP, self-directed exposure, thought challenging, experiential and art therapy | NA | NA | NA | No | 5 | M: 342 | OCD: 52 AD: 50 | OCD: 298 AD: 285 | OCD M: 10 AD M: 10 | OCD: CY-BOCS AD: ASI |
| Ünver et al. (2019) | Day treatment with multimodal treatment | Residential | Individualized academic program, multimodal treatment plan with CBT, psychoeducation, homework, skills planning, parent sessions, occupational therapy, milieu therapy, pharmacotherapy, dietary and nutritional counselling. Activities such as sports, handmades, cooking activities, games, group activities. Medication when required. | Moderate | Moderate | Individual, group | No | 5 | 420 | NA | NA | NA | STAI-C Trait subscale |
| Mean | | | | | | | | 4.7 | 249.4 | NA | 145.3 | 14.2 | |
| Median | | | | | | | | 5.0 | 246.0 | NA | 115.9 | 10.5 | |
| SD | | | | | | | | 0.8 | 164.5 | NA | 101.3 | 7.8 | |
| Range | | | | | | | | 3–5 | 45–420 | NA | 58.1–297.5 | 9.9–25.8 | |
| Intensive home- and camp-based treatments (8 treatment arms) | | | | | | | | | | | | | |

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**Table 2** (*continued*)

| Study | Intervention (comparator) | Setting / context | Active components | Personalisation | Parental involvement | Delivery format | Booster sessions | Sessions/ week | Minutes /session | Total sessions | Total hours | Total weeks | SS measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adam et al. (2022) | Webcam-based online coaching add-on to weekly face-to-face CBT | Home (intensive add-on to outpatient) | CBT, ERP, cognitive components, treating family and school factors, fear hierarchy, online coaching, homework | NA | NA | Individual, blended | No | 2–3 | 15–100 | 12–54 | 3–90 | 6–18 | CY-BOCS |
| * Cornacchio et al. (2019) | IGBT for SM, based on Parent-Child Interaction Therapy | Classroom / camp setting | Parent-Child Interaction Therapy, graduated exposure, psychoeducation, group parent training sessions with roleplay sessions, activities typical of an early child school setting | NA | High | Group (TCR 1:1), parent-focused | No | 5 | 360–480 | 5 | 30–40 | 1 | ADIS CSR (parent) |
| | (4-week waitlist with psychoeducation) | | | | | | | | | | | | ADIS CSR (parent) |
| ‡ Gittins Stone et al. (2023) | Videoconferencing-based group CBT | Home (videoconferencing) | Naturalistic ERP in relevant contexts, psychoeducation, online group treatment, mindfulness, medication management, cognitive coping, relaxation, problem-solving, relapse prevention, caregiver guidance (behavioural training techniques, validation, self-care, accommodation reduction strategies, independence fostering) | Moderate | High, Parent-mediated | Group (TCR 1:2), parent-focused, online | Treatment extension for any number of full weeks | 4 | M: 151 | Min: 16 | Min M: 40 | Min: 4 Med: 6 | SCAS-C |
| | (Intensive in-person group-based CBT) | Outpatient | Naturalistic ERP, psychoeducation, group treatment, medication management, mindfulness, cognitive coping, relaxation, | Moderate | High, Parent-mediated | Group (TCR 1:2) | Treatment extension for any number of full weeks | 4 | M: 151 | Min: 16 | Min M: 40 | Min: 4 Med: 6 | SCAS-C |

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**Table 2** (*continued*)

| Study | Intervention (comparator) | Setting / context | Active components | Personalisation | Parental involvement | Delivery format | Booster sessions | Sessions/ week | Minutes /session | Total sessions | Total hours | Total weeks | SS measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | problem-solving, relapse prevention, caregiver guidance (behavioural training techniques, validation, self-care, accommodation reduction strategies, independence fostering) | | | | | | | | | | |
| Haggerty et al. (2022) | Intensive 5-day summer camp with behavioural therapy | Camp | Exposure, psychoeducation, fear hierarchy, behavioural interventions (stimulus fading, shaping), contingency management, PRIDE-techniques, parent training | Moderate | High, parent-mediated | Group, parent-focused | No | 5 | 460 | 5 | 38 | 1 | SCARED |
| Hong et al. (2022) | Remote IGBT for families of children with SM | Remote telehealth | CBT (shaping, fading, positive reinforcement, contingency management), exposure, Child-Directed Interaction (CDI), Verbal-Directed Interaction (VDI), group activities, caregiver training | Moderate | High | Group (TCR ≥1:1), parent-focused, online | No | 5 | 150–180 | 5 | 13–15 | 1 | SMQ |
| Santucci et al. (2009) | One-week summer treatment program | Camp | Exposure, psychoeducation, somatic anxiety management (identification, interoceptive exposure, progressive muscle relaxation), cognitive restructuring, problem solving, fear hierarchy, homework, relapse prevention, parental involvement | Moderate | High | Group, parent-focused | No | 7 | Days 1–4: 300, day 5: 180, day 6: overnight, day 7: 60, M: 240 | 7 | 24 + 1 night | 1 | SCAS-SAD subscale |

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**Table 2** (*continued*)

| Study | Intervention (comparator) | Setting / context | Active components | Personalisation | Parental involvement | Delivery format | Booster sessions | Sessions/ week | Minutes /session | Total sessions | Total hours | Total weeks | SS measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * Santucci & Ehrenreich-May (2013) | Child Anxiety Multi-Day Camp (CAMP) with CBT principles | Camp | Graduated exposure, psychoeducation, somatic anxiety management, cognitive restructuring, problem solving, therapeutic sleepover, rewards, relapse prevention, parental involvement | Moderate | High | Group, parent-focused | No | 7 | Days 1–4: 300, day 5: 180, day 6: overnight, day 7: 60, M: 240 | 7 | 24 + 1 night | 1 | SCAS-C-SAD subscale |
| | (8-week waitlist) | | | | | | | | | | | | SCAS-C-SAD subscale |
| Mean | | | | | | | | 5.1 | 239.1 | 11.1 | 31.7 | 3.0 | |
| Median | | | | | | | | 5.0 | 240.0 | 7.0 | 35.0 | 1.0 | |
| SD | | | | | | | | 1.6 | 135.2 | 10.4 | 11.5 | 4.1 | |
| Range | | | | | | | | 2–7 | 57.5–480 | 5–54 | 3–90 | 1–18 | |
| Overall mean | | | | | | | | 5.1 | 195.6 | 20.9 | 78.1 | 5.6 | |
| Overall median | | | | | | | | 5.0 | 180.0 | 14.0 | 39.3 | 3.0 | |
| Overall SD | | | | | | | | 1.4 | 105.9 | 19.4 | 85.0 | 5.3 | |
| Overall range | | | | | | | | 2–10 | 45–480 | 4–74.2 | 3–360 | 1–25.8 | |

*Note.* ACT = Acceptance and Commitment Therapy; AD = anxiety disorder; ADIS CSR = Anxiety Disorders Interview Schedule Clinician Severity Rating; ASD = autism spectrum disorder; ASI = Anxiety Sensitivity Index; CGI-S = Clinician Global Index–Severity; CY-BOCS = Children's Yale–Brown Obsessive Compulsive Scale; CY-BOCS-SR = CY-BOCS Self-Report; DCS = d-cycloserine; ERP = exposure with response prevention; ES = effect size; ICBT = intensive CBT; IGBT = intensive group CBT; IOP = intensive outpatient program; MASC = Multidimensional Anxiety Scale for Children; MI = motivational interviewing; min. = minimum; med. = median; mo. = months; NA = not available; OCD = obsessive-compulsive disorder; PDSS = Panic Disorder Severity Scale; PE = psychoeducation; PHP = partial hospitalisation program; PRIDE = praise, reflect, imitate, describe, and enthusiasm; Rg = range; SCARED = Screen for Child Anxiety-Related Emotional Disorders; SCAS-SAD = Spence Children's Anxiety Scale, Separation Anxiety Disorder subscale; SCAS-C-SAD = SCAS Child Version, Separation Anxiety Disorder subscale; SM = selective mutism; SMQ = Selective Mutism Questionnaire; SS = symptom severity; STAI-C = State–Trait Anxiety Inventory for Children; TCR = therapist-client ratio; wk. = weeks. Studies marked with '*' are RCTs with waitlist or non-intensive control conditions and are also used in the between-group analyses. Studies marked with '†' are RCTs with intensive control conditions and not used in the between-group analyses. Studies marked with '‡' are non-randomised controlled trials, open-label trials, or single-case experimental designs and not used in the between-group analyses.

[a]Post-treatment scores were from either one or six months after treatment.

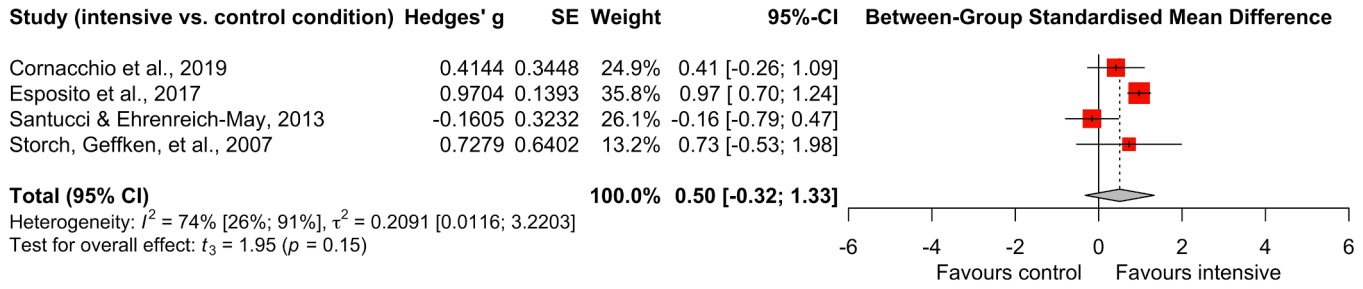



**Fig. 2.** Forest Plot Comparing Controlled Symptom Severity Change Between Intensive and Control Groups.
*Note*. Red squares sized proportionally to sample size. Horizontal lines indicate 95 % confidence interval. Cornacchio et al. (2019) data are based on parent instead of child reports. Cornacchio et al. (2019) and Santucci and Ehrenreich-May (2013) employed waitlist control groups. Esposito et al. (2017) and Storch, Geffken, et al. (2007) employed active control groups.

demonstrated an overall large, statistically significant ES (2.50) at post-treatment (Figure B.2, top, 8 treatment arms) with substantial heterogeneity. At follow-ups (Figure B.2, bottom, 2 treatment arms), the pooled ES was large (3.12) and statistically non-significant with negligible heterogeneity. These ESs were larger compared to the overall effects of the main analyses (Fig. 3), but only the main analyses showed a statistically significant effect at follow-up.

Further exploratory analyses (Appendix B, Figures B.3 and B.4) were conducted separately for studies focussed on youth with anxiety disorders and OCD. For anxiety studies, an overall medium, statistically significant ES was found at post-treatment (ES 0.72, Figure B.4, top, 22 treatment arms) with substantial heterogeneity. At follow-up, the pooled ES was large and statistically significant (ES 0.81, Figure B.4, bottom, 11 treatment arms), with substantial heterogeneity. The results showed larger effect sizes for OCD studies at both post-treatment and follow-up. For OCD studies, an overall large, statistically significant ES was found at post-treatment (ES 2.05, Figure B.3, top, 32 treatment arms), with substantial heterogeneity. The pooled ES was even larger and statistically significant at follow-up (ES 2.78, Figure B.3, bottom, 11 treatment arms), with substantial heterogeneity.

### 3.7. Remission following intensive treatment

#### 3.7.1. Comparing between-group intensive and control conditions

Table 3 displays remission rates within RCTs (research question 3a, $k$ = 3). Post-treatment remission was higher in all three intensive conditions compared to control conditions, with weighted averages of 47.5 % and 20.6 %, respectively. Participants in intensive conditions were 2.20 times as likely to achieve remission compared to those in control conditions (RR = 2.20, 95 %CI = [0.20; 23.61]; Figure C.1), but the overall pooled effect was statistically non-significant ($t(2) = 1.43$, $p$ =.29) with low heterogeneity ($I^2$ = 27 %, 95 %CI = [0 %; 92 %], $\tau^2$ = 0.33, 95 %CI = [0.00; 53.10]).

Follow-up remission rates of intensive treatments averaged 57.8 %. One study provided follow-up data for the control group, indicating a 50 % remission rate versus 65 % in the respective intensive treatment group (Storch, Geffken, et al., 2007). Participants in the intensive condition were 1.30 times as likely to achieve remission at follow-up compared to the control group, but the effect was non-significant (RR = 1.30, 95 %CI = [0.75; 2.24], $z$ = 0.95, $p$ =.34).

#### 3.7.2. Uncontrolled within-group remission rates

Post-treatment remission rates of intensive treatment (Table 4, 17 treatment arms) ranged from 12.5 % to 90.0 %, with a weighted average of 49.0 %. At follow-ups (Table 4, 13 treatment arms), remission ranged from 37.5 % to 100 % with a weighted average of 62.4 %. Remission rates were higher at post-treatment based on parent interviews in one study (Table B.1), but this difference diminished at follow-up (Canavera et al., 2022). Child and parent data were consistent at post-treatment in another study (Santucci et al., 2009). For two studies including treatment-resistant youth, separate analyses showed lower weighted average remission rates at post-treatment and follow-up (Table B.2) compared to the main analyses. Further exploratory analyses (Appendix B, Tables B.3 and B.4) were conducted on three treatment arms focussed exclusively on youth with anxiety disorders and twelve arms focussed exclusively on youth with OCD. Results showed higher remission rates at follow-up compared to post-treatment in both anxiety and OCD studies. Remission rates were higher in anxiety studies than in OCD studies, but this finding may be skewed by the small number of anxiety studies.

### 3.8. Impairment, functioning, and quality of life following intensive treatment

#### 3.8.1. Impairment

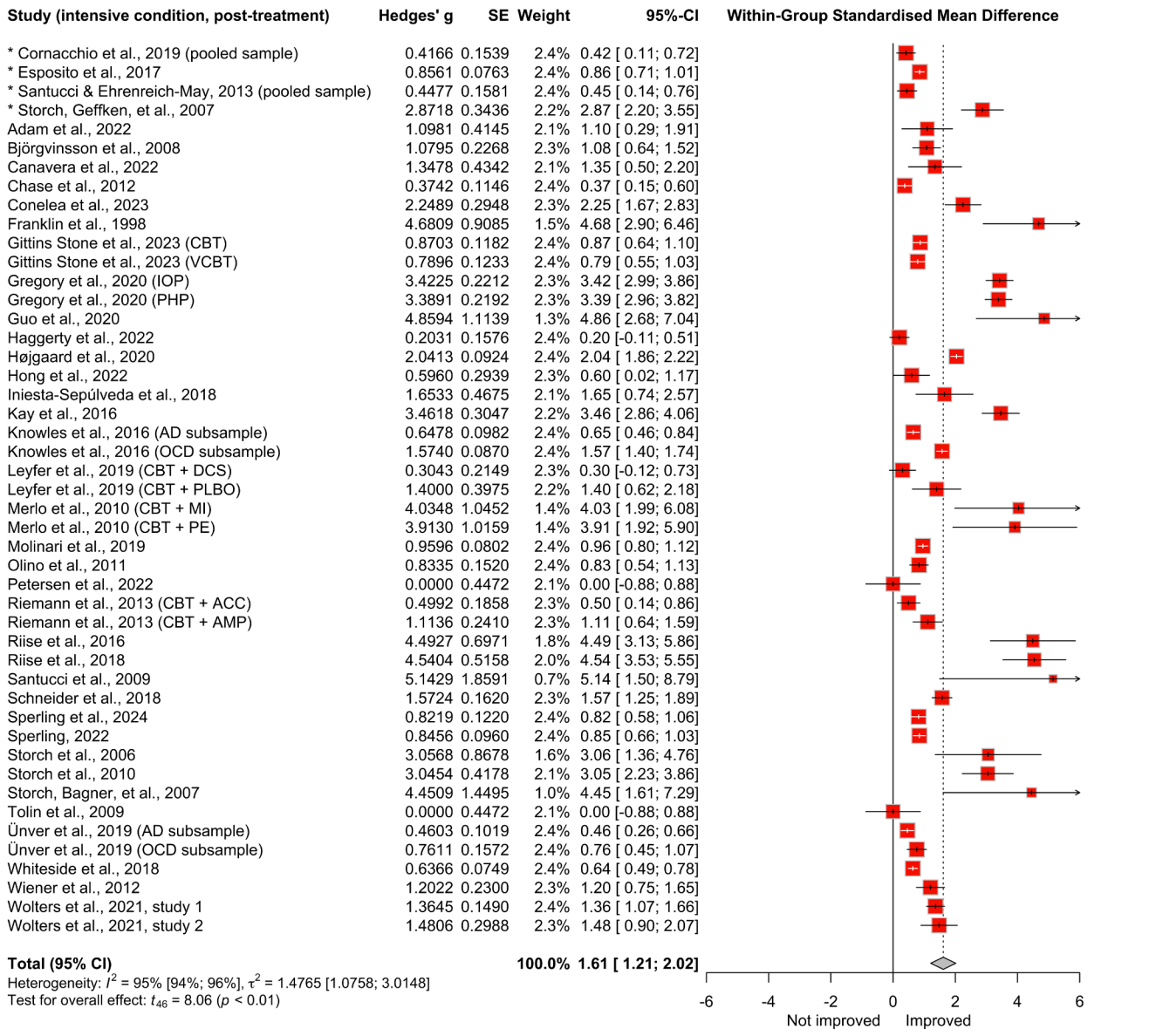
Uncontrolled within-group analyses of intensive treatments, comparing impairment change over time from pre-treatment to post-treatment (research question 3b; Fig. 4, top, 22 treatment arms), revealed ESs ranging from negligible (0.0) to large (5.85). No ESs were negative, and the pooled ES was large (1.11) and statistically significant, indicating positive pre–post changes in impairment. At follow-ups (Fig. 4, bottom, 14 treatment arms), ESs ranged from negligible (0.0) to large (7.33), with a large statistically significant pooled ES (1.61) indicating positive impairment changes from pre-treatment to follow-ups. These post-treatment and follow-up effects should be interpreted cautiously due to substantial

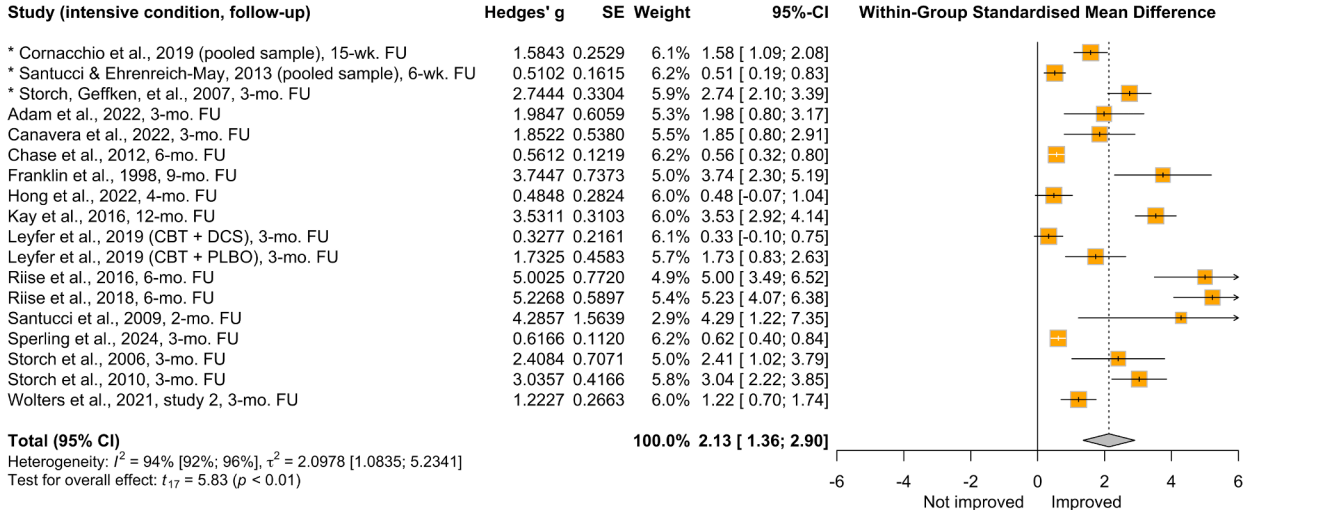
#### 3.8.2. General functioning

Uncontrolled within-group analyses of intensive treatments, comparing pre-treatment to post-treatment general functioning over time (research question 3b; Fig. 5, top, 5 treatment arms), revealed medium to large positive post-treatment ESs ranging from 0.78 to 2.34. A large statistically significant pooled ES (1.48) indicated positive pre- to post-treatment changes, with substantial heterogeneity. ESs were large and positive at follow-ups (Fig. 5, bottom, 3 treatment arms), ranging from 1.17 to 2.20, with a large statistically significant pooled ES (1.67) with negligible heterogeneity, indicating higher functioning scores from pre-treatment to follow-ups.

#### 3.8.3. Quality of life

Quality of life was assessed by two uncontrolled studies. Within-group analyses of changes over time revealed statistically significant, positive, and moderately-sized effects of 0.79 and 0.61 for Iniesta-Sepúlveda et al. (2018) and Molinari et al. (2019), respectively. Overall, a positive medium statistically significant pooled ES was found (0.62, $t(1)$ = 16.67, $p$ =.04, 95 %CI = [0.15; 1.08]) with negligible heterogeneity ($I^2$ = 0 %, $\tau^2$ = 0), indicating an increase in quality of life from pre- to post-treatment. Follow-up data were unavailable.




*(caption on next page)*

**Fig. 3.** Forest Plot of Uncontrolled Within-Group Symptom Severity Change at Post-Treatment (Top) and Follow-Up (Bottom).
*Note.* ACC = attention control condition; AD = anxiety disorder; AMP = attention modification program; CBT = cognitive behavioural therapy; DCS = d-cycloserine; FU = follow-up; IOP = intensive outpatient programme; MI = motivational interviewing; mo. = months; OCD = obsessive-compulsive disorder; PE = psychoeducation; PHP = partial hospitalisation programme; PLBO = placebo; VCBT = videoconferencing-based CBT; wk. = weeks. Red and orange squares sized proportionally to sample size. Horizontal lines indicate 95 % confidence interval. Post-treatment scores reported by Whiteside et al. (2018) and Tolin et al. (2009) consist of data from either 1 or 6 months post-treatment, but separate data were not available for post-treatment and follow-up. Cornacchio et al. (2019) and Hong et al. (2022) data are based on parent instead of child reports. Cornacchio et al. (2019) and Santucci and Ehrenreich-May (2013) combined data of intensive and control groups, after the waitlist-control group received the intensive intervention. Studies marked with '*' are RCTs that were also used in between-group analyses.

**Table 3**
Remission of Clinical Status Between Intensive and Control Conditions.

| Study | Post-treatment | | | Follow-up | | |
|---|---|---|---|---|---|---|
| | Remission intensive treatment | Remission control treatment | Risk ratio [95 %-CI] | Remission intensive treatment, period | Remission control treatment, period | Risk ratio [95 %-CI] |
| Cornacchio et al. (2019)[a,b,c] | 7.1 % | 0 % | 3.21 [0.14; 72.59] | 44.8 %, 15 wk. | | |
| Santucci & Ehrenreich-May (2013)[a,c] | 50.0 % | 0 % | 14.03 [0.88; 224.32] | 61.0 %, 6 wk. | | |
| Storch et al. (2007)[d] | 75.0 % | 50.0 % | 1.50 [0.90; 2.49] | 65.0 %, 3 mo. | 50.0, 3 mo. | 1.30 [0.75; 2.24] |
| Weighted mean prop. Random effects model | 47.5 [30.27; 64.70] | 20.6 [6.67; 34.56] | 2.09 [0.23; 18.82] | 57.8 [40.78; 74.83] | 50.0 [34.50; 65.50] | |

*Note.* mo. = months; prop. = proportion; wk. = weeks.
[a]Follow-up remission rate includes remission of youth in the waitlist-control group, who received the intensive intervention after the waitlist period. [b]Remission data based on parent interviews due to absence of child data. [c]Waitlist control group. [d]Active control group.

### 3.9. Acceptability and feasibility of intensive treatments

#### 3.9.1. Acceptability

Acceptability of intensive treatment (research question 4) was assessed for youth ($k$ = 4), parents ($k$ = 5), and therapists ($k$ = 1). Acceptability ratings were conducted with various measures (Table 5). Scores were therefore standardised to percentages of the total possible score range for each measure. This revealed acceptability scores of intensive treatments among youth and parents ranging from 60.8–86.0 % (weighted average 69.7 %) and 73.5–96.5 % (weighted average 86.9 %), respectively. Qualitative comments expressed satisfaction with intensive delivery formats (e.g., "12 out of 17 caregivers believed the scheduling was more acceptable than previous treatment"), treatment effectiveness (e.g., "Children and parents agreed that the program helped their child better cope with OCD"), and parenting interventions (e.g., "Parents were satisfied with their involvement"). Some parents preferred the scheduling of standard treatment (e.g., "two out of 17 caregivers preferred the scheduling of previous treatment"), wished to be more involved (e.g., "Suggestions included increased parental involvement in the treatment"), and found intensive treatment more challenging for their child ("two caregivers reported that intensive summer day camp was harder for their child than traditional therapy"). See Supplementary Materials 9 for all comments. One cost-effectiveness analysis found intensive outpatient treatments more cost-effective than standard CBT, but with 3.7 times the cost as CBT and medication combined (Gregory et al., 2020).

#### 3.9.2. Feasibility and drop-out rates

No studies directly evaluated the feasibility of implementing intensive treatments. However, Cornacchio et al. (2019) systematically assessed potential barriers to treatment participation and found that parents reported minimal obstacles to the intensive treatment. Drop-out rates (Table 1) averaged 4.2 % (weighted) for intensive conditions (reported in 24 treatment arms, $M$dn = 0.0 %, range 0–28.6 %) and 7.3 % for control groups (4 treatment arms, $M$dn = 2.5 %, range 0–10.2 %). Thirteen intensive (54.2 %) and two control (50 %) conditions reported zero drop-outs. Participants in control conditions were 32 % more likely to drop out during treatment compared to those in intensive conditions (RR = 0.68, 95 %CI = [0.02; 26.08]; Figure C.2), but the overall pooled effect was statistically non-significant ($t(1) = -1.33$, $p$ =.41) with negligible heterogeneity ($I^2$ = 0 %, $\tau^2$ = 0.0). Drop-out reasons included health-related factors, practical barriers, and motivational reasons (Supplementary Materials 9).

#### 3.9.3. Adverse events

Adverse events (research question 4) were not directly assessed in any study. No studies reported events such as suicidal thoughts, treatment fear, stigma, adjustment problems, or loss of hope.

## 4. Discussion

Four primary intensive treatment formats were identified based on 39 studies, with outpatient treatments being the most common, especially among studies with OCD samples. Inpatient treatments had more frequent and longer sessions than outpatient treatment, while residential treatments had lower weekly intensity but extended overall durations. Camp- and home-based treatments offered shorter concentrated care than outpatient, inpatient and residential settings, and were more common in anxiety than OCD studies. Intensive treatments were mainly CBT-based, mirroring standard anxiety treatment (Chorpita & Daleiden, 2009) and typically involved exposure, psychoeducation, and cognitive methods, along with maintenance sessions, relapse prevention, and medication management. A significant portion of treatments extensively involved parents or family therapy (e.g., Guo et al., 2020; Sperling, 2022). While the current methodology does not allow for assessing the relative contribution of different treatment components, Merlo et al. (2009) have identified family accommodation as mediator of treatment outcomes. This suggests that engaging parents could be particularly beneficial when addressing factors linked to poorer CBT outcomes, such as family functioning and symptom accommodation (Garcia et al., 2010; Peris et al., 2008). Parents' active participation in exposure exercises (e.g., Canavera et al., 2022) can enhance their understanding of the rationale and significance of exposure, improving their ability to manage their child's anxiety and independently continue exposure at home to sustain long-term gains (Freeman et al., 2003; Riise et al., 2016). Capturing treatment personalisation was difficult based on the information presented in the articles, but personalisation appeared generally limited, despite potential advantages (Bertie & Hudson, 2021;

**Table 4**
Remission of Clinical Status Over Time Within Intensive Conditions.

| Study | Intensive group | |
|---|---|---|
| | Remission at post-treatment Prop. [95 %-CI] | Remission at follow-up Prop. [95 %-CI], period |
| Adam et al. (2022) | 40.0 [3.71; 76.29] | 40.0 [3.71; 76.29], 3 mo. |
| Canavera et al. (2022) | 12.5 [−10.42; 35.42] | 37.5 [3.95; 71.05], 3 mo. |
| Cornacchio et al. (2019) (pooled sample)[a, b] | 17.2 [3.46; 30.94] | 44.8 [26.7; 62.9], 15 wk. |
| Iniesta-Sepúlveda et al. (2018) | 33.3 [2.51; 64.09] | |
| Leyfer et al. (2019) (CBT + DCS) | 66.7 [47.84; 85.56] | 83.3 [68.38; 98.22], 3 mo. |
| Leyfer et al. (2019) (CBT + PLBO) | 90.0 [78.00; 102.00] | 90.0 [78.00; 102.00], 3 mo. |
| Petersen et al. (2022) | 33.3 [−20.03; 86.63] | |
| Riise et al. (2016) | 72.7 [54.08; 91.32] | 68.2 [48.74; 87.66], 6 mo. |
| Riise et al. (2018) | 80.5 [68.37; 92.63] | 73.2 [59.64; 86.76], 3 mo. |
| Santucci & Ehrenreich-May (2013) (pooled sample)[b] | 43.0 [24.66; 61.34] | 61.0 [42.93; 79.07], 6 wk. |
| Santucci et al. (2009)[c] | 50.0 [1.00; 99.00] | 100.0 [100.00; 100.00], 4 mo. |
| Storch et al. (2006)[a] | 71.4 [37.92; 104.88] | 42.9 [6.23; 79.57], 3 mo. |
| Storch et al. (2010)[a] | 56.6 [38.86; 74.35] | 53.3 [35.45; 71.15], 3 mo. |
| Storch et al. (2007) | 40.0 [−2.94; 82.94] | |
| Storch et al. (2007) | 75.0 [61.58; 88.42] | 65.0 [50.22; 79.78], 3 mo. |
| Wolters et al. (2021), study 1 | 17.4 [8.45; 26.35] | |
| Wolters et al. (2021), study 2 | 47.4 [24.95; 69.85] | 57.9 [35.70; 80.10], 3 mo. |
| Weighted mean | 49.0 [27.28; 70.78] | 62.4 [41.1; 83.65] |

*Note.* CBT = cognitive behavioural therapy; DCS = d-cycloserine; FU = follow-up; mo. = months; PLBO = placebo; prop. = proportion; wk. = weeks.
[a]Remission data based on parent interviews due to absence of child interviews. [b]Data based on pooled results of the initial treatment and the control group, who received the intervention after the waitlist period. [c]Based on composite ADIS clinician severity rating (CSR) score that integrates the child, parents, and clinician CSR scores, because no separate child score was available for follow-up.

Weisz et al., 2012). For instance, treatment intensity or family involvement could be determined based on pre-treatment symptom severity and family accommodation, which predicted intensive treatment outcomes (Rudy et al., 2014). Finally, remarkably few interventions incorporated booster sessions, despite the potential benefit of maintaining long-term outcomes by conducting multiple booster sessions within a year of treatment completion (Gearing et al., 2013; Negreiros et al., 2019; Piacentini et al., 2014).

Most treatment studies were conducted in the USA, and many trial papers did not specify rationales for offering intensive treatment or categorise it as regular, matched, or stepped care. However, the feasibility of intensive treatments varies across contexts and intentions. Three main purposes emerged among studies that specified reasons for initiating intensive treatment: as standard care for families preferring the intensive format or those living far from treatment centres (Whiteside et al., 2018), as matched care for clients with severe complaints (Rudy et al., 2014), or as stepped care for non-responders (Storch, Bagner, et al., 2007). To consider intensive treatments in a broader international perspective, the intensive Bergen 4-day treatment (B4DT) was developed in Norway for severe OCD in adults (Hansen et al., 2019) and youth (Riise et al., 2016, 2018). Youth, accompanied by their parents, are referred through local outpatient centres and may stay near the B4DT clinic while undergoing treatment due to considerable distances. In contrast, in the UK, the organisation of services typically prevents the routine delivery of intensive treatments as standard outpatient care, providing them exclusively within inpatient care. Similarly, in the Netherlands, Denmark, Australia, and Iceland, intensive treatments are not standard options. In the Netherlands, intensive outpatient or inpatient treatment may be offered to severe cases or non-responders, primarily through specialised or university-based clinics (e.g., Eenink et al., 2019). In Denmark, they are reserved for extremely severe cases. Feasibility studies are ongoing in Australia (e.g., O'Shannessy et al., 2023), while fragmented and disorganised mental healthcare implementation in Iceland leads some families to seek intensive treatments through private clinics. In low- or middle-income countries like South Africa, where mental healthcare resources are scarce and professionals are concentrated in urban areas, priorities are currently on broadly disseminating first-step treatments in community-based settings (Keynejad et al., 2021; World Health Organization, 2013), rather than implementing specialised interventions. Thus, the variability in healthcare infrastructure and resources affects the feasibility of intensive treatments, with expertise and implementation cost playing crucial roles in their adoption (Gregory et al., 2020).

Although severity of cases varied between delivery formats, sample characteristics across different intensive treatment studies often indicated severe problems, comorbidities, or complex case histories among youth, suggesting the use of intensive treatment as matched or stepped care rather than regular first-line care. Nearly half of all studies, particularly in OCD rather than anxiety studies, featured samples with substantial proportions of prior psychosocial or pharmacological treatment (e.g., Björgvinsson et al., 2008; Storch et al., 2006), which are associated with higher severity (Farraway et al., 2022). Pharmacological treatment is typically reserved for severe cases or non-responders (Geller & March, 2012; Koran et al., 2007), and while this likely varies considerably between countries, eight studies reported sample proportions of prior pharmacological treatment exceeding 75 % and concurrent medication use was reported in 28 studies. Concurrent medication was most prevalent among OCD studies, followed by mixed anxiety/OCD and anxiety studies. While no studies specifically examined intensive treatments within stepped-care models, eight explicitly mentioned targeting non-responders to first-line interventions (e.g., Conelea et al., 2023), positioning these as second-step interventions especially in OCD samples. This variability of participant profiles across interventions complicates comparisons of treatments employed with different intentions, including matched and stepped care. Likewise, substantial heterogeneity among participants within studies warrants further consideration of individual change patterns, for instance through single-case experimental designs, which have the added advantage of requiring smaller sample sizes (Tolin et al., 2009).

Our findings indicate that intensive treatments, although heterogenic due to various types of standard, matched, and stepped care, can achieve ESs comparable to standard treatments, though not necessarily greater. Controlled comparisons between intensive and control groups showed no significant post-treatment differences in symptom severity or remission, despite a medium-sized overall ES favouring intensive treatments. Previous meta-analyses reported similar ESs (Öst & Ollendick, 2017; Remmerswaal et al., 2021). It is possible that limited power (Storch, Geffken, et al., 2007) or short periods between the baseline and post-treatment assessments (Cornacchio et al., 2019; Santucci & Ehrenreich-May, 2013) prevented detection of small between-group effects. Alternatively, youth undergoing intensive treatments may present more severe cases, as suggested by the samples in our meta-analysis, which include non-responders to first-line interventions. This could complicate treatment progress, resulting in outcomes that are at best on par with standard treatments (Chase et al., 2012). Uncontrolled analyses of remission showed no significant difference between post-treatment and follow-up remission rates, averaging 50.8 % and 63.8 %, respectively. Though not directly comparable, these rates align with a Cochrane review of standard CBT for anxiety disorders (49.4 %

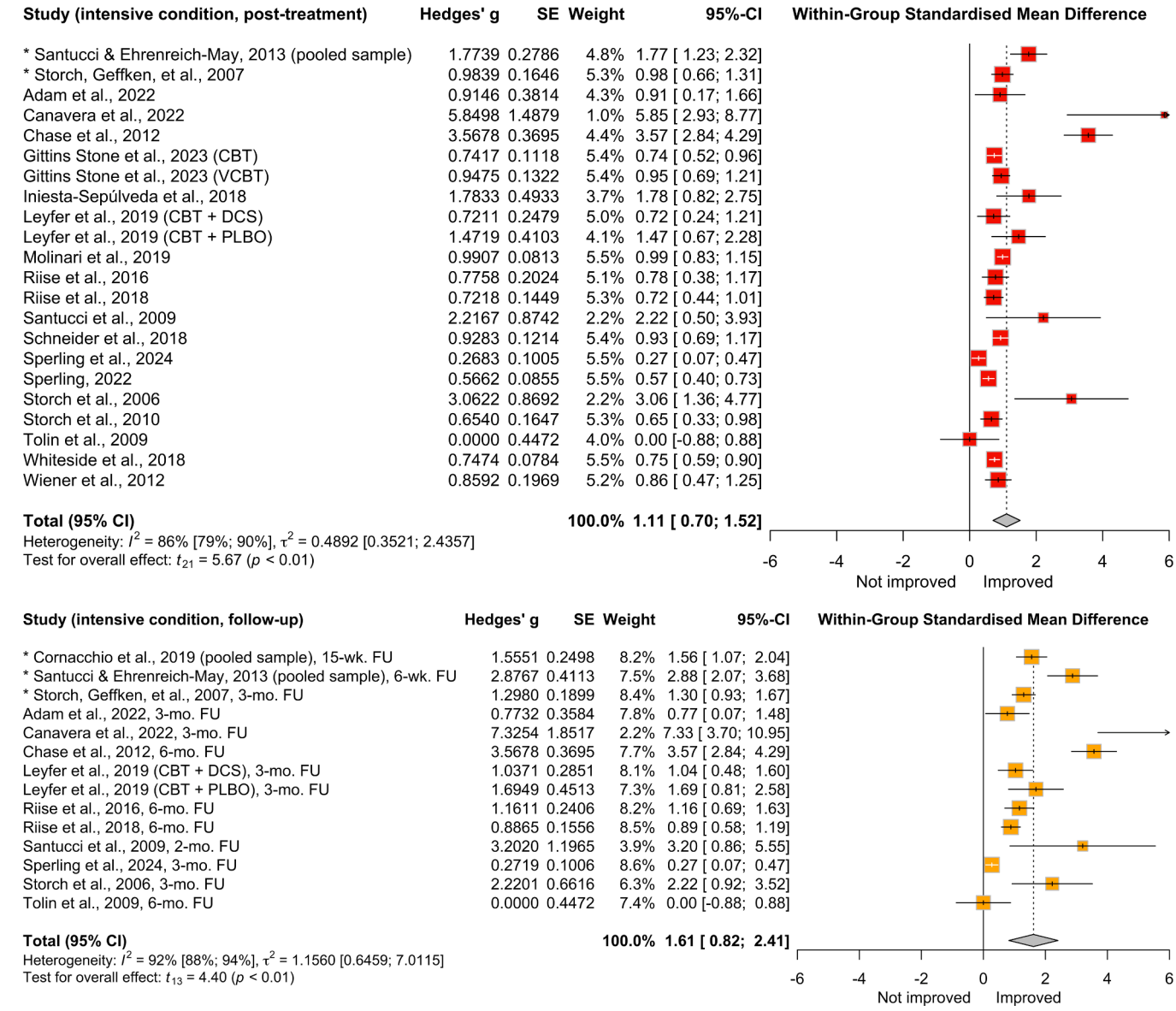



**Fig. 4.** Forest Plot of Uncontrolled Within-Group Impairment Change at Post-Treatment (Top) and Follow-Up (Bottom).
*Note.* CBT = cognitive behavioural therapy; DCS = d-cycloserine; FU = follow-up; mo. = months; PLBO = placebo; VCBT = videoconferencing-based CBT. Red and orange squares sized proportionally to sample size. Horizontal lines indicate 95 % confidence interval. Cornacchio et al. (2019) and Santucci and Ehrenreich-May (2013) combined data of intensive and control groups, after the waitlist-control group received the intensive intervention. Studies marked with '*' are RCTs that were also used in between-group analyses.

post-treatment, 66.7 % follow-up; James et al., 2020) and OCD in youth (50.0 % at post-treatment; Uhre et al., 2020). Symptom relief, impairment reduction, and improved overall functioning and quality of life were observed following intensive treatment, with medium to (very) large uncontrolled ESs. These effects were more pronounced at follow-ups, indicating potential long-term maintenance of gains. Separate uncontrolled analyses of parent reports revealed smaller but statistically significant ESs for symptom relief. Studies involving treatment-resistant youth exhibited larger uncontrolled ESs compared to the main analyses. However, only pre- to post-treatment effects reached significance, while pre-treatment to follow-up effects did not. This implies substantial progress during intensive treatment but also highlights challenges in maintaining gains. Notably, average remission rates were lower in these studies. However, these were not direct comparisons between standard and matched or stepped care studies, and the limited number of studies precludes definitive conclusions. Finally, exploratory subgroup analyses, conducted liberally rather than as direct comparisons, revealed medium and large ESs for symptom relief in both OCD and anxiety studies at post-treatment and follow-up. ESs were notably larger in OCD studies, possibly due to higher baseline severity, consistent with earlier observations of complex cases and prior treatment histories. Although participant-level data were unavailable for detailed analysis, variations in anxiety disorders—from specific fears (e.g., specific phobia, social anxiety disorder) to prolonged anxious distress (e.g., generalised anxiety disorder)—may also play a role. Intensive treatments, often focused on exposure exercises, may be more effective for fear-based anxiety disorders than for those characterised by prolonged distress (McTeague & Lang, 2012).

In four and five studies, respectively, youth and parents expressed positive views on acceptability measures of intensive treatments, with parents indicating slightly higher satisfaction, although some desired greater involvement. One study assessed therapist experiences and found slightly lower acceptability scores compared to youth. However, acceptability outcomes are based on limited data, and no data were

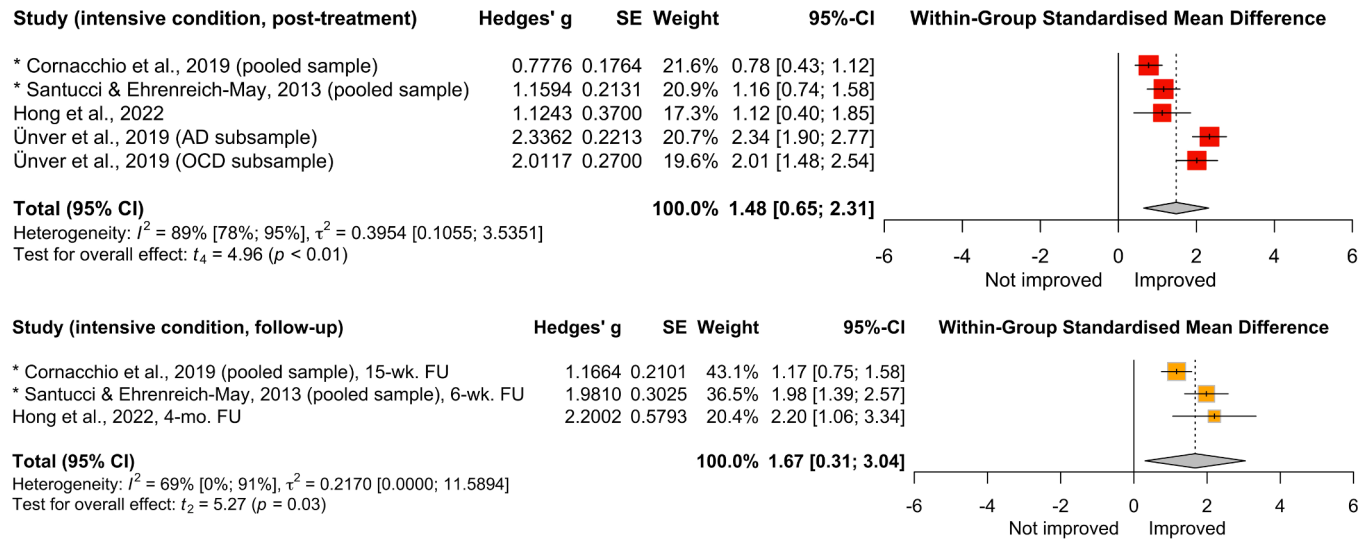



**Fig. 5.** Forest Plot of Uncontrolled Within-Group General Functioning Change at Post-Treatment (Top) and Follow-Up (Bottom).
*Note.* AD = anxiety disorder; FU = follow-up; mo. = months; OCD = obsessive-compulsive disorder; wk. = weeks. Red and orange squares sized proportionally to sample size. Horizontal lines indicate 95 % confidence interval. Cornacchio et al. (2019) and Santucci and Ehrenreich-May (2013) combined data of intensive and control groups, after the waitlist-control group received the intensive intervention. Studies marked with '*' are RCTs that were also used in between-group analyses.

**Table 5**
Acceptability of Intensive Treatment.

| Study | Measure | Youth report | | Parent report | | Therapist report | |
|---|---|---|---|---|---|---|---|
| | | Post mean (SD), FU mean (SD, period) | % of scale (range) | Post mean (SD) | % of scale (range) | Post mean (SD) | % of scale (range) |
| Adam et al. (2022) | Satisfaction Inventory | 2.7 (0.45) | 67 % (0–3) | | | 2.6 (0.40) | 64 % (0–3) |
| Canavera et al. (2022) | End-of-treatment satisfaction questionnaire | 4.3 (0.49) | 86 % (1–5) | 4.6 (0.52) | 93 % (1–5) | | |
| Cornacchio et al. (2019) (pooled sample) | CSQ−8 | | | 30.5 (NA) | 85 % (1–36) | | |
| Haggerty et al. (2022) | TEQ-P | | | 98.2 (11.95) | 74 % (21–126) | | |
| Hong et al. (2022) | CSQ−8 | | | 29.0 (2.83) | 88 % (8–32) | | |
| Leyfer et al. (2019) (CBT + DCS) | POTQ-A | 82.8 (10.69), 98.8 (17.43, 3 mo.) | 61 % (1–136), 73 % | | | | |
| Leyfer et al. (2019) (CBT + PLBO) | POTQ-A | 85.5 (18.22), 99.3 (27.25, 3 mo.) | 63 % (1–136), 73 % | | | | |
| Santucci & Ehrenreich-May (2013) (pooled sample) | CSQ−8 | | | 31.2 (1.60) | 97 % (8–32) | | |
| Weighted mean | | | 69.7 % | | 86.9 % | | |

*Note.* CBT = cognitive behavioural therapy; CSQ-8 = Client Satisfaction Questionnaire-8; DCS = d-cycloserine; FU = follow-up; mo. = months; NA = not available; PLBO = placebo; POTQ-A = Perceptions of Treatment Questionnaire-Adolescent Version; TEQ-P = Treatment Evaluation Questionnaire-Parent Form; wk. = weeks. Higher scores indicate higher acceptability levels; percentages refer to the standardised scores based on the total possible score range.

available regarding implementation feasibility of intensive treatments. Intensive treatments exhibited low drop-out rates (weighted average 4.2 %), surpassing control conditions (weighted average 7.3 %). Compared to standard CBT for youth with anxiety disorders (11.2 %; James et al., 2020), intensive treatments exhibited notably lower drop-out rates. This may be due to the increased challenge of dropping out amidst frequent sessions or within inpatient or residential units, emphasising the importance of better understanding treatment acceptability among youth and parents. The intensive period may also foster a momentum of change among youth, parents, and therapists, enhancing commitment and motivation through a shared sense of urgency (Storch, Geffken, et al., 2007). However, guidelines lack specifics on implementing intensive treatments (Geller & March, 2012; Walter et al., 2020), and they require intricate planning and coordination. Practical considerations, like family arrangements and therapist scheduling, add to these challenges (Santucci & Ehrenreich-May, 2013), and merit assessment in future implementation studies. Cost-effectiveness studies showed that intensive outpatient treatment is more effective than standard CBT with medication in terms of symptom reduction, but the former was three times more expensive (Gregory et al., 2020), questioning its suitability for standard care. Large-scale RCTs are needed to consider the cost of these treatments, especially when applied as matched or stepped care for severe cases and non-responders. No adverse events were reported, but standardised documentation of adverse events is crucial to address potential underreporting in psychotherapy research (Klatte et al., 2023; Vaughan et al., 2014).

Several limitations should be considered when interpreting this systematic review and meta-analysis. First, the included evidence is based on a small number of RCTs, with substantial heterogeneity and a high risk of bias among studies necessitating caution in interpreting

findings from controlled studies. To address this, we included uncontrolled studies, which introduce potential biases and uncertainty concerning confounding factors. The variability of these studies complicates comparisons and interpretation of the different treatments, populations, and intervention goals. Our analyses also revealed potential publication bias, and although these indications may result from substantial between-study heterogeneity (Page et al., 2021), further caution in interpretating our findings is warranted. Second, limitations exist in our review processes. We relied on reporting by authors for information on sample and treatment characteristics, acceptability, adverse events, and remission, which may introduce bias. Remission was defined differently across studies, and data not meeting our criteria were excluded. This includes treatment response outcomes reflecting partial improvement rather than full remission, which by definition show more favourable results (McGuire et al., 2015). However, aspects of treatment response were captured through other variables, including symptom severity and impairment. Maintaining a consistent definition without exclusions would only have been possible with individual patient data, which could also help explore the effects of intensive treatment based on personal or diagnostic characteristics, such as type of anxiety disorder (e.g., fear-focused vs. anxious-distressed). This presents exciting avenues for future research. Finally, some studies fell outside the scope of this meta-analysis due to our definition of 'intensive,' including single-session treatments (e.g., Ollendick et al., 2009) and treatments with just under ten hours of therapist contact (e.g., Whiteside et al., 2008, 2014; Whiteside & Jacobsen, 2010).

### *4.1. Conclusion*

Our findings suggest promise in intensive interventions, which potentially enhance motivation, commitment, and treatment progress, with low drop-out rates and increased likelihood of treatment completion. This could increase benefits for youth with anxiety or obsessive-compulsive disorders by aiding earlier recovery and reducing overall suffering duration. However, further data on acceptability and feasibility are required, particularly given the cost implications of intensive treatments. Our findings also highlight the limited research on intensive treatments, marked by a scarcity of randomised controlled studies. Secondary outcomes, including impairment, quality of life, overall functioning, and adverse events, have been sparingly investigated. Given the substantial time and effort investments required to establish and participate in intensive treatments (Santucci & Ehrenreich-May, 2013), health economic measures are necessary to understand the full cost of implementing these treatments. Further high-quality research, including studies to consider individual change patterns and head-to-head comparison trials between standard and intensive treatment with comparable client groups, is required to assess the effectiveness and suitability of intensive treatments, address implementation challenges, and discern the optimal population for their use.

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## CRediT authorship contribution statement

**Mark Tomlinson:** Writing – review & editing. **Maaike H. Nauta:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization. **Colin O. W. Ganzevoort:** Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Lidewij H. Wolters:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization. **Rianne Hornstra:** Writing – review & editing, Validation, Methodology, Investigation, Conceptualization. **Caitlin M. Grieve:** Writing – review & editing, Validation, Investigation. **Davíð R. M. A. Højgaard:** Writing – review & editing, Conceptualization. **Gudmundur A. Skarphedinsson:** Writing – review & editing, Conceptualization. **Bernhard Weidle:** Writing – review & editing, Conceptualization. **Polly Waite:** Writing – review & editing, Conceptualization. **Lizél-Antoinette Bertie:** Writing – review & editing, Conceptualization.

## Declaration of Competing Interest

MN is a co-author of some cognitive behavioural treatment programs for children and adolescents with anxiety disorders, for which she receives no financial benefits. MN is a member of the task force of the Dutch National Care Standard for anxiety disorders (Zorgstandaard Angststoornissen), for which she received some subsistence. LW receives royalties from Springer Media and Lannoo for co-authorship of a Dutch treatment protocol and a book on paediatric OCD. BW receives royalties from book Publishers Gyldendal and Universitetsforlaget for co-authorship of books on OCD and Child and Adolescent Psychiatry. PW is funded by the National Institute for Health Research (NIHR) through a Development and Skills Enhancement award (ref: HR302843) for this research. The views expressed in this publication are those of the authors and not necessarily those of the NIHR, NHS or the UK Department of Health and Social Care. PW receives royalties from the Taylor Francis Group as co-editor and co-author of a book for clinicians on cognitive behavior therapy for OCD in children and adolescents and LittleBrown for co-editorship of books on child and adolescent common mental health problems. The other authors declare that they have no known conflicts of interest.

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Adam McGrane (AM) is thanked for his contribution in assessing the risk of bias. Ina Vrolijk (IV) is thanked for her assistance in developing the search strategy.

## Appendix A. : Risk of bias and publication bias

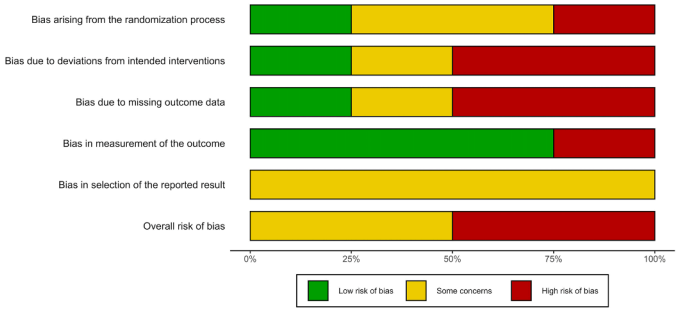


**Figure A1.** Summary of Risk of Bias (ROB2) of Included RCTs (k = 4).

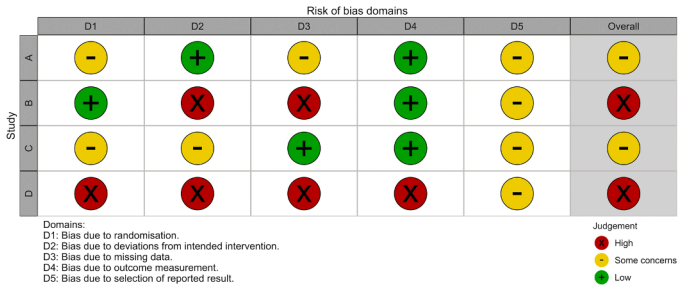


**Figure A2.** Risk of Bias (ROB) of Included RCTs Per Domain, Note. A = Cornacchio et al. (2019); B = Esposito et al. (2017); C = Santucci and Ehrenreich-May (2013); D = Storch, Geffken, et al. (2007).

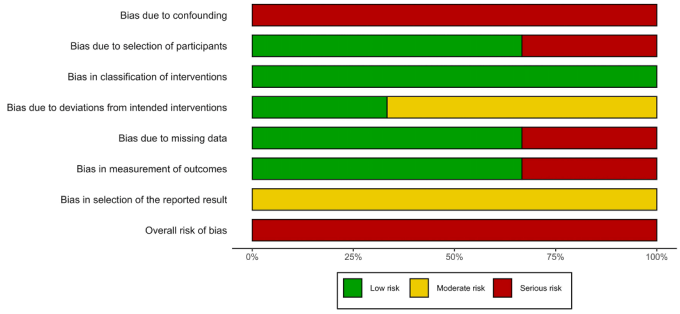


**Figure A3.** Summary of Risk of Bias (ROBINS-I) of Included Non-Randomised Controlled Trials (k = 3).

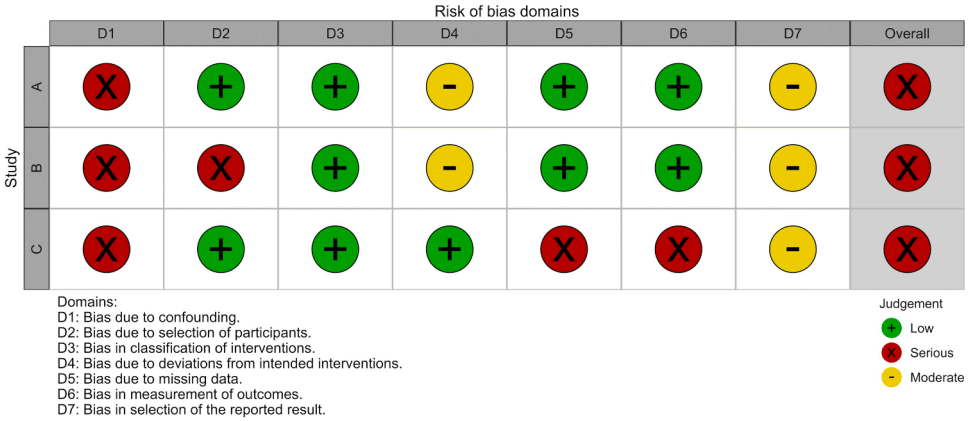


**Figure A4.** Risk of Bias (ROBINS-I) of Included Non-Randomised Controlled Trials Per Domain, Note. A = Chase et al. (2012); B = Franklin et al. (1998); C = Gittins Stone et al. (2023).

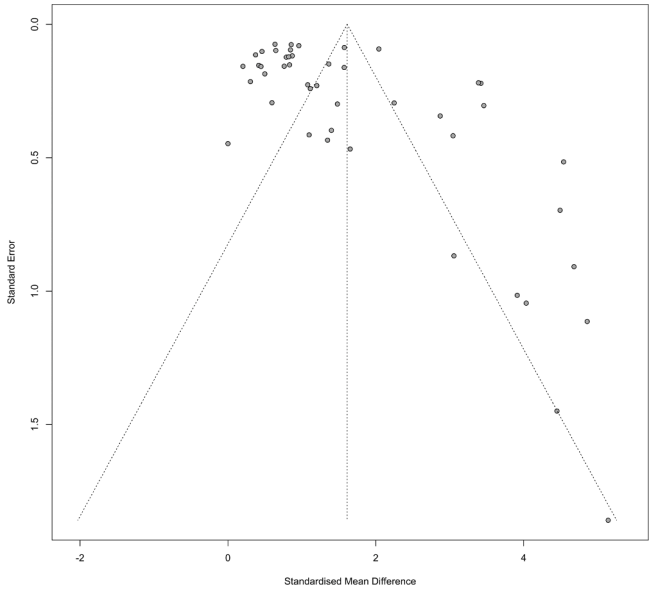


**Figure A5.** Caption.

## Appendix B. : Supporting analyses

*Comparing between-group symptom severity in intensive and controlled treatments based on parent reports*

Symptom relief based on parent reports was assessed by two RCTs. To assess the overall effect of intensive treatments compared to control treatments, the uncontrolled effects of both conditions were initially evaluated separately for each RCT via within-group analyses (see Supplementary Materials 8). Subsequently, the effects of intensive and control conditions were compared via between-group analyses. Based on parent reports ($k = 2$), between-group analyses revealed two statistically non-significant, positive, small-sized ESs of 0.41 and 0.45 for Cornacchio et al. (2019) and Santucci and Ehrenreich-May (2013), respectively. Overall, a statistically significant, positive, small-sized pooled ES was found (0.43, $t(1) = 24.98$, $p = .03$, 95 %CI = [0.21; 0.65]) with negligible heterogeneity ($I^2 = 0$ %, $\tau^2 = 0$), indicating improvements in symptom severity favouring the intensive treatment based on parent reports. No follow-up data were available.

*Comparing uncontrolled within-group symptom severity changes over time based on parent reports*

Figure B.1 presents supporting information for the interpretations of within-group symptom severity changes over time of the non-controlled intensive treatments, based on parent reports. Interpretations of this figure are presented in Section 3.6.2.

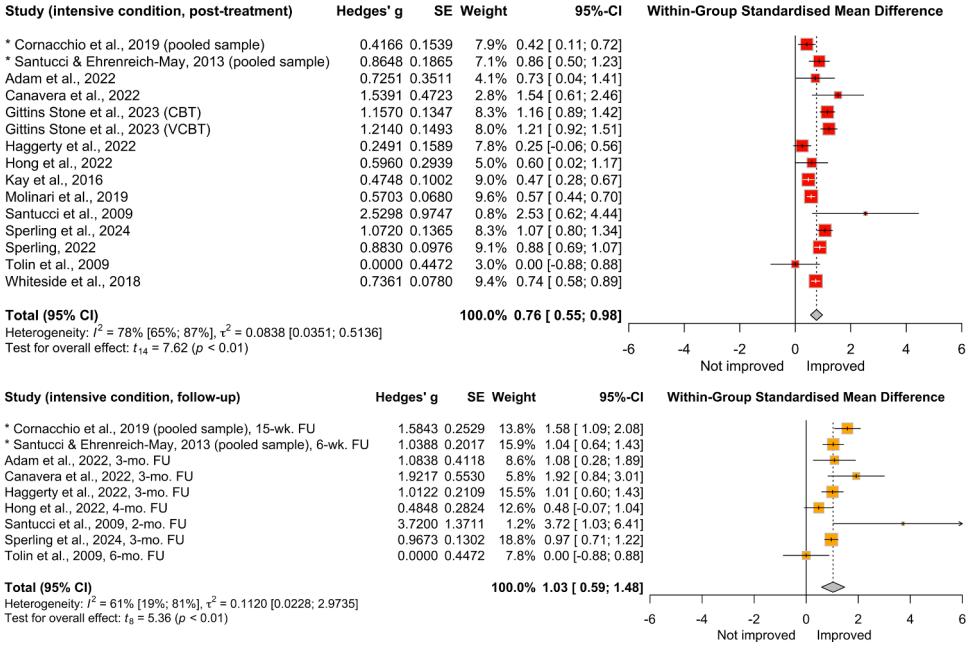


**Figure B.1.** Forest Plot of Uncontrolled Within-Group Symptom Severity Change at Post-Treatment (top) and Follow-Up (bottom) Based on Parent Reports.
*Note.* CBT = cognitive behavioural therapy; VCBT = videoconferencing-based CBT. Red and orange squares sized proportionally to sample size. Horizontal lines indicate 95 % confidence interval. Displayed effect sizes are for pre-treatment to post-treatment (top) and to follow-up (bottom) changes of symptom severity following intensive conditions, based on parent reports. Cornacchio et al. (2019) and Santucci and Ehrenreich-May (2013) combined data of intensive and control groups, after the waitlist-control group received the intensive intervention. Studies marked with '*' are RCTs that were also used in between-group analyses.

*Comparing uncontrolled within-group symptom severity changes in studies of treatment-resistant youth*

Figure B.2 presents supporting information for the interpretations of within-group symptom severity changes over time for studies that included samples of youth for whom prior treatment was insufficient. Interpretations of this figure are presented in Section 3.6.2.

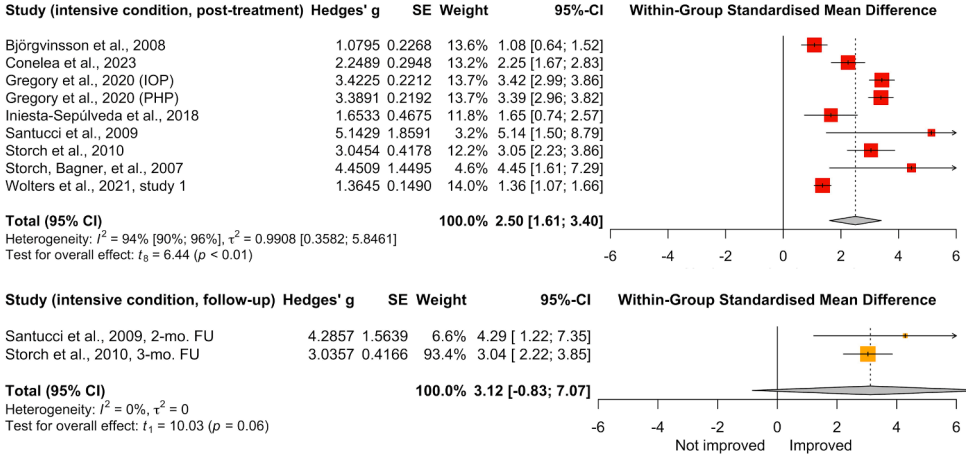


**Figure B.2.** Forest Plot of Uncontrolled Within-Group Symptom Severity Change at Post-Treatment (top) and Follow-Up (bottom) with Treatment-Resistant Youth.
*Note.* Red and orange squares sized proportionally to sample size. Horizontal lines indicate 95 % confidence interval. Displayed effect sizes are for pre-treatment to post-treatment (top) and to follow-up (bottom) changes of symptom severity following intensive conditions.

*Comparing uncontrolled within-group symptom severity changes in anxiety and OCD studies*

Figures B.3 (anxiety disorders) and B.4 (OCD) present the exploratory analyses of within-group symptom severity changes over time for studies that included exclusively samples of youth with anxiety disorders and youth with OCD. Interpretations of this figure are presented in Section 3.6.2.

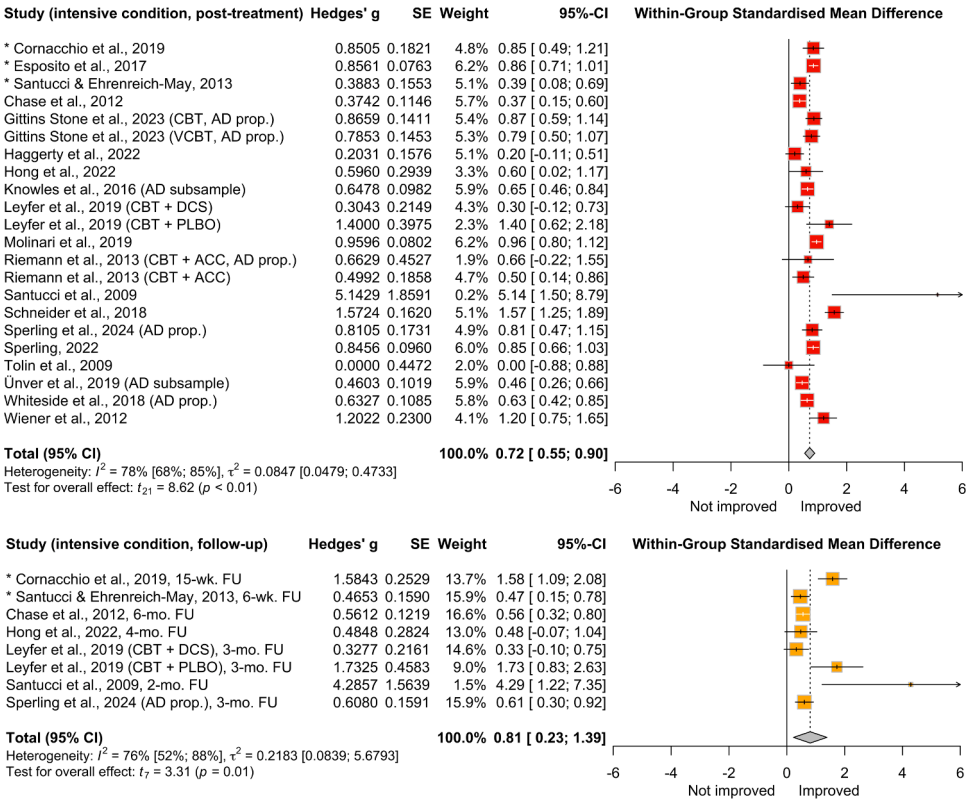


**Figure B.3.** Forest Plot of Uncontrolled Within-Group Symptom Severity Change at Post-Treatment (top) and Follow-Up (bottom) with Youth with Anxiety Disorders.

*Note.* Red and orange squares sized proportionally to sample size. Horizontal lines indicate 95 % confidence interval. Displayed effect sizes are for pre-treatment to post-treatment (top) and to follow-up (bottom) changes of symptom severity following intensive conditions.

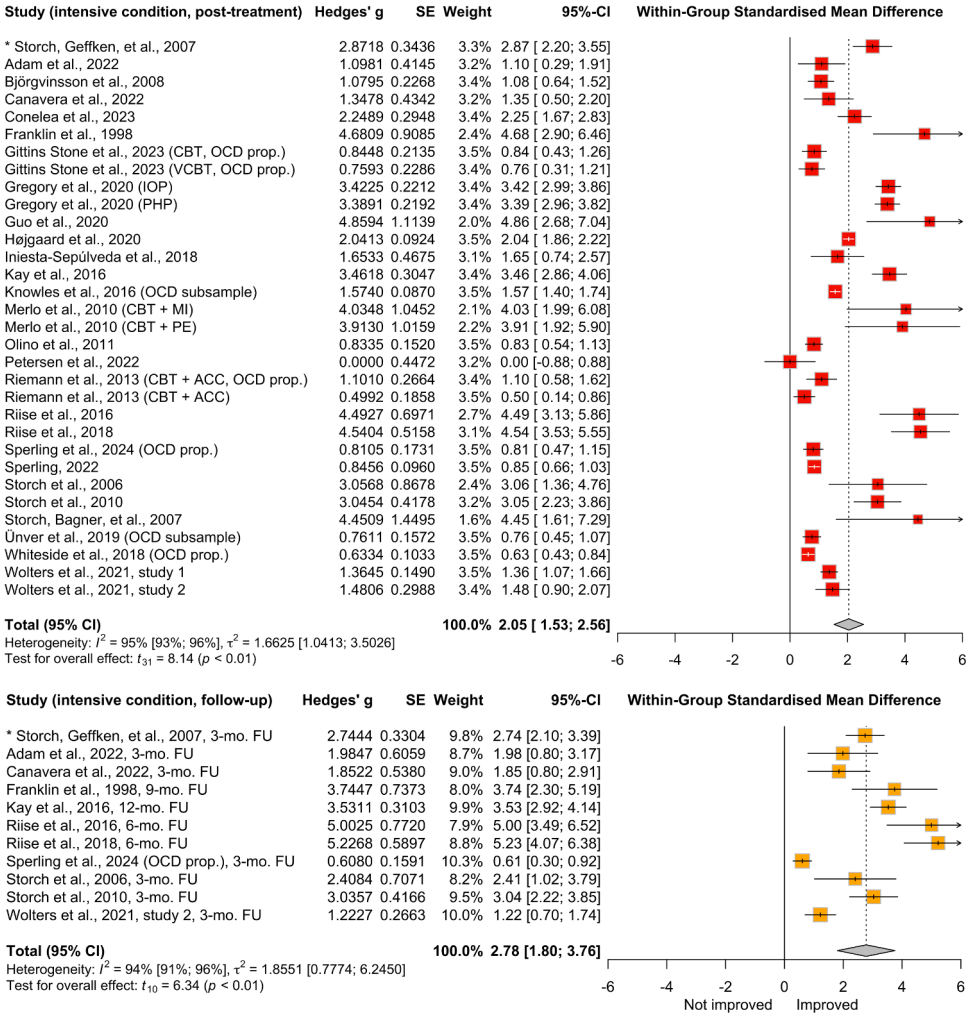


**Figure B.4.** Forest Plot of Uncontrolled Within-Group Symptom Severity Change at Post-Treatment (top) and Follow-Up (bottom) with Youth with OCD.
*Note.* Red and orange squares sized proportionally to sample size. Horizontal lines indicate 95 % confidence interval. Displayed effect sizes are for pre-treatment to post-treatment (top) and to follow-up (bottom) changes of symptom severity following intensive conditions.

*Uncontrolled within-group remission rates based on parent interviews*

Remission data based on parent interviews are presented in Table B.1. One study (Cornacchio et al., 2019) reported remission rates, based on parent interviews, comparing intensive and control conditions. The parent interviews revealed identical outcomes as the child interviews (see Table 3).

Comparing within-group remission over time based on parent interviews showed post-treatment remission rates ranging from 17.2 % to 71.4 %, with a weighted average of 39.7 % (5 treatment arms) after intensive treatment (Table B.1). At follow-ups (4 treatment arms), remission rates based on parent interviews increased in two studies and decreased in two others, ranging from 37.5 % to 53.3 %, with a weighted average of 47.3 %.

**Table B.1**
Remission of Clinical Status Over Time Within Intensive Conditions Based on Parent Reports.

| Study | Intensive group | |
|---|---|---|
| | Remission at post-treatment Prop. [95 %-CI] | Prop. FU [95 %-CI], period |
| Canavera et al. (2022) | 25.0 [−5.01; 55.01] | 37.5 [3.95; 71.05], 3 mo. |
| * Cornacchio et al. (2019) (pooled sample)[a] | 17.2 [3.46; 30.94] | 44.8[a] [26.70; 62.90], 15 wk. |
| Santucci et al. (2009)[b] | 50.0 [1.00; 99.00] | — |
| Storch et al. (2006)[c] | 71.4 [37.92; 104.88] | 42.9 [6.23; 79.57], 3 mo. |
| Storch et al. (2010)[c] | 56.6 [38.86; 74.34] | 53.3 [35.45; 71.15], 3 mo. |
| Weighted mean | 39.7 [15.42; 63.98] | 47.3 [24.53; 70.03] |

*Note.* FU = follow-up; mo. = months; wk. = weeks.
[a]Data based on pooled results of the initial treatment and the control group, who received the intervention after the waitlist period. [b]No separate remission rate available for follow-up, as parent interviews were included in the composite remission rate, reported in Table 4. [c]Remission rates also reported in Table 4 due to absence of child data. The study marked with '*' is an RCT with a waitlist control condition.

*Uncontrolled within-group remission rates in studies of treatment-resistant youth*

Remission data of the eight studies that exclusively focused on samples of youth for whom prior treatment was insufficient are displayed in Table B.2. Comparing within-group remission over time for these studies showed post-treatment remission rates ranging from 17.4 % to 56.6 %, with a weighted average of 30.8 % (5 treatment arms) after intensive treatment (Table B.2). At follow-ups (2 treatment arms), remission rate increased in one and decreased in the other study, ranging from 53.3 % to 100.0 %, with a weighted average of 58.8 %. The post-treatment and follow-up average weighted remission rates were lower for studies including youth for whom prior treatment was insufficient, compared to the main analyses including all sample types.

**Table B.2**
Remission of Clinical Status Over Time Within Intensive Conditions with Treatment-Resistant Youth.

| Study | Intensive group | |
|---|---|---|
| | Remission at post-treatment<br>Prop. [95 %-CI] | Remission at follow-up<br>Prop. [95 %-CI], period |
| Iniesta-Sepúlveda et al. (2018) | 33.3 [2.51; 64.09] | |
| Santucci et al. (2009)[a] | 50.0 [1.00; 99.00] | 100.0 [100.00; 100.00], 4 mo. |
| Storch et al. (2010)[b] | 56.6 [38.86; 74.35] | 53.3 [35.45; 71.15], 3 mo. |
| Storch et al. (2007) | 40.0 [−2.94; 82.94] | |
| Wolters et al. (2021), study 1 | 17.4 [8.45; 26.35] | |
| Weighted mean | 30.8 [12.06; 49.45] | 58.8 [35.40; 82.19] |

*Note.* CBT = cognitive behavioural therapy; DCS = DCS = d-cycloserine; FU = follow-up; mo. = months; PLBO = placebo; prop. = proportion; wk. = weeks.
[a]Based on composite ADIS clinician severity rating (CSR) score that integrates the child, parents, and clinician CSR scores, because no separate child score was available for follow-up. [b]Remission data based on parent interviews due to absence of child interviews.

*Comparing uncontrolled within-group remission rates in anxiety and OCD studies*

Remission data from three studies focussed exclusively on youth with anxiety disorders are shown in Table B.3. For youth with anxiety, post-treatment remission rates ranged from 50 % to 90 %, with a weighted average of 72.6 % (3 treatment arms). At follow-up (3 treatment arms), remission remained stable in one arm and increased in two, ranging from 83.3 % to 100 %, with a weighted average of 88.1 %.

The post-treatment and follow-up weighted remission averages were lower for OCD studies compared to those focused on anxiety disorders. Twelve studies focussed exclusively on youth with OCD are shown in Table B.3. Post-treatment remission rates for these studies ranged from 12.5 % to 80.5 %, with a weighted average of 50.7 % (12 treatment arms) after intensive treatment. At follow-up (8 treatment arms), remission remained stable in one study, increased in two, and decreased in five, with rates ranging from 37.5 % to 73.2 %, and a weighted average of 61.4 %.

**Table B.3**
Remission of Clinical Status Over Time Within Intensive Conditions with Youth with Anxiety Disorders.

| Study | Intensive group | |
|---|---|---|
| | Remission at post-treatment<br>Prop. [95 %-CI] | Remission at follow-up<br>Prop. [95 %-CI], period |
| Leyfer et al. (2019) (CBT + DCS) | 66.7 [47.84; 85.56] | 83.3 [68.38; 98.22], 3 mo. |
| Leyfer et al. (2019) (CBT + PLBO) | 90.0 [78.00; 102.00] | 90.0 [78.00; 102.00], 3 mo. |
| Santucci et al. (2009)[a] | 50.0 [1.00; 99.00] | 100.0 [100.00; 100.00], 4 mo. |
| Weighted mean | 72.6 [44.03; 101.24] | 88.1 [67.29; 108.87] |

*Note.* CBT = cognitive behavioural therapy; DCS = d-cycloserine; mo. = months; PLBO = placebo; prop. = proportion.
[a]Based on composite ADIS clinician severity rating (CSR) score that integrates the child, parents, and clinician CSR scores, because no separate child score was available for follow-up.

**Table B.4**
Remission of Clinical Status Over Time Within Intensive Conditions with Youth with OCD.

| Study | Intensive group | |
|---|---|---|
| | Remission at post-treatment<br>Prop. [95 %-CI] | Remission at follow-up<br>Prop. [95 %-CI], period |
| Adam et al. (2022) | 40.0 [3.71; 76.29] | 40.0 [3.71; 76.29], 3 mo. |
| Canavera et al. (2022) | 12.5 [−10.42; 35.42] | 37.5 [3.95; 71.05], 3 mo. |
| Iniesta-Sepúlveda et al. (2018) | 33.3 [2.51; 64.09] | |
| Petersen et al. (2022) | 33.3 [−20.03; 86.63] | |
| Riise et al. (2016) | 72.7 [54.08; 91.32] | 68.2 [48.74; 87.66], 6 mo. |
| Riise et al. (2018) | 80.5 [68.37; 92.63] | 73.2 [59.64; 86.76], 3 mo. |
| Storch et al. (2006)[a] | 71.4 [37.92; 104.88] | 42.9 [6.23; 79.57], 3 mo. |
| Storch et al. (2010)[a] | 56.6 [38.86; 74.35] | 53.3 [35.45; 71.15], 3 mo. |
| Storch et al. (2007) | 40.0 [−2.94; 82.94] | |
| Storch et al. (2007) | 75.0 [61.58; 88.42] | 65.0 [50.22; 79.78], 3 mo. |
| Wolters et al. (2021), study 1 | 17.4 [8.45; 26.35] | |
| Wolters et al. (2021), study 2 | 47.4 [24.95; 69.85] | 57.9 [35.70; 80.10], 3 mo. |
| Weighted mean | 50.7 [29.63; 71.74] | 61.4 [40.92; 81.85] |

*Note.* mo. = months; PLBO = placebo; prop. = proportion.
[a]Remission data based on parent interviews due to absence of child interviews. [b]Data based on pooled results of the initial treatment and the control group, who received the intervention after the waitlist period. [c]Based on composite ADIS clinician severity rating (CSR) score that integrates the child, parents, and clinician CSR scores, because no separate child score was available for follow-up.

## Appendix C. : Risk ratio analyses

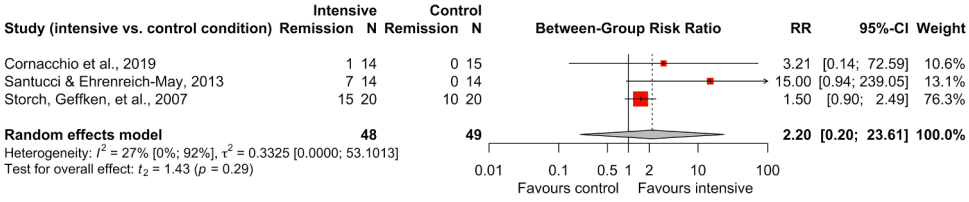


**Figure C.1.** Forest Plot Comparing Controlled Remission Risk at Post-Treatment Between Intensive and Control Groups.
*Note.* RR = risk ratio. Red squares sized proportionally to sample size. Horizontal lines indicate 95 % confidence interval. Cornacchio et al. (2019) data are based on parent instead of child reports. Cornacchio et al. (2019) and Santucci and Ehrenreich-May (2013) employed waitlist-control groups. Storch, Geffken, et al. (2007) employed an active control group.

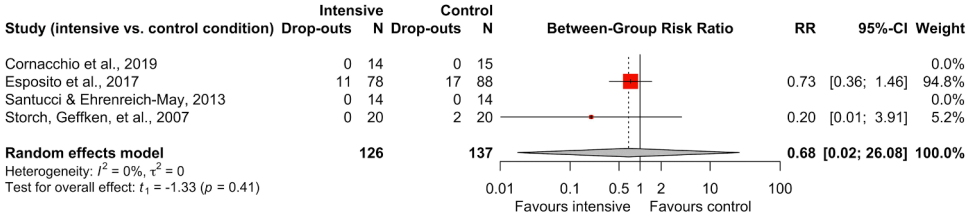


**Figure C.2.** Forest Plot Comparing Controlled Drop-Out Risk at Post-Treatment Between Intensive and Control Groups.
*Note.* RR = risk ratio. Red squares sized proportionally to sample size. Horizontal lines indicate 95 % confidence interval. Cornacchio et al. (2019) and Santucci and Ehrenreich-May (2013) employed waitlist-control groups. Esposito et al. (2017) and Storch, Geffken, et al. (2007) employed active control groups.

## Appendix D. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.janxdis.2024.102940.

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