

Routledge
Taylor & Francis Group

Eating Disorders

The Journal of Treatment & Prevention

ISSN: 1064-0266 (Print) 1532-530X (Online) Journal homepage: www.tandfonline.com/journals/uedi20

What works for whom? A systematic mapping review of psychological treatments for adults with longstanding anorexia nervosa

Louise Blackmore, Shelly Hindle & Liesje Donkin

To cite this article: Louise Blackmore, Shelly Hindle & Liesje Donkin (2026) What works for whom? A systematic mapping review of psychological treatments for adults with longstanding anorexia nervosa, Eating Disorders, 34:6, 553-598, DOI: 10.1080/10640266.2026.2707974

To link to this article: https://doi.org/10.1080/10640266.2026.2707974

© 2026 The Author(s). Published with license by Taylor & Francis Group, LLC.

View supplementary material

Published online: 04 Nov 2026.

Submit your article to this journal

Article views: 268

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=uedi20

EATING DISORDERS
2026, VOL. 34, NO. 6, 553–598
https://doi.org/10.1080/10640266.2026.2707974

Routledge
Taylor & Francis Group

OPEN ACCESS Check for updates

What works for whom? A systematic mapping review of psychological treatments for adults with longstanding anorexia nervosa

Louise Blackmore [a], Shelly Hindle [b], and Liesje Donkin [a]

[a]Department of Psychology and Neuroscience, School of Clinical Sciences, Auckland University of Technology, Auckland, New Zealand; [b]Independent Researcher, Auckland, New Zealand

ABSTRACT

Adults with longstanding anorexia nervosa (AN) present with diverse needs and variable responses to established interventions. While evidence-based treatments remain central to practice, outcomes are often modest, and relapse risk remains significant. Emerging therapies such as Dialectical Behaviour Therapy for Multi-Diagnostic Eating Disorders (MED-DBT) may address pervasive difficulties with emotion regulation and complexity commonly present for people who have not responded to first-line treatments; however, the diversity of treatments and limited empirical base make direct comparison challenging. We searched PsycINFO, MEDLINE, CINAHL, and Embase for studies published between 2005 and 2025 of psychological interventions for adults with longstanding AN. Any quantitative interventional design was included. Due to heterogeneity in study design, population definitions, and outcome measurements, a narrative mapping synthesis of models, treatment targets, and outcomes was completed rather than a quantitative comparison. Sixteen primary studies, predominantly case series and uncontrolled cohort study designs, were included. Across modalities, BMI and ED psychopathology frequently improved at post-intervention with mixed maintenance at follow-up, while general psychopathology showed inconsistent change. Results indicate that psychological treatments for longstanding AN are diverse, frequently integrative, and variably reported. Mapping models to treatment targets and maintaining factors may better support treatment matching than assuming interchangeability among "evidence-based" labels. Rigorous, adequately powered studies using consistent definitions, outcomes, and follow-up timepoints are needed to support confident, evidence-based recommendations.

Clinical Implications

- Therapies that target AN maintaining mechanism (e.g. MED-DBT, CBT-E) show benefit.

CONTACT Liesje Donkin Liesje.donkin@aut.ac.nz Department of Psychology and Neuroscience, School of Clinical Sciences, Auckland University of Technology, 90 Akoranga Drive, Northcote, Auckland, New Zealand
Supplemental data for this article can be accessed online at https://doi.org/10.1080/10640266.2026.2707974

© 2026 The Author(s). Published with license by Taylor & Francis Group, LLC.
This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

- Acute BMI/ED gains relapse without support, underscoring need for sustained care.
- Targeting mood/trauma is key for recovery with longstanding AN.

Introduction

Eating disorders (EDs) are serious psychiatric conditions with high morbidity, mortality, and societal costs (Treasure et al., 2020; van Hoeken & Hoek, 2020). Evidence-based treatments have modest effects in a substantial proportion of patients, and many experience relapse or chronicity (Miskovic-Wheatley et al., 2023; Sala et al., 2023; Solmi et al., 2024). As such, approximately 20% of individuals living with anorexia nervosa (AN) will develop a severe, complex, and longstanding illness (Keel & Brown, 2010; Kotilahti et al., 2020; Solmi et al., 2024), historically known as a "severe and enduring eating disorder" (SE-ED) or "severe and enduring AN" (SE-AN). These labels have been critiqued for their potentially stigmatising and prognostic implications (Broomfield et al., 2017), and there is no consensus on diagnostic criteria. Proposed criteria for SE-AN (Hay & Touyz, 2018) include a persistent state of dietary restriction with functional impairment, an illness duration of >3 years, and prior exposure to at least two evidence-based treatments. However, operational definitions across the literature vary considerably, with illness duration thresholds ranging from 3 to 10 years, and the relative emphasis on illness duration, treatment refractoriness, symptom severity, and clinical complexity differing between studies (Broomfield et al., 2017; Kotilahti et al., 2020). In this review, we use the term "longstanding AN" to describe presentations characterised by extended illness duration (≥7 years), often accompanied by treatment non-response and clinical complexity, while acknowledging that the construct encompasses dimensions of chronicity, severity, and complexity that may overlap but are not synonymous with one another.

Longstanding AN has been associated with more severe symptoms (Kotilahti et al., 2020; Marcolini et al., 2024), less improvement over time (Ambwani et al., 2020), more frequent hospitalisations, and poorer quality of life (de Vos et al., 2022; Easdale-Cheele et al., 2024; Lavender et al., 2015; Treasure et al., 2015). While the literature acknowledges these burdens, there is no consensus on what constitutes a longstanding presentation (Broomfield et al., 2017; Hay & Touyz, 2018). Common operational criteria include a persistent illness (Hay & Touyz, 2018) lasting more than 3–7 years and a lack of sufficient response to at least 1–2 empirically based treatments (Hay & Touyz, 2018; Kotilahti et al., 2020). Complexity is another recognised factor (Reay et al., 2022). Though not commonly defined, complexity may encompass multi-diagnostic presentations, therapy-interfering behaviours, and emotion regulation deficits—all of which standard ED treatments are not equipped to deal with (Federici & Wisniewski, 2025). Treatment difficulties may be

compounded by frequent medical complications and psychiatric risk, which redirect focus to assessing and stabilising risk or safety (Frostad & Bentz, 2022) and can be associated with poorer outcomes, treatment dropout, or treatment termination due to a lack of improvement (Blackburn et al., 2024; Russell et al., 2019; Vinchenzo et al., 2022). As such, longstanding presentations are often characterised by symptom chronicity, vulnerability to treatment dropout or failure, and comorbidity, making standard ED treatment protocols less effective (Murray et al., 2019).

Given these complexities, there is growing consensus that longstanding presentations may require adapted, transdiagnostic, and multimodal psychological interventions that address emotion dysregulation, interpersonal difficulties, and maladaptive coping rather than symptom reduction alone (Kotilahti et al., 2020; The Lancet, 2020). Dialectical behaviour therapy (DBT) was originally developed for borderline personality disorder but has been adapted for a range of conditions, including EDs (Ben-Porath et al., 2020; Vogel et al., 2021). Evidence has shown that DBT-based interventions can reduce bulimia nervosa and binge eating behaviours (Lammers et al., 2020; Safer et al., 2010), although evidence for effectiveness in treating severe, longstanding ED presentations remains limited (Ben-Porath et al., 2020).

MED-DBT (Multi Diagnostic Eating Disorders–DBT; Federici & Wisniewski, 2025) is a specialised adaptation of DBT for individuals with longstanding, severe EDs and complex presentations such as those with co-occurring borderline personality disorder, trauma-related disorders and self-harm (Ben-Porath et al., 2020; Federici & Wisniewski, 2013; Wisniewski & Ben-Porath, 2015). People with longstanding and complex presentations often exhibit difficulties with emotion regulation, emotional suppression and avoidance (Christensen & Haynos, 2020), and poor interoceptive awareness (Nowakowski et al., 2013), which is linked to both emotion regulation and interpersonal difficulties (D'andrea et al., 2022; Löffler et al., 2018; Monteleone et al., 2021), aligning with the core mechanisms targeted by DBT (Leppanen et al., 2022; Treasure & Schmidt, 2013). Recent qualitative (McColl et al., 2024) and case series data (Donkin et al., 2025; Federici & Wisniewski, 2013) suggest that MED-DBT can generate meaningful change in individuals for whom conventional ED treatments have failed, including improved emotion regulation, reduced self-harm, and enhanced quality of life. Although MED-DBT is increasingly used in specialist ED services (Donkin et al., 2025), its empirical base remains limited to small studies, making it essential to contextualise the theoretical and clinical contributions of MED-DBT relative to other models.

Several systematic reviews have explored treatment options for people with longstanding EDs (Kotilahti et al., 2020; Marcolini et al., 2024; Zhu et al., 2020, 2023). However, the evidence base demonstrates notable heterogeneity in terms of study design (Kotilahti et al., 2020; Marcolini et al., 2024), as is often common with emerging evidence. As such, there is a need to broaden

the review scope beyond randomised controlled trials. However, comparing treatment outcomes with existing evidence-based treatments hinges on the assumption that all treatments operate equivalently—both in terms of who they are most useful for and in their mechanisms of change. Even when outcomes appear equivalent, this does not imply equivalent mechanisms of change or equivalent outcomes for all. Nonetheless, once a treatment has gained empirical support, it is often used as clinically interchangeable with other evidence-based treatments, with the choice of treatment modality often determined by service availability or therapist assignment rather than by matching client characteristics to treatment type. This approach risks losing clinically meaningful information about who benefits from a treatment, under what conditions, and why (Kotilahti et al., 2020; Marcolini et al., 2024).

Thus, the purpose of this systematic review is to map the current evidence base for psychological interventions for longstanding AN and to situate treatments, including MED-DBT, according to their structure, intended populations, theoretical assumptions, and proposed mechanisms of change. This review aims to: (i) systematically map and describe the current evidence on psychological treatments for longstanding AN, (ii) identify gaps in the research field for this population, and (iii) provide a narrative overview of these treatments and their treatment targets as a preliminary step towards answering the question of what might work for whom. Given the heterogeneity of the evidence base, this review does not seek to make definitive comparative claims, but rather to organise and characterise the available evidence to inform future research and clinical practice.

Method

This mapping review is reported in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement guidelines (Page et al., 2021). The review was pre-registered with PROSPERO (CRD420251245862).

Search strategy

The search strategy was developed by LB and LD in consultation with SH. Initial pilot searches were undertaken to refine the search strategy. Broadly, the search combined clinical terminology (e.g., “eating disorder”, “anorexia nervosa”) with terms pertaining to presentations (e.g., “longstanding”, “complex”), and psychological treatments (e.g., “psychotherapy”, “behaviour therapy”). A full list of search terms can be found in Multimedia Appendix I. The search was run on PsycINFO (via Ovid), MEDLINE (via PubMed), CINAHL (via EBSCO), and Embase (via Ovid) and was restricted to between 2005 and 2025, with no restrictions based on language or publication type. Reference

lists of included papers were searched for studies that met the inclusion criteria.

Rayyan (https: //www.rayyan.ai/) was used to de-duplicate, manage, and screen references. Two blinded reviewers (LD, LB) independently screened titles and abstracts for potential eligibility and completed full-text screening. Conflicts were resolved through discussion between LB and LD; where ambiguity remained, SH independently reviewed those papers for eligibility and discussions were held until consensus was reached.

Eligibility criteria

For detailed inclusion and exclusion criteria, see Table 1. Given the limited research in this space, quantitative interventional studies of any design were included. Qualitative studies, grey literature, and follow-up studies where participants underwent treatment during adolescence were excluded. Aligned with Kotilahti et al. (2020), we opted for a conservative illness duration of 7 years or greater to operationally define longstanding presentations. This threshold was selected as the most frequently used duration criterion in the SE-AN literature and represents a balance between capturing chronicity while reducing the risk of including individuals earlier in their treatment trajectory. We recognise that "longstanding AN" is a multidimensional construct; accordingly, studies were also included if the sample was characterised by marked clinical complexity (e.g., multi-diagnostic presentations, refractoriness, significant comorbidity), even when individual illness characteristics may have varied within the sample. Only samples that met the criteria were included; subgroup data were extracted where available. Finally, an intervention was defined as any psychologically based intervention likely to allow replication, with a clear framework, manual, or protocol underpinning treatment decisions. There were no restrictions by treatment context (e.g., inpatient or outpatient) or geographic region.

Data extraction

Data were extracted by two independent reviewers (LB, LD) according to a pre-defined extraction template. Where conflicts arose, the article was rechecked and the conflict was resolved through discussion until consensus. Extracted data included information on study eligibility, study details (e.g., year, author, design), study methods (e.g., statistical analysis), intervention details (e.g., setting, components, duration), participant details (e.g., demographic, diagnosis), outcome measures (e.g., timing of administration, scales used), results, funding, and conflicts of interest noted. Due to the heterogeneity of study design and reporting, no quantitative analysis was undertaken.

Table 1. Inclusion and exclusion criteria.

	Included	Excluded
Study design	• Quantitative studies of any design, such as randomised controlled trials, non-randomised studies of interventions (e.g., cohort studies, case-control studies), case series, and case reports • Follow-up studies of included studies (the primary study will be included if not conducted within the specified period)	• Qualitative studies • Grey literature such as conference proceedings or dissertations • Follow-up studies where participants underwent treatment during adolescence
Condition	• ED duration of ≥7 years (or mean sample ED duration of ≥7 years); OR • ED is defined in the study as severe and enduring/complex/multi-diagnostic; OR • Previous first-line treatment was not successful.	• Presentation is defined as "severe" without a duration or complexity component • There is not sufficient information to determine the complexity, severity, or duration of the presentation
Population	• Adults (all participants: >18 years) of any gender; AND • AN presentation meets criteria for being longstanding and complex.	• Participants < 18 years • ED diagnoses other than AN (e.g., bulimia, ED not otherwise specified without AN specified).
Intervention	• A clear psychological framework that would allow replication, such as having a protocol or manual underpinning treatment; AND • The psychological framework/intervention aims to target the ED behaviour.	• Eclectic interventions without clear theoretical basis • Medical, nutrition, or pharmacological-only interventions • Interventions where the ED is not a primary treatment target • Tools used to enhance psychological therapy • The psychological therapy is undefined or unspecified.
Outcome	• ED outcomes are reported (e.g., BMI or psychometrics)	• No ED outcomes are reported

Risk of bias assessment

Risk of bias (RoB) of the included studies was assessed by two independent reviewers (LB, LD). No studies were excluded based on RoB. As this review mapped current treatments rather than completing an effectiveness comparison, RoB assessment is not reported in-text but can be found in Multimedia Appendix II.

Results

Study selection

The systematic search returned 4,847 articles, of which 784 were identified as duplicates and removed. Titles and abstracts of 4,063 articles were screened for eligibility. Full texts were screened for 167 articles, of which 19 articles were included, comprising three secondary analyses (Abd Elbaky et al., 2014; Le Grange et al., 2014; Stiles-Shields et al., 2013) and 16 primary studies (see Table 2). The most frequent reasons for exclusion were an ineligible sample or lack of information to determine sample eligibility ($n = 103$), ineligible or poorly defined interventions ($n = 19$), and a lack of measures that would

Table 2. Overview of included studies.

Modality	Study	Design	Setting	Intervention description	Included sample characteristics *Sample size* *Mean age in years (SD)* *Sex*	Clinical characteristics *Mean baseline BMI (SD) kgm^{-2}* *Diagnosis*	Inclusion eligibility *Mean illness duration in years (SD)* *Co-morbidity* *Prior ED treatment*
ACT	Berman et al. (2009)	Case series	Outpatient -university clinic	2x/weekly individual sessions; 17 individual sessions plus up to 2 optional family sessions (total 17–19 sessions). Approx. 8–10 weeks of tx	*N* = 3 *n*=3 Age: *Mdn*=24 (range 24–56) Sex: 3/3 (100%) female	BMI: *Mdn*=18.7 (range 18.6–19.1) Dx: 3/3 (100%) AN/ subthreshold AN; all previously met full AN criteria	ED duration: 12-~20, with one NR Complexity: all had serious medical complications as a result of AN Prior tx: all history of prior AN tx
Schema-informed CBT	Allen et al. (2025)	Case series	Outpatient—specialist ED service	1/week individual sessions (*M*=32, 10.28, range 22–55); mixed delivery (in person and online). Proposed ~9 months duration	*N* = 11 *n*=11 Age: 31.6 (10.1, range 21–55) Sex: 11/11 (100%) female	BMI: 17.4 (2.0, range 14.0–20.8) Dx: 6/11 (54.5%) AN-R, 4/11 (36.4%) AN-B/P, 1/11 (9.1%) AAN	ED duration: NR Complexity: 11/11 (100%) had prior mental health tx of some kind. 8/11 (72.7%) had at least one formally diagnosed comorbid condition Prior tx: most (*n*=8/11; 72.7%) had day or inpatient tx at least once; 11/11 (100%) completed at least one prior evidence-based tx for ED
Intensive CBT-E	Calugi et al. (2017)	Cohort study	Inpatient—specialist ED unit	13 weeks inpatient +7 weeks day hospital. Individual CBT-E–based sessions; CBT-E–based group sessions; dietician-assisted eating with progressive caloric increase (≈1500–2500 kcal/day) aiming for 1–1.5 kg/week weight gain, continued until BMI ≥ 18.5 kg/m^2; transition to outpatient ED services post-discharge	*N* = 66 *n*=32 (subgroup with ED duration > 7 years) Age: 29.4 (5.6) Sex: 31/32 (96.9%) female	BMI: 15.2 (2.0) Dx: 32/32 (100%) AN	ED duration: 12.3 (4.7) Complexity: presence of features that make outpatient ED tx inappropriate (e.g., BMI < 14, marked medical complications, significant suicide risk, and/or marked interpersonal difficulties) Prior tx: 27/32 (84.4%) recent tx "failure"

(*Continued*)

Table 2. (Continued).

Modality	Study	Design	Setting	Intervention description	Included sample characteristics *Sample size* *Mean age in years (SD)* *Sex*	Clinical characteristics *Mean baseline BMI (SD) kgm^{-2}* *Diagnosis*	Inclusion eligibility *Mean illness duration in years (SD)* *Co-morbidity* *Prior ED treatment*
Intensive CBT-E	Dalle Grave et al. (2020)	Cohort study	Inpatient—specialist ED unit	13 weeks inpatient +7 weeks day hospital. Individual sessions 2x/week for 4 weeks then 1x/week; CBT-E-based groups 4×/week; dietician-assisted eating until BMI ≥ 18.5 (or age equivalent); optional 20 outpatient CBT-E individual sessions post-discharge.	*N* = 155 *n*=81 (adult subgroup) Age: 30.6 (11.6, range 20–58) Sex: 76/81 (93.8%) female	BMI: 15.1 (2.3, range 9.0–18.4) Dx: 81/81 (100%) AN	ED duration: 12.2 (9.7, range 1–31) Prior tx: All responded poorly to previous outpatient tx
CBT-E; CBT-E + EMDR	Rossi et al. (2024)	Quasi–experimental	Outpatient–university clinic at two sites	40 sessions of CBT-E (1–2×/week early phase, dietetic and psychiatric monitoring). Then for patients with childhood maltreatment, 20–25 EMDR sessions or others 20–25 sessions of further CBT-E	*N* = 142 *n* = 75(early trauma groups) but data published for completers (*n* = 57) only (CBT-E *n* = 40; CBT-E +EMDR *n* = 17) Age: CBT-E 25.54 (9.78); CBT-E +EMDR 25.12 (11.40) Sex: 57/57 (100%) female	BMI: CBT-E 16.82 (1.36); CBT-E +EMDR 16.97 (1.80) Dx: 57/57 (100%) AN; CBT-E 29 (72.5%) AN-B/P; CBT-E +EMDR 12 (70.6%) AN-B/P	ED duration: CBT-E- 8.52 (9.93); CBT-E+EMDR 9.39 (10.43) Complexity: hx of moderate/severe childhood maltreatment
CBT (multi-modal)	Schlegl et al. (2014)	Cohort study	Inpatient—specialist ED unit	CBT-based multimodal treatment: ED-specific group (9 × 100-min); general psychotherapy groups up to 3×/week; 1–2/week individual CBT sessions; plus social skills, art, cooking, exercise. Mean length of stay ~92 days (range 6–260).	*N*=435 Age: 26.36 (9.02, range 18–70) Sex: 435/435 (100%) female	BMI: 14.56 (1.74, range 9.69–17.48) Dx: 316/435 (72.6%) AN-R; 111/435 (25.5%) AN B/P; 8/435 (1.8%) AN subtype NR	ED duration: 8.84 (7.81, range 1–50) Complexity: comorbid dx reported for sample Prior tx: inpatient *M* (*SD*)=1.86 (2.45, range 0–15); outpatient *M* (*SD*)=1.73 (1.57, range 0–9)

(*Continued*)

Table 2. (Continued).

Modality	Study	Design	Setting	Intervention description	Included sample characteristics *Sample size* *Mean age in years (SD)* *Sex*	Clinical characteristics *Mean baseline BMI (SD) kgm^{-2}* *Diagnosis*	Inclusion eligibility *Mean illness duration in years (SD)* *Co-morbidity* *Prior ED treatment*
CBT-AN; SSCM	Touyz et al. (2013), with secondary analyses (Abd Elbaky et al., 2014; Le Grange et al., 2014; Stiles-Shields et al., 2013)	Randomised controlled trial	Outpatient—specialist ED clinic at university	CBT-AN and SSCM, re-oriented to QoL and harm minimisation rather than weight normalisation. 30 (~weekly) individual sessions over 8 months.	*N*=63 (CBT-AN *n* = 31; SSCM *n* = 32) Age: whole sample 33.4 (9.6, range 20–62); CBT-AN 34.6 (9.0); SSCM 32.3 (10) Sex: 63/63 (100%) female	BMI: whole sample 16.2 (1.3, range 11.8–18.5); CBT-AN 16.3 (1.3); SSCM 16.1 (1.4) Dx: whole sample 47 (74.6%) AN-R; CBT-E 23 (74.2%) AN-R; SSCM 24 (75.0%) AN-R	ED duration: CBT-AN group 17.7 (7.5); SSCM group 15.5 (9.3) Complexity: 22/63 (35%) mood disorder; 20/63 (31.7%) generalised anxiety disorder; 16/63 (25.4%) social phobia; 6/63 (9.5%) obsessive–compulsive disorder; 1/63 (1.6%) substance dependence
Emotion-focused therapy; Schema therapy	Oldershaw et al. (2024)	Mixed-phase intervention development and feasibility study	Outpatient—two specialist ED services	~40 weekly individual sessions (9–12-months) integrating emotion-focused therapy and schema therapy across five phased modules; dietetic and medical monitoring.	*N* = 42 *n*=34 (data published for completers only) Age: 28.7 (7.9) Sex: 33/34 (97.0%) female	BMI: AN 17.2 (0.7, *n* = 21), AAN 19.2 (2.0, *n* = 13) Dx: 21/34 (61.7%) AN (underweight at admission); 13/34 (38.3%) AAN	ED duration: 9.0 (7.9) Complexity (*n* = 32): 14 (43.8%) lifetime self-harm/ suicidal ideation; high proportion with depression/ anxiety/ stress in severe range Prior tx (*n* = 32): 26 (80.3%) previous psychological tx; 5 (15.6%) prior ED inpatient admission
DBT	Brown et al. (2018)	Cohort study	Partial hospitalisation programme and intensive outpatient—university clinic	PHP: 6–10 hr/day, up to 6 days/week with supervised meals/snacks. Followed by IOP: 4 hr/day, 3–5 days/week. Full DBT protocol (skills groups, individual DBT, phone coaching, consultation team); groups drawing on RO-DBT, CBT-E, ACT, nutrition, goal-setting; dietetic and psychiatric support.	*N* = 243 *n*=49 (subgroup with ED duration > 7 years) Age: NR for subgroup Sex: NR for subgroup	BMI: NR for subgroup Dx: AN-spectrum AN-R *n* = 21 (26.9% of wider AN-R group) AN-B/P *n* = 28 (62.2% of wider AN-B/P group)	ED duration: All participants in subgroup > 7 years Complexity: NR for subgroup, but any comorbid disorder for wider AN-R group 68/79 (86.1%); wider AN-B/P group 45/46 (97.8%)

(*Continued*)

Table 2. (Continued).

Modality	Study	Design	Setting	Intervention description	Included sample characteristics *Sample size* *Mean age in years (SD)* *Sex*	Clinical characteristics *Mean baseline BMI (SD) kgm^{-2}* *Diagnosis*	Inclusion eligibility *Mean illness duration in years (SD)* *Co-morbidity* *Prior ED treatment*
DBT	Kröger et al. (2010)	Cohort study	Inpatient—specialist university BPD unit	3-month inpatient DBT programme (individual sessions weekly, skills groups 3×/week, mindfulness/emotion regulation/distress tolerance/ interpersonal effectiveness) with added ED-specific CBT module: daily self-monitoring, supervised meals, weekly weighing, structured meal plans, psychoeducation, behavioural exposure, contingency management for weight gain (target 700 g/ week)	*N* = 24 *n*=9 (AN subgroup) Age: NR for subgroup Sex: 9/9 (100%) female	BMI: 16.71 (1.05) Dx: 5/24 (20.8%) AN-B/P; 4/24 (16.7%) AN-R	ED duration: NR Complexity: comorbid BPD diagnosis Prior tx: all previous ED tx "failure"
MED-DBT	Donkin et al. (2025)	Case series	Residential, intensive outpatient, and outpatient —specialist ED service	Full MED-DBT protocol. 1/week individual DBT and 2.5 hr DBT skills group (48 sessions/ 12 months), 24-hr phone-coaching, and DBT consultation team; ED-focused CBT-E integrations, dietetics, and medical monitoring	*N*=16 Age: 26.6 (5.9, range 19–38) Sex: 16/16 (100%) female	BMI: 17.2 (2.6, range 14.9–20.3) Dx: AN-B/P 10 (62.5%); AN-R 6 (37.5%)	ED duration: 11.54 (5.4, range 4–22) Complexity: *M* = 3.6 (1.45) comorbid psychiatric diagnoses Prior tx: all patients had multiple prior tx
MED-DBT	Federici and Wisniewski (2013)	Case series	Day tx programme and intensive outpatient—specialist ED treatment centre	DTP 6 hr/day × 5 days/week then/ or IOP 3 h/day × 3–5 days/week across 6 months. Full DBT protocol. 1/week individual DBT and DBT skills groups. DBT consultation team, phone coaching. ED-specific CBT components (meal supervision/ accountability, food exposure, contingency management, weight stabilisation).	*N* = 7 *n*=4 Age: 25.0 (4.08, range 22–31) Sex: 4/4 (100%) female	BMI: 16.95 (0.60, range 16.4–17.8) Dx: 3/4 (75.0%) AN-B/P; 1/4 (25.0%) AN-R	ED duration: 11.75 (6.60, range 4–19) Complexity: all had significant comorbidities on DSM Axis I and Axis II Prior tx: 7.0 (3.56, range 3–10) previous tx

(*Continued*)

Table 2. (Continued).

Modality	Study	Design	Setting	Intervention description	Included sample characteristics *Sample size* *Mean age in years (SD)* *Sex*	Clinical characteristics *Mean baseline BMI (SD) kgm^{-2}* *Diagnosis*	Inclusion eligibility *Mean illness duration in years (SD)* *Co-morbidity* *Prior ED treatment*
RO-DBT	Isaksson et al. (2021)	Case series	Outpatient—specialist ED clinic at university	40-week programme. 6-week engagement (sessions 1x/week for weeks 1–2, then 2×/week) focusing on normalising eating/starting weight gain). Then 30-week 1x/week skills and individual therapy phase, then 8 weeks of fortnightly sessions. Optional outpatient meal support (max 16 days) offered to 3 patients.	*N*=13 Age: *Mdn* age interval: 18–25 years Sex: 13/13 (100%) female	BMI: 17.5 (0.84; range 16.2–19.5) Dx: 12/13 (92.3%) AN; 1/13 (7.7%) AAN	ED duration: *Mdn*: 10 (range 1–27) Complexity: 1–3 current comorbid diagnoses per participant
Mixed	Long et al. (2012)	Cohort study	Inpatient—specialist ED unit	~15 weeks of multidisciplinary tx: structured refeeding with observed meals (progressing by weight-linked phases); CBT individual and group sessions; dynamic psychotherapy; behavioural management of purging and excessive exercise; dietetics; occupational and body-oriented therapies; family/social interventions	*N*=34 Age: *M* = 33 years (range 18–57) Sex: 34/34 (100%) female	BMI: 14.06 (1.25) Dx: 10/34 (29.4%) AN-R; 24 (70.6%) AN-B/P	ED duration: 13 (8.64; range 4–34) Complexity: all displayed characteristics of a "chronic" disorder and BMI under 17.5; 12/34 (35.28%) hx of self-harm; 6/34 (17.64%) hx of suicide attempts Prior tx: 13/34 (38.2%) no previous inpatient admissions; 15/34 (44.1%) one admission for ED; 6/34 (17.6%) more than one previous admission; 2/34 (5.9%) had no previous outpatient ED tx
Past reality integration	Wesselius et al. (2020)	Case series	Outpatient—community	Outcomes reported on after ~11 individual sessions with wide variation	*N* = 13 *n*=8 Age: *M* = 24.4 (range 18–43) Sex: 8/8 (100%) female	BMI: 15.5 kgm^{-2} (1.56) Dx: 8/8 (100%) AN	ED duration: NR Complexity: early childhood trauma Prior tx: prior clinical tx unsuccessful or worsened symptoms
Schema therapy	Simpson et al. (2010)	Case series	Outpatient—specialist ED service	Closed group. 20 × 2 hr weekly group sessions, with the last two sessions fortnightly	*N* = *8* *n*=1 Age: 28 Sex: NR	BMI: 17.9 Dx: 1/8 (12.5%) AN-B/P	ED duration: 15

Note: Where only part of a study's sample met eligibility criteria, descriptive statistics were recalculated by the review authors from published individual-participant data. Unless otherwise specified, mean and standard deviation are reported. Where appropriate, or the mean and SD are unavailable, median and range are reported. *N* = whole sample size, *n* = sample size of eligible subgroup, *M*=mean, *Mdn*=median, *SD* = standard deviation, Tx = treatment, ED = eating disorder, AN = anorexia nervosa, AN-R = anorexia nervosa restricting subtype, AN-B/P = anorexia nervosa binging/purging subtype, AAN = atypical anorexia nervosa, BMI = body mass index, NR = not reported, Dx = diagnosis, Tx = treatment, Hx = history, ACEs = adverse childhood experiences, DSM=Diagnostic and Statistics Manual of Mental Disorders, BPD = Borderline personality disorder, ACT = Acceptance and commitment therapy, CBT = cognitive behaviour therapy, CBT-E = Enhanced cognitive behaviour therapy, DBT = Dialectical behaviour therapy, RO-DBT = Radically open dialectical behaviour therapy, SSCM=Specialist supportive clinical management, EMDR = Eye movement desensitisation and reprocessing, MED-DBT = Multi-diagnostic eating disorder dialectical behaviour therapy, QoL = quality of life.

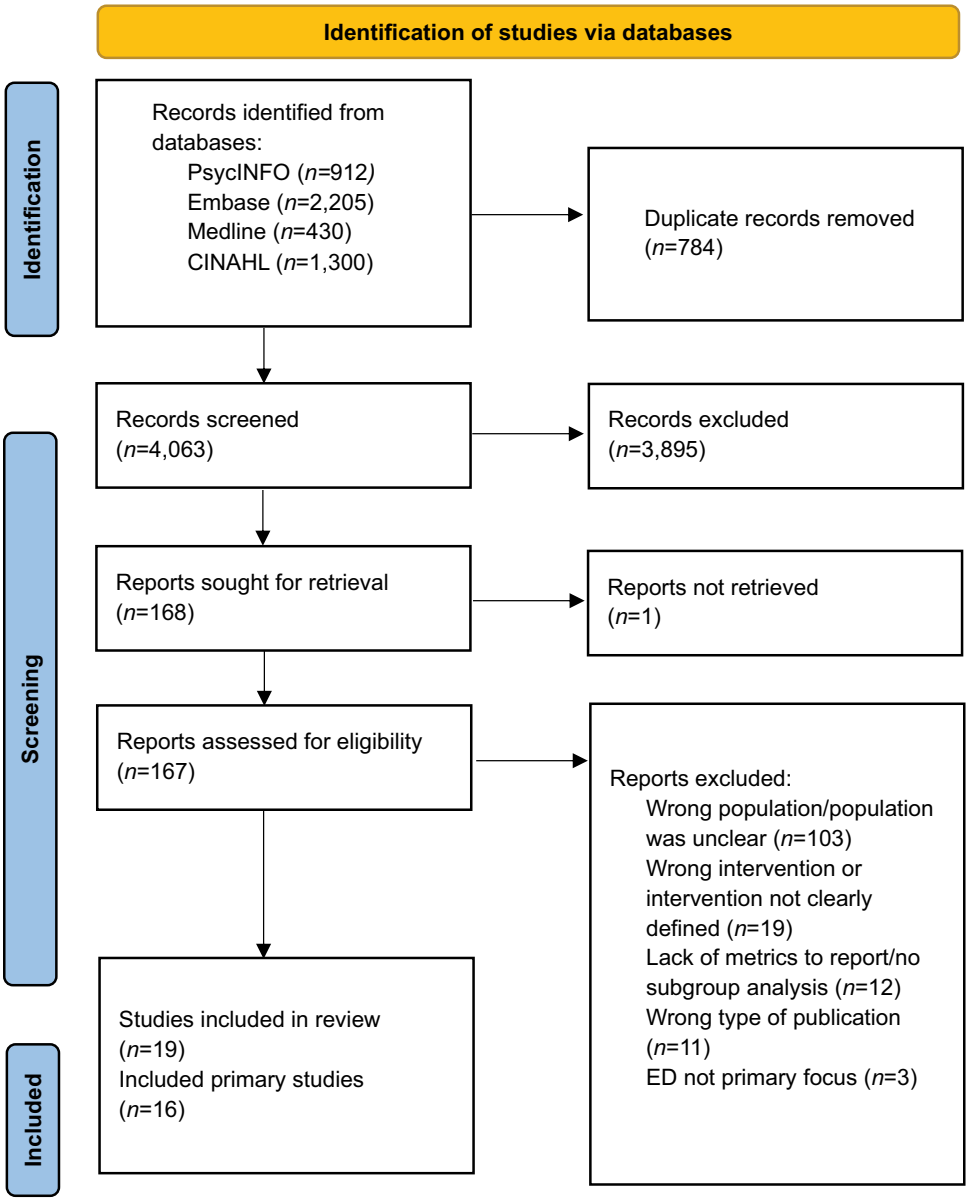

Figure 1. PRISMA flow diagram.

allow meaningful data extraction or no subgroup analysis for eligible participants (n = 12). See Figure 1 for the study selection process.

Study characteristics

The most common study design was case series (n = 7; Allen et al., 2025; Berman et al., 2009; Donkin et al., 2025; Federici & Wisniewski, 2013; Isaksson et al., 2021; Simpson et al., 2010; Wesselius et al., 2020). Six of the included

studies were cohort studies (Brown et al., 2018; Calugi et al., 2017; Dalle Grave et al., 2020; Kröger et al., 2010; Long et al., 2012; Schlegl et al., 2014), and the remaining studies were a randomised controlled trial (Touyz et al., 2013), a quasi-experimental trial (Rossi et al., 2024), and a mixed-phase intervention development and feasibility study (Oldershaw et al., 2024).

All studies collected data at baseline and post-intervention, except for one study where data were reported while treatment was still ongoing (Wesselius et al., 2020). Six studies reported data at one subsequent follow-up timepoint (Berman et al., 2009; Brown et al., 2018; Isaksson et al., 2021; Kröger et al., 2010; Long et al., 2012; Simpson et al., 2010) and three at two timepoints (Calugi et al., 2017; Dalle Grave et al., 2020; Touyz et al., 2013). For studies of completed treatments (n = 15), the most common time intervals between baseline and the post-intervention timepoint (the treatment duration) were 13 (n = 3) and 20 (n = 3) weeks, with a mean duration of 27.93 weeks (Mdn = 20, range 8.5–60). Among the nine studies reporting follow-up data, the mean length of time from post-intervention to the first follow-up timepoint was 55.44 weeks (Mdn = 26, mode = 26, range 20–208), and the mean length of time from the post-intervention timepoint to the last follow-up timepoint was 65.67 weeks (Mdn = 52, mode = 52, range 26–208). Both means are inflated by Long et al. (2012) whose follow-up occurred 4 years after discharge. Excluding this study, the corresponding means were 36.38 and 47.88 weeks respectively.

Participants

The total number of participants across all studies was n = 1,275 (at study commencement), with full sample sizes ranging from n = 3 (Berman et al., 2009) to n = 435 (Schlegl et al., 2014). In eight of the 16 included studies, only a subset of the full sample met eligibility criteria (Brown et al., 2018; Calugi et al., 2017; Dalle Grave et al., 2020; Federici & Wisniewski, 2013; Kröger et al., 2010; Rossi et al., 2024; Simpson et al., 2010; Wesselius et al., 2020). As such, 876 of recruited participants were deemed eligible and included in the review. Sample sizes for eligible groups of participants ranged from n = 1 (Simpson et al., 2010) to n = 435 (Schlegl et al., 2014), with a mean sample size of n = 54.75 (Mdn = 24).

Most studies (n = 11) contained only female participants in the eligible sample groups, with three studies containing participants identifying as a different gender (Calugi et al., 2017; Dalle Grave et al., 2020; Oldershaw et al., 2024) and two not reported (Brown et al., 2018; Simpson et al., 2010). Where participant age range was reported, the highest age was 70 years (Schlegl et al., 2014). The available mean age of eligible participants fell between 24.4 (range 18–43; Wesselius et al., 2020) and 34.6 (SD = 9.0, CBT-AN group; Touyz et al., 2013) years.

In 11 studies, the eligible sample groups contained only participants with typical or underweight AN, with or without amenorrhea (Calugi et al., 2017;

Dalle Grave et al., 2020; Donkin et al., 2025; Federici & Wisniewski, 2013; Kröger et al., 2010; Long et al., 2012; Rossi et al., 2024; Schlegl et al., 2014; Simpson et al., 2010; Touyz et al., 2013; Wesselius et al., 2020). One of the 11 was a case series (Simpson et al., 2010) that included four eligible participants with atypical AN in the broader sample, but these participants were excluded as it was not clear which of the participants these were. The other five studies (Allen et al., 2025; Berman et al., 2009; Brown et al., 2018; Isaksson et al., 2021; Oldershaw et al., 2024) had transdiagnostic samples of both participants with AN and participants with subthreshold or atypical AN. For one study (Brown et al., 2018), data from AN-R and AN-B/P subgroups with longstanding illness duration were used; however, a related secondary analysis paper (Brown et al., 2020) was not able to be included because no equivalent subgroup data were reported.

Illness duration was reported in 13 studies (Berman et al., 2009; Brown et al., 2018; Calugi et al., 2017; Dalle Grave et al., 2020; Donkin et al., 2025; Federici & Wisniewski, 2013; Isaksson et al., 2021; Long et al., 2012; Oldershaw et al., 2024; Rossi et al., 2024; Schlegl et al., 2014; Simpson et al., 2010; Touyz et al., 2013) and (where reported) ranged from 1 year (Dalle Grave et al., 2020; Isaksson et al., 2021; Schlegl et al., 2014) to 50 years (Schlegl et al., 2014). Mean illness duration (where reported) ranged from 8.52 (*SD* = 9.9, CBT-E group; Rossi et al., 2024) to 17.7 (*SD* = 7.5, CBT-AN group; Touyz et al., 2013) years. Baseline BMI ranged from 9.0 kgm^{-2} (Dalle Grave et al., 2020) to 20.8 kgm^{-2} (Allen et al., 2025). The lowest mean baseline BMI reported was 14.06 kgm^{-2} (*SD* = 1.25) in Long et al. (2012) and the highest mean baseline BMI reported was 19.2 kgm^{-2} (*SD* = 2.0) for the atypical AN subgroup in Oldershaw et al. (2024).

Reporting of complexity and comorbidity varied. Seven studies reported specific comorbid diagnoses (Allen et al., 2025; Berman et al., 2009; Brown et al., 2018; Federici & Wisniewski, 2013; Kröger et al., 2010; Schlegl et al., 2014; Touyz et al., 2013), two reported number of comorbidities (Donkin et al., 2025; Isaksson et al., 2021), and the remaining six studies reported in narrative format or only reported results from psychometrics (Calugi et al., 2017; Dalle Grave et al., 2020; Long et al., 2012; Oldershaw et al., 2024; Rossi et al., 2024; Simpson et al., 2010). Self-harm and suicide variables were reported in only three studies, two of which were only available as a baseline characteristic of the sample (Long et al., 2012; Oldershaw et al., 2024). Only one study (Federici & Wisniewski, 2013) provided detailed pre- and post-intervention data on self-harm outcomes in the sample, using the Deliberate Self-Harm Inventory (DSHI; Gratz, 2001) to capture the number of episodes and report on changes in self-harm and suicide outcomes. Additionally, it should be noted that three of the included studies excluded participants with acute suicide risk (Calugi et al., 2017; Oldershaw et al., 2024; Schlegl et al., 2014).

The Eating Disorder Examination (EDE; Fairburn & Cooper, 1993) or Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994) was widely used (n = 13) to measure ED psychopathology. Three studies (Kröger et al., 2010; Long et al., 2012; Schlegl et al., 2014) used versions of the Eating Disorder Inventory (EDI; Garner et al., 1983) instead. All but one study (Wesselius et al., 2020) measured other psychosocial outcomes in addition to BMI and ED-related psychopathology.

Description of interventions

CBT was the most common treatment modality: five studies utilised CBT-based treatments (Calugi et al., 2017; Dalle Grave et al., 2020; Rossi et al., 2024; Schlegl et al., 2014; Touyz et al., 2013) and another six incorporated CBT-E components into their treatments (Allen et al., 2025; Brown et al., 2018; Donkin et al., 2025; Federici & Wisniewski, 2013; Kröger et al., 2010; Long et al., 2012). Five studies utilised DBT-based approaches to target emotion regulation challenges (Brown et al., 2018; Donkin et al., 2025; Federici & Wisniewski, 2013; Isaksson et al., 2021; Kröger et al., 2010), two of which offered MED-DBT (Donkin et al., 2025; Federici & Wisniewski, 2013). One of the DBT studies offered radically-open DBT (RO-DBT), targeting an over-controlled orientation (Isaksson et al., 2021). Variations of schema therapy were used in three studies (Allen et al., 2025; Oldershaw et al., 2024; Simpson et al., 2010), one of which was a modification of CBT (Allen et al., 2025) and another of which drew from both schema- and emotion-focused therapy (Oldershaw et al., 2024). Two studies targeted trauma or early life experiences, utilising eye movement desensitisation and reprocessing (EMDR; Rossi et al., 2024) or past reality integration therapy (PRI; Wesselius et al., 2020) to treat ED psychopathology. The remaining studies utilised specialist supportive clinical management (SSCM; Touyz et al., 2013), a mix of modalities in a manualised manner (Long et al., 2012), and acceptance and commitment therapy (ACT; Berman et al., 2009).

Eight studies reported interventions in outpatient settings of lower intensity (Allen et al., 2025; Berman et al., 2009; Isaksson et al., 2021; Oldershaw et al., 2024; Rossi et al., 2024; Simpson et al., 2010; Touyz et al., 2013; Wesselius et al., 2020). Three interventions were offered as inpatient programmes (Kröger et al., 2010; Long et al., 2012; Schlegl et al., 2014), two consisted of inpatient care followed by day-hospital treatment (Calugi et al., 2017; Dalle Grave et al., 2020), two offered day-hospital treatment followed by intensive outpatient treatment (Brown et al., 2018; Federici & Wisniewski, 2013), and one offered a mix of settings and levels of intensity (Donkin et al., 2025). Twelve studies were of interventions offered through specialist ED services (Allen et al., 2025; Brown et al., 2018; Calugi et al., 2017; Dalle Grave et al., 2020; Donkin et al., 2025; Federici & Wisniewski, 2013; Isaksson et al., 2021; Long et al., 2012; Oldershaw et al., 2024; Schlegl et al., 2014; Simpson et al., 2010; Touyz et al.,

2013). One intervention was offered through a unit that specialised in borderline personality disorder treatment (Kröger et al., 2010). Where studies reported completion for eligible samples ($n = 14$), 75.18% ($n = 618$) of all participants completed treatment with a mean study treatment completion rate of 84.54% ($Mdn = 85.5\%$, range 61.53–100).

Two studies (Rossi et al., 2024; Touyz et al., 2013) examined two distinct interventions (Rossi et al., 2024: CBT-E, CBT-E+EMDR; Touyz et al., 2013: CBT-AN, SSCM), each of which is considered separately in the synthesis.

Synthesis of results

For an overview of the theoretical underpinnings and treatment targets of each therapy and study outcomes, see Tables 3 and 4, respectively.

DBT

Three of the five DBT studies were case series: two of MED-DBT (Donkin et al., 2025; Federici & Wisniewski, 2013) and one of RO-DBT (Isaksson et al., 2021). Two DBT studies followed a cohort study design (Brown et al., 2018; Kröger et al., 2010). Sample sizes of eligible groups ranged from $n = 4$ (Federici & Wisniewski, 2013) to $n = 49$ (Brown et al., 2018). One study (Isaksson et al., 2021) did not report diagnostic subtype, but, across the remaining DBT participants ($n = 78$), $n = 32$ (41.02%) fell on the AN-R spectrum and $n = 46$ (58.97%) fell on the AN-B/P spectrum.

RO-DBT was offered for 40 weeks and was the only DBT-based treatment offered on a purely outpatient basis (Isaksson et al., 2021). Both MED-DBT studies offered varying levels of treatment intensity: either moving between residential, intensive outpatient, and outpatient treatment over a 12-month period (Donkin et al., 2025), or receiving either intensive outpatient treatment or day-hospital care followed by intensive outpatient treatment over a 6-month period (Federici & Wisniewski, 2013). The two remaining DBT studies offered treatment over an average of approximately 13 weeks and involved either a version of DBT adapted for inpatient treatment with an optional CBT for EDs module (Kröger et al., 2010) or a DBT-based partial hospitalisation programme followed by intensive outpatient treatment (Brown et al., 2018). All treatments involved core DBT components of individual therapy, group skills training, weekly consultation for therapists, and after-hours skills coaching via telephone (Brown et al., 2018; Donkin et al., 2025; Federici & Wisniewski, 2013; Isaksson et al., 2021) or through on-site nurse support (Kröger et al., 2010). All programmes offered dietetic or meal support. All programmes but outpatient RO-DBT (Isaksson et al., 2021) offered medical monitoring, CBT for ED integrations such as self-monitoring, and supplementary groups, either focused on reinforcing DBT skills (Brown et al., 2018;

Table 3. Overview of key components of included therapies.

Core treatment model & Foundational Text	Primary theoretical orientation	Conceptual framework/mechanism of change	Core treatment targets	Modes of delivery	Intended population
Acceptance and Commitment Therapy (ACT; Heffner & Eifert, 2004)	Contextual behavioural therapy	Change is conceptualised as increased psychological flexibility through acceptance of internal experiences and engagement in values-consistent behaviour	Experiential avoidance; psychological inflexibility; values-based action	Individual therapy	Adults with longstanding EDs and prior treatment exposure
CBT-E (Fairburn, 2008)/ Intensive CBT-E (Dalle Grave, 2012)	Cognitive-behavioural therapy	Anorexia nervosa is conceptualised as being maintained by overvaluation of weight, shape, and control alongside associated cognitive and behavioural processes; change is targeted through systematic modification of beliefs and behaviours	Overvaluation of weight, shape, and control; associated cognitive and behavioural processes	Individual therapy. Outpatient or adapted intensive formats	Adults with AN; first-line outpatient treatment; adaptations sometimes used in complex or longstanding cases
Dialectical Behaviour Therapy (DBT; Linehan, 1993)	Dialectical behavioural therapy	Change is conceptualised as arising from the synthesis of acceptance and behaviour change strategies targeting Mindfulness, emotion regulation, distress tolerance, and behavioural skills.	Emotion dysregulation; life-threatening and therapy-interfering behaviours; quality-of-life interfering behaviours	Individual therapy; group skills training; between-session coaching; consultation team	High-risk, complex, and treatment-refractory populations; high service use; comorbid personality pathology
Emotion-Focused therapy (Rice & Elliott, 1996)	Humanistic and experiential	Change is theorised to occur through increased emotional awareness, processing, and transformation of maladaptive emotional responses	Emotional processing; shame; self-criticism; relational distress	Individual therapy	Adults with AN, including severe and enduring presentations
Multi-Diagnostic Eating Disorders DBT (MED-DBT; Federici & Wisniewski, 2025)	Integrative DBT-based ED treatment	MED-DBT integrates comprehensive DBT with CBT for EDs: change is conceptualised as arising from improved emotion regulation, including increased emotional awareness, and targeting treatment-interfering behaviours, reduced cognitive and behavioural rigidity, and setting broad goals beyond ED recovery.	Emotion dysregulation; life-threatening ED behaviours; treatment-interfering behaviours; comorbidity	Individual therapy; group skills training; coaching; consultation team	Adults with severe, enduring, complex, and treatment-refractory EDs

(*Continued*)

Table 3. (Continued).

Core treatment model & Foundational Text	Primary theoretical orientation	Conceptual framework/mechanism of change	Core treatment targets	Modes of delivery	Intended population
Past Reality Integration (PRI; Bosch, 2012)	Trauma-informed integrative psychotherapy	ED behaviours are conceptualised as conditioned survival responses; change occurs through experiential processing and integration of past emotional learning	Early adverse experiences; conditioned emotional responses; maladaptive coping	Individual therapy	Adults with longstanding EDs and high trauma burden
Radically-Open DBT (RO-DBT; Lynch, 2018)	Transdiagnostic adaptation of DBT that targets excessive self-control and social difficulties	RO-DBT conceptualises EDs as characterised by excessive self-control ("overcontrol"), including inhibitory emotional expression, cognitive rigidity, social signalling deficits, and hyper-detail-focused processing.	Maladaptive overcontrol; emotional inhibition; social isolation; rigid and perfectionistic responding; reduced reward-sensitivity; deficits in social signalling	Individual therapy; skills training classes; therapist consultation team	Adults with disorders characterised by maladaptive overcontrol, including AN, chronic or treatment-resistant presentations, and individuals with marked rigidity, emotional inhibition, and social disconnection
Schema Therapy (Young et al., 2006)/ Schema-informed CBT	Integrative cognitive–behavioural and schema theory	ED behaviours are conceptualised as coping responses to maladaptive schemas; change occurs through schema awareness, emotional processing, and corrective interpersonal experiences	Early maladaptive schemas; entrenched cognitive–emotional and interpersonal patterns	Individual or group therapy	Adults with chronic or treatment-resistant EDs
Specialist Supportive Clinical Management (SSCM; McIntosh et al., 2006)	Pragmatic clinical management with supportive psychotherapy	SSCM does not articulate a formal theorised mechanism of change; it combines structured clinical management of ED behaviours with supportive, client-led psychotherapy	Normalised eating; improved quality of life; client-chosen goals	Individual therapy	Adults with AN; frequently used comparator treatment in trials

Table 4. Reported outcomes of included studies.

				BMI		ED psychopathology			Psychometrics			Recovery Status	ROB
Modality	Study	Timepoints	n	Outcomes M (*SD*) kgm^{-2}	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size		
ACT	Berman et al. (2009)	BL T1: 8–9w (PI) T2: +52w FU	3	[a]BL: 18.8 (0.22, range 18.6–19.1) T1: 18.93, (0.37, range 18.5–19.4) T2: 19.2 (0.46, range 18.7–19.6)	No significant mean weight increase in the treatment phase for any participant	EDE-Q G[a]	BL: Mdn 1.35 (range 1.18–4.08) T1: 1.72 (0.6, range 0.97–2.44) T2: 1.69, (1.49, range 0.63–3.8)	No group inferential tests.	SCL-90 GSI[a]	BL: 61.67 (1.70, range 60–64) T1: 53.67 (5.79, range 46–60) T2: 53 (3.74, range 49–58)	Not analysed	One participant who was amenorrhoeic resumed menses	M
CBT + Schema	Allen et al. (2025)	BL T1: ~ 32w (PI)	11	BL: 17.4 (2.0) T1: 17.77 (2.42)	$d = 0.15$	EDE-Q G	BL: 4.49 (1.48) T1: 3.39 (2.07)	$d = -0.53$ $d = 0.57$	YSQ-SF	Ratings across 18 schemas	Ranged from d=-0.66 (Failure, Abandonment) to $d = 0.07$ (Entitlement)	T1: 4/10 (40%) ended with EDE-Q in the non-clinical range 2/10 (20%) shifted from clinical range = to non-clinical. Binge eating stopped in 1/3 (others reduced); self-induced vomiting stopped in 1/3 (another reduced); laxative misuse stopped in 2/3; driven exercise stopped in 3/4	M
									SMI-ED-SF	Ratings across 12 schemas	Ranged from d=-1.30 to $d = 0.8$		
									CORE-10	BL: 2.44 (0.67) T1: 1.94 (0.87)	$d = -0.57$		
I CBT-E	Calugi et al. (2017)	BL T1: 20w (PI) T2: +26w FU T3: +52w FU	32	BL: 15.2 (2.0) T1: 19.1 (1.6) T2: 18.4 (1.8) T3: 17.8 (1.9)	RM ANOVA time effect $p < .001$ Increased initially (linear term b = 23.43, $t = 19.21$, $p < .01$), then showed curvature over time (quadratic b = −34.39, $t = -14.77$, $p < .01$; cubic b = 13.78, $t = 12.25$, $p < .01$)	EDE G n(%)	BL: 3.8 (1.1) T1: 1.4 (1.0) T2: 1.5 (1.2) T3: 1.8 (1.3) BL: Binge Episodes 16 (50.0%) Self-induced vomiting 17 (53.1%) Laxative misuse 15 (46.9%) Excessive exercise 19 (59.4%)	RM ANOVA time effect $p < .001$	BSI GSI	BL: 2.0 (0.8) T1: 0.8 (0.7) T2: 1.1 (0.8) T3: 1.1 (0.7)	RM ANOVA time effect $p < .001$	Good BMI outcome based on treatment completers ($n = 27$): (BMI ≥ 18.5) T1: 85.2% T2: 51.9% T3: 40.7% Full response (BMI ≥ 18.5 and minimal ED psychopathology (EDE global < 1 SD above community mean): T1: 63.0% T2: 40.7% T3: 33.3%	H

(*Continued*)

Table 4. (Continued).

				BMI		ED psychopathology			Psychometrics			Recovery Status	ROB
Modality	Study	Timepoints	n	Outcomes M (*SD*) kgm^{-2}	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size		
I CBT-E	Dalle Grave et al. (2020)	BL: T1: 20w (PI) T2: +20w FU T3: +60w FU	81	BL: 15.1 (0.2) T1: 19.9 (0.1) T2: 19.7 (0.2) T3: 18.6 (0.3)	RM ANOVA. Time effect; pairwise: baseline < EOT, 20 wk, 60 wk; EOT > 60 wk; 20 wk > 60 wk. MEM confirmed an initial increase with deceleration during follow-up. MEM: significant initial increase (linear term) with deceleration during follow-up (quadratic/cubic), all $p < .05$.	EDE-Q G	BL: 3.9 (0.1) T1: 1.7 (0.1) T2: 1.3 (0.1) T3: 1.7 (0.1)	RM ANOVA time effect for EDE-Q Global and all subscales ($p < .001$.) Across global and all subscales: significant decreases during treatment (linear), followed by deceleration at T2 and a small increase by T3: (pattern varies slightly by subscale: All $p < .05$)	BSI GSI	BL: 2.2 (0.1)[b] T1: 0.9 (0.1) T2: 0.9 (0.1) T3: 1.1 (0.2)	RM ANOVA time effect ($p < .001$) Mixed effects models: significant decrease during treatment with deceleration/ slight drift over follow-up, all $p < .05$	Good BMI outcome (BMI ≥ 18.5) T1: 62/71 (87.3%), T2: 38/53 (71.7%), T3: 24/36 (66.7%) Full response (BMI ≥ 18.5 and EDE-Q Global < 2.77) T1: 50/71 (70.4%) T2: 35/53 (66.0%), T3: 20/36 (55.6%).	H
									CIA	BL: 36.1 (1.0) T1: 14.8 (1.6) T2: 12.4 (1.9) T3: 17.1 (3.9)	RMANOVA: time effect ($p < .001$) MEM: significant decrease during treatment with deceleration and slight increase by 60 weeks, all $p < .05$.		
CBT-E	Rossi et al. (2024)	BL T1: ~40w (40 sessions) T2: ~60w (20–25 sessions)	40	BL: 16.82 (1.36) T1: 17.03 (1.93) T2: 18.13 (2.01)	LMM (random intercept). BL–T1: ns. BL–T2: significant within group improvement (b = 0.94, $p < .01$).	EDE-Q G	BL: 4.26 (1.11) T1: 4.07 (0.91) T2: 3.20 (1.72)	LMM BL–T1: ns. BL–T2: decrease (b=–1.15, $p < .001$).	SCL-90-R	BL: 1.95 (0.52) T1: 1.92 (0.54) T2: 1.64 (0.93)	LMM BL–T1: ns; BL–T2: ns.		/H
									DES-II	BL: 33.60 (16.89) T1: 37.57 (15.93) T2: 26.43 (21.00).	BL–T1: ns; BL–T2: ns.		
CBT	Schlegl et al. (2014)	BL T1: *M* ~ 13w (range ~1-~37w; PI)	435	BL: 14.56 (1.74) T1: 17.18 (1.86)	ANOVA F = 24.77, df=(1), *p*=<.001 ES = 1.51	EDI-2 G	BL: 313.69 (62.85) T1: 262.00 (66.42)	ANOVA F = 42.95, df=(1), *p*=<.001 ES = 0.82	BSI GSI	BL: 1.33 (0.70) T1: 0.76 (0.57)	ANOVA F = 32.19, df=(1), *p*=<.001 ES = 0.82	Not reported	H
									BDI-II Total	BL: 28.53 (11.60) T1: 13.97 (11.24)	ANOVA F = 52.49, df=(1), *p*=<.001 ES = 1.26		

(*Continued*)

Table 4. (Continued).

				BMI		ED psychopathology			Psychometrics			Recovery Status	ROB
Modality	Study	Timepoints	n	Outcomes M (*SD*) kgm^{-2}	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size		
CBT-AN	Touyz et al. (2013)	BL: T1: ~ 35w (PI) T2: ~ +26w FU T3: ~+52w FU	31	BL: 16.3 (1.3) T1: 16.8 (1.5) T2: 16.6 (1.4) T3: 17.0 (1.7)	Within-arm change (Std ES): T1: 0.42* T2: 0.24 (ns) T3: 0.50* p < .05. Between-arm: no differences at any timepoint.	EDE G	BL: 3.0(1.4) T1: 1.7 (1.1) T2: 1.7 (1.1) T3: 1.5 (1.1)	Within-arm ES: T1: 0.85***; T2: 0.84***; T3: 1.04***. Between-arm: at T3: CBTAN < SSCM ($F^{1,57}$ = 8.90, p = .004, η^2p = .135)	WSAS Total	BL: 16.0 (10.4) T1: 12.4 (9.9) T2: 9.3 (4.9) T3: 11.7 (7.4)	Within-arm ES: T1: 0.34 (ns) T2: 0.64*** T3: 0.41 ×. Between-arm: at T2: CBT-AN better ($F^{1,57}$ = 4.51, p = .038, η^2p = 0.073)—not confirmed in sensitivity analyses.	Not reported	SC/ L
						EDQOL Total	BL: 1.7 (0.7) T1: 1.2 (0.8) T2: 1.1 (0.5) T3: 1.2 (0.7)	Within-arm ES: T1: = 0.73***; T2: = 0.88***; T3: = 0.84***. Between-arm: No sig. differences at any timepoint (ITT GLM with covariates).	BDI-II Total	BL: 22.6 (13.6) T1: 14.1 (12.2) T2: 13.1 (7.9) T3: 14.9 (11.3)	Within-arm ES: T1: =0.62**; T2: =0.70***; T3: =0.56**. Between-arm: No differences at any timepoint. Baseline: SSCM worse (BDI: $F^{1,5,9}$ = 5.99, p = .017).		
									SF-12	MCS BL: 34.2 (13.2) T1: 40.2 (11.1) T2: 39.9 (8.7) T3: 37.8 (9.8) PCS BL: 50.9 (8.0) T1: 48.3 (8.4) T2: 51.6 (5.7) T3: 51.0 (6.9)	SF-12 MCS (mental) T1: 0.46* T2: 0.43* T3: 0.28 SF-12 PCS T1: −0.32 T2: 0.09 T3: 0.01		

(*Continued*)

Table 4. (Continued).

				BMI		ED psychopathology			Psychometrics			Recovery Status	ROB
Modality	Study	Timepoints	n	Outcomes M (*SD*) kgm^{-2}	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size		
CBT + EMDR	Rossi et al. (2024)	BL T1: ~40w (40 sessions) T2: ~60w (20–25 sessions)	17	BL: 16.97 (1.80) T1: 17.18 (1.79) T2: 19.69 (1.59)	LMM. BL–T1: ns. BL–T2: significant; greater BMI gain vs CBT only (Time×Group: b = 1.40, $p < .05$).	EDE-Q G	BL: 4.33 (1.45) T1: 4.23 (1.63) T2: 1.97 (1.87)	LMM BL–T1: ns. BL–T2: significant; greater reduction vs CBT only (Time×Group: b=−1.34, $p < .05$)	SCL-90-R DES-II	BL: 2.20 (0.67) T1: 2.12 (0.81) T2: 1.22 (0.86). BL: 38.16 (18.68) T1: 38.57 (16.93) T2: 18.42 (12.21)	LMM BL–T1: ns; BL–T2: reduction (Time×Group: b=−0.65, $p < .01$). BL–T1: ns; BL–T2: reduction (Time×Group: b=−11.60, $p < .05$).		S/H
DBT	Brown et al. (2018)	BL: T1: *M* = 13w (PI) T2: *M*=~+50w (*SD*=~23w, range ~11-~123w)	49	NR		EDE-Q G	NR		BDI-II STAI Trait	NR NR		T1: full remission (normal BMI, no behaviours, EDE-Q global scores within 1SD of community means): AN-R with ED duration > 7y 7/21 (33.33%) AN-B/P with ED duration > 7y 4/28 (14.29%) T2: full remission AN-R with ED duration > 7y 2/21 (9.52%) AN-B/P with ED duration > 7y 3/28 (10.71%) T1: partial remission (normal BMI, no behaviours, EDE-Q global scores outside 1SD of community means) AN-R with ED duration > 7y 1/21 (4.76%) AN-B/P with ED duration > 7y 1/28 (3.57%) T2: partial remission: AN-R with ED duration > 7y 1/21 (4.76%) AN-B/P with ED duration > 7y 2/28 (7.14%)	H

(*Continued*)

Table 4. (Continued).

				BMI		ED psychopathology			Psychometrics			Recovery Status	ROB
Modality	Study	Timepoints	n	Outcomes M (*SD*) kgm^{-2}	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size		
DBT	Kröger et al. (2010)	BL T1: 13w (PI) T2: +65w FU	9	BL: 16.71 (1.05) T1: 17.78 (1.90) T2: 18.45 (1.99)	Fisher's permutation test BL-T1: (p = .125) BL-T2: (p = .032)	EDI-SI	BL: 108.56 (11.74) T1: 94.33 (19.68) T2: 92.22 (22.94)	Fisher's permutation test (paired). BL-T1: p = .008 (sig). BL-T2: p = .05	SCL-90-R	BL: 1.56 (0.74) T1: 1.16 (0.61) T2: 1.01 (0.64)	Hotelling's T^2 BL-T1: ns BL-T2: p = .01	T2: 3/8 (37.5%) recovered; 4/8 (50%) crossed to BN; 1/8 (12.5%) remained in AN weight range. 1/8 lost to follow-up.	H
MED-DBT	Donkin et al. (2025)	BL T1: 52w (PI)	10 (Completers; C) 6 (Non-completers; NC)	C BL: *Mdn*=16.95 (range 15.8–19.5) T1: *Mdn*=18.61 (range 15.6–20.3) Change score +1.265 (4.88) NC BL: *Mdn*=17.03 (range 14.9–20.3) T1: *Mdn*=16.25 (range 14.34–17.29) Change score: −0.580 (3.57)	T1: U = 3.0, p = .005 Change scores: U = 6.0, p = .019	EDE-Q G	C BL: 4.64 (range 4.09–5.75) T1: 3.49 (range 2.5–4.98) Change score: −1.12 (3.03) NC (n = 5/6); BL: 3.0 (range 2.2–5.65) T1: 3.0 (range 2.9–5.1) Change score: 0.00 (0.83)	T1: U = 24.0, p = .953, r = .03 T1: Change score: U = 47.5, p = .003, r = .718	DERS	C BL: *Mdn*=115.5 (range 107–142) T1: *Mdn*=103.50 (range 75–132) Change score: −11.5 (49) NC (n = 5/6) BL: *Mdn*=105.0 (range 100–124) T1: *Mdn*=122.0 (range 104–141) Change score: 0.0 (22.0)	T1: U = 5.0, p = .089, r = .54 T1: Change score: U = 8.571, p = .007, r = .751	Two pregnancies after completing the full programme	M

(*Continued*)

Donkin et al., 2025; Federici & Wisniewski, 2013) or education about weight and eating (Kröger et al., 2010).

Where reported, all studies observed improvements in BMI outcomes following the intervention. Among treatment completers, mean BMI of participants in the single study of RO-DBT (Isaksson et al., 2021) increased from 17.5 kgm^{-2} (*SD* = 0.84) at baseline to 19.14 kgm^{-2} (*SD* = 1.43) at post-intervention and then increased again to 19.55 kgm^{-2} (*SD* = 1.63) at follow-up. For MED-DBT studies, Federici and Wisniewski (2013) reported an increase in mean BMI from 16.95 kgm^{-2} (*SD* = 0.60) at baseline to 18.13 kgm^{-2} (*SD* = 0.73) post-intervention while in Donkin et al. (2025), the median BMI for MED-DBT treatment completers (*n* = 10) increased from 16.95 kgm^{-2} (range 15.8–19.5) to 18.61 kgm^{-2} (range 15.6–20.3) following 12 months of treatment. Comparatively, non-completers (*n* = 6) showed a negative change in BMI over the 12-month period, with median BMI falling from 17.03 kgm^{-2} (range 14.9–20.3) to 16.25 kgm^{-2} (range 14.34–17.29).

For broader DBT programmes, Kröger et al. (2010) reported a mean BMI of 16.71 kgm^{-2} (*SD* = 1.05) at baseline, which increased to 17.78 kgm^{-2} (*SD* = 1.90) following the 3-month inpatient treatment and again to 18.45 kgm^{-2} (*SD* = 1.99) at 15-month follow-up, but remained marginally within the underweight range. Brown et al. (2018) did not report standalone BMI outcomes for the subgroup of patients with illness duration > 7 yrs. However, 38.1% of patients with longstanding AN-R (*n* = 8) and 17.85% of patients with longstanding AN-B/P (*n* = 5) achieved any (full or partial) remission at discharge, as defined by a BMI > 18.5 kgm^{-2} and abstinence from fasting, bingeing, or purging in the last 28 days. At follow-up, this reduced to 14.28% (*n* = 3) for patients with longstanding AN-R, but was maintained for patients with longstanding AN-B/P (*n* = 5, 17.85%).

Improvements in ED psychopathology were observed across all studies. For MED-DBT treatment completers in Donkin et al. (2025), EDE-Q global scores improved significantly after 12 months, compared to no difference for non-completers. Similarly, in Isaksson et al. (2021), all participants who completed RO-DBT treatment (*n* = 8) showed a reliable change in EDE-Q global scores, whereas only one of four RO-DBT non-completers did. At follow-up, 75% of treatment completers (*n* = 6) remained in remission (defined as BMI > 18.5 kgm^{-2} and EDE-Q global scores within 1 SD of community means). In Kröger et al. (2010), scores on the EDI symptom index showed significant reductions at post-intervention and again at follow-up. Again, standalone data on ED psychopathology was not available for the longstanding subgroup in Brown et al. (2018), but, of the patients who achieved any post-intervention remission (AN-R *n* = 8; AN-B/P *n* = 5), most (AN-R *n* = 7; AN-B/P *n* = 4) achieved full remission, which (alongside the BMI outcome) involved both abstinence from ED behaviours (as reported by the EDE-Q) and EDE-Q global scores within 1 SD of community means. These numbers reduced to full remission for *n* = 2

Table 4. (Continued).

				BMI		ED psychopathology			Psychometrics			Recovery Status	ROB
Modality	Study	Timepoints	n	Outcomes M (*SD*) kgm^{-2}	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size		
									DASS-21	C DASS-D BL: *Mdn*=13.0 (range 6–21) T1: *Mdn*=9.0 (range 6–18) Change score: −1.5 (20.0) NC (*n* = 5/6) BL: *Mdn*=17.0 (range 6–19) T1: *Mdn*=17.0 (range 10–21) Change score: 0.0 (2.0) DASS-A C BL: *Mdn*=12.5 (range 3–18) T1: *Mdn*=10.0 (range 6–16) Change score: −2.5 (11.0) NC (*n* = 5/6) BL: *Mdn*=10.0 (range 1–15) T1: *Mdn*=10.0 (range 4–20) Change score: 0.0 (5.0) DASS-S C BL: *Mdn*=16.5 (range 5–20) T1: *Mdn*=7.0 (range 9–13) Change score: −5.0 (30.0) NC (*n* = 5/6) BL: *Mdn*=13.0 (range 3–19) T1: *Mdn*=14.0 (range 14–20) Change score: 0.0 (7.0)	T1: U = 44.0, *p* = .019, *r* = .608 Change score: U = 40.0, *p* = .075, *r* = .47 T1: U = 28.5, *p* = .679, *r* = .112 Change score: U = 42.0, *p* = .040, *r* = .541 T1: U = 37.0, *p* = .165, *r* = .384 Change score: U = 41.0, *p* = .055, *r* = .511		

(*Continued*)

Table 4. (Continued).

				BMI		ED psychopathology			Psychometrics			Recovery Status	ROB
Modality	Study	Timepoints	n	Outcomes M (*SD*) kgm^{-2}	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size		
MED-DBT	Federici and Wisniewski (2013)	BL T1: 26w (PI)	4	BL[a]: 16.95 (0.60, range 16.4–17.8) T1: 18.13 (0.73, range 17.4–18.8)	Not analysed	EDE-Q[a] (behavioural items)	Days restricting: BL: 28.00 (0.00) T1: 11.50 (12.48) Binge episodes: BL: 0.25 (0.50) T1: 1.50 (3.00). Self-induced vomiting ($n = 3$): 2 abstinent at T1. Excessive exercise: BL: $M = 22.25$ (25.59, range 0–56) T1: $M = 1.25$ (0.96, range 0–2).	Not analysed	DSHI[a]	BL: 9.50 (8.27) T1: 7.50 (15.0) 3/4 (75.0%) abstinent from suicidal/NSSI acts in the month before discharge	Not analysed	Medical stability at discharge in 3/4; hospitalisations reduced from 11 in the year pre-programme to 5 during the 6 month tx period (4 due to one patient).	M
RO-DBT	Isaksson et al. (2021)	BL T1: 40w (PI; range 38–43w completers; 10–33w non-completers) T2: +26w FU	13	BL: 17.5 (0.84) T1: 19.14 (1.43) T2: 19.55 (1.63)	RCI: BMI ($z = 0.23$), reliable change: 11/12 who were underweight at BL. Completers: reliable change obtained by 7/7 who were underweight	EDE-Q G	BL: 3.78 (0.84) T1: 1.95 (1.14) T2: 1.38 (0.77)	RCI: EDE-Q (z=0.74), reliable change for 9 participants. Completers: 8/8 obtained reliable change.	BBQ	BL: 38.46 (21.54) T1: 53.30 (19.89) T2: 62.88 (17.55)	Not calculated	T1: 8/13 (61.5%) full remission 4/13 (30.8%) partial remission, 1/13 (7.7%) deteriorated. T2: 6/13 (46%) in full remission.	M
						CIA	BL: 28.85 (9.27) T1: 17.10 (13.11) T2: 12.75 (7.57)	Not calculated	SSPS	BL: 33.46 (10.94) T1: 36.60 (6.98) T2: 42.75 (6.41)	Not calculated		
Past reality integration	Wesselius et al. (2020)	BL T1: ~11 sessions (tx ongoing)	8	BL: 15.5 (1.56) T1: 17.5 (2.35)		EDE-Q G	BL: 5.0 (0.88) T1: 2.48 (1.58)						H
Schema	Simpson et al. (2010)	BL T1: 10w (mid-tx) T2: 20w (PI) T3: ~+26w FU	1	BL: 17.9 T1: NR T2: NR T3: NR	Not analysed	EDE-Q G	NR	Not analysed	YSI-L2; HADS Shame scale; EQ-VAS	NR	Not analysed	NR	M
Mixed	Long et al. (2012)	BL T1: ~14.5w (PI) T2: +208w FU	34	BL: 14.06 (1.25) T1: 19.52 (1.27) T2: 19.61 (2.22)	BL–T1: significant (authors report significance; t not printed)	EDI	Drive for Thinness: BL: 14.44 (4.60)—T1: 8.12 (3.95)—T2: 4.62 (3.41). Bulimia: BL: 8.74 (5.26)—T1: 1.85 (2.17)—T2: 1.59 (2.91). Body Dissatisfaction: BL: 16.32 (6.65)—T1: 11.06 (5.32)—T2: 7.34 (4.51). Ineffectiveness: BL: 12.65 (7.19)—T1: 7.79 (5.14)—T2: 5.34 (4.21). Interpersonal Distrust: BL: 7.06 (4.93)—T1: 5.47 (4.35)—T2: 2.88 (2.73). Interoceptive Awareness: BL: 11.09 (7.33)—T1: 6.18 (4.64)—T2: 4.34 (5.63). Perfectionism: BL: 7.47 (4.38)—T1: 6.71 (4.77)—T2: 5.81 (4.69). Maturity Fears: BL: 6.38 (6.67)—T1: 3.06 (2.98)—T2: 2.75 (2.84).	Paired t-tests (repeated measures): BL–T1: significant for most subscales (e.g., Drive for Thinness $t = 7.03$, $p < .001$; Bulimia $t = 8.59$, $p < .001$; Body Dissatisfaction $t = 4.68$, $p < .001$; Ineffectiveness $t = 4.85$, $p < .001$; Interoceptive Awareness $t = 4.79$, $p < .001$). Discharge–Follow-up significant where reported (e.g., Drive for Thinness $t = 4.44$, $p < .001$; Body Dissatisfaction $t = 3.09$, $p < .001$; Interpersonal Distrust $t = 2.87$, $p < .05$). Authors adopted a stricter α to control Type I error.	BSI GSI	BL: 1.67 (0.69) T1: 0.91 (0.36) T2: 0.85 (0.61)	Paired t-tests (repeated measures): BL–T1: $t = 6.24$, $p < .001$ (significant). T1–T2: ns. at total sample level	T2: (≈4 y) remission: 17/32 remitted (2 lost to follow-up); remission defined via MRAS plus BMI > 18, ABOS < 19, and no binge/purge/laxatives in prior 2 months. MRAS improved BL–T1: ($t = -12.39$, $p < .001$; RCI = 2.47) and T1–T2: ($t = -4.79$, $p < .001$; RCI = 1.12).	H

(*Continued*)

Table 4. (Continued).

				BMI		ED psychopathology			Psychometrics			Recovery Status	ROB
Modality	Study	Timepoints	n	Outcomes M (*SD*) kgm^{-2}	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size		
Schema + EFT (SPEAKS)	Oldershaw et al. (2024)	BL T1: 13w T2: 26w T3: 39w T4: 52w (PI)	34	AN ($n = 21$): BL: 17.2 (0.7) T1: 17.9 (1.1) T2: 18.1 (1.6) T3: 18.3 (1.9) T4: 18.9 (2.1) AAN ($n = 13$): BL: 19.2 (2.0) T1: 20.4 (2.2) T2: 20.0 (1.4) T3: 20.2 (1.4) T4: 21.3 (1.6)	Single-arm feasibility; completer analyses GLM (time fixed effect): BL–T4: z = 3.41, 95% CI 0.70–2.60, $p = .001$	EDE-Q G	BL: 4.1 (1.11) T1: 3.7 (1.2) T2: 3.4 (1.4) T3: 3.5 (1.4) T4: 2.9 (1.7)	Single-arm feasibility; completer analyses GLM: BL–T4: z = −3.51, 95% CI − 1.52 to −0.34, $p = .000$	DASS	DASS-D BL: 24.3 (11.9) T1: 20.2 (11.4) T2: 17.2 (13.2) T3: 16.2 (11.5) T4: 12.7 (12.7) DASS-A BL: 18.9 (11.8) T1: 14.8 (10.5), T2: 12.8 (9.6) T3: 13.0 (11.3), T4: 8.6 (10.4) DASS-S BL: 23.0 (9.0) T1: 20.0 (7.2), T2: 17.3 (8.6) T3: 16.8 (8.1), T4: 12.9 (8.6)	Single-arm feasibility; completer analyses GLM (BL–T4): DASS-D: $z = -3.60$, $p = 0.000$. DASS-A: $z = -3.61$, $p = 0.000$. DASS-S: $z = -4.56$, $p = 0.000$. CIA: $z = -4.93$, $p = 0.000$.	Underweight AN at BL: Remission 43% at 52w (BMI > 18.5 and EDE-Q G < 2.77 and no binge/purge)	H

(*Continued*)

Table 4. (Continued).

				BMI		ED psychopathology			Psychometrics			Recovery Status	ROB
Modality	Study	Timepoints	n	Outcomes M (*SD*) kgm^{-2}	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size	Measure	Outcomes	Significance/ Effect Size		
SSCM	Touyz et al. (2013)	BL: T1: ~35w (PI) T2: ~+26w FU T3: ~+52w FU	32	BL: 16.1 (1.4) T1: 16.8 (2.0) T2: 16.8 (1.7) T3: 16.8 (1.8)	Within-arm change (Std ES): T1: 0.49*; T2: 0.50*; T3: 0.50* (positive = improvement). $p < .05$.	EDE G	BL: 3.0 (1.3) T1: 2.2 (1.4) T2: 2.2 (1.3) T3: 2.2 (1.3)	Within-arm ES: T1: 0.62***; T2: 0.64***; T3: 0.67***. Between-arm: CBT-AN better at T3: (see CBT row: $F^{1,57} = 8.90$, $p = .004$, $\eta^2p = .135$). No differences at EOT.	WSAS Total	BL: 20.8 (9.3) T1: 14.4 (9.2) T2: 13.8 (8.4) T3: 16.3 (10.5)	Within-arm ES: T1: 0.68***; T2: 0.75***; T3: 0.48×. Between-arm: at T2: CBT-AN superior ($F^{1,57} = 4.51$, $p = 0.038$)—not confirmed in sensitivity analyses.		SC/ L
						EDQOL Total	BL: 1.9 (0.5) T1: 1.4 (0.6) T2: 1.4 (0.6) T3: 1.3 (0.7)	Within-arm ES: T1:=0.92***; T2: =0.98***; T3:=1.11***.	BDI-II Total	BL: 30.2 (13.2)—T1: 17.2 (12.9)—T2: 18.7 (2.9)—T3: 18.4 (13.7)	Within-arm ES: T1: =0.98***; T2: =0.86***; T3: =0.89***.		
									SF-12	MCS BL: 29.6 (10.9) T1: 38.9 (8.9) T2: 37.9 (9.8) T3: 36.8 (11.0) PCS BL: 47.1 (9.7) T1: 48.0 (10.7) T2: 48.4 (7.8) T3: 48.2 (8.1)	SSCM-MCS T1: 0.85*** T2: 0.76*** T3: 0.65** SSCM-PCS T1: 0.09 T2: 0.13 T3: 0.11		

Note: where only part of a study's sample met eligibility criteria, descriptive statistics were recalculated by the review authors from published individual-participant data. Post-intervention timepoints are expressed as weeks from baseline; follow-up timepoints (prefixed +) are expressed as weeks after the post-intervention timepoint; [a]Mean calculated by the research team; [b]reports a standard error (SE) rather than standard deviation BL = baseline, PI = post-intervention, FU = follow up, G = global score, ns = not significant, ES = effect size, EDE-Q = Eating Disorder Examination Questionnaire, EDE = Eating Disorder Examination, EDI = Eating Disorder Inventory, ED-QOL = Eating Disorder Quality of Life, EDI SI = Eating Disorder Inventory Symptom Index, SCL-90/-R = Symptom Checklist 90/-Revised, YSQ/YSI = Young Schema Questionnaire/Inventory, SMI-ED-SF = Schema Mode Inventory for Eating Disorders-Short Form, CORE-10 = Clinical Outcomes in Routine Evaluation 10, BSI = Brief Symptom Inventory, GSI = Global Severity Index, CIA = Clinical Impairment Assessment, DES-II = Dissociative Experiences Scale-II, BDI-II = Beck Depression Inventory-II, WSAS = Work and Social Adjustment Scale, SF-12 = Short Form Survey, STAI = State-Trait Anxiety Inventory, DERS = Difficulties in Emotion Regulation Scale, DASS = Depression Anxiety Stress Scale, DSHI = Deliberate Self-Harm Inventory, BBQ = Brunnsviken Brief Quality of Life Scale, SSPS = Social Safeness and Pleasure Scale, HADS = Hospital Anxiety and Depression Scale, EQ-VAS = EuroQol Visual Analogue Scale; MRAS = Morgan Russell Assessment Scale.

patients with longstanding AN-R and $n = 3$ with longstanding AN-B/P at follow-up. Federici and Wisniewski (2013) measured behavioural items from the EDE-Q and saw mean reductions in days restricting, self-induced vomiting, and excessive exercise at post-intervention.

Psychological outcomes showed generally favourable change with some variability. In Kröger et al. (2010), overall psychological distress non-significantly decreased from baseline to post-intervention; however, reductions became significant by the 15-month follow-up, as did improvements in global psychosocial functioning. In Federici and Wisniewski (2013), self-harm outcomes were mixed at the individual level but reduced for most participants. Brown et al. (2018) did not report psychopathology outcomes for the longstanding subgroups, although depressive symptoms, trait anxiety, and emotion regulation (Brown et al., 2020; secondary analysis) improved significantly from admission to discharge for the full AN sample, with poorer maintenance noted for the AN-B/P group. While this review focused on the longstanding subgroup, these patterns are notable given the proportion of patients (AN-R 26.9%; AN-B/P 62.2%) that met criteria for longstanding illness. In Donkin et al. (2025), emotion regulation difficulties improved for treatment completers at 12 months relative to non-completers ($p = .007$), with a between-group difference also emerging for anxiety symptoms, while depression and stress did not significantly differ by completion status. Finally, Isaksson et al. (2021) reported improvements in quality of life and social safety and pleasure symptoms, with improvements largely maintained at follow-up; however, analyses were descriptive only.

CBT

Five studies evaluated CBT-based treatments, including three prospective cohort studies (Calugi et al., 2017; Dalle Grave et al., 2020; Schlegl et al., 2014), one quasi-experimental trial (Rossi et al., 2024), and one randomised controlled trial (Touyz et al., 2013). The sample sizes of eligible participant groups ranged from $n = 31$ (Touyz et al., 2013) to $n = 435$ (Schlegl et al., 2014) participants. All eligible groups contained only participants with underweight (i.e., not atypical) AN. In the three studies that reported diagnostic subtypes, $n = 47$ (74.6%; Touyz et al., 2013), $n = 16$ (28.07%; Rossi et al., 2024) and $n = 316$ (72.6%; Schlegl et al., 2014) were classified as having AN-R.

Two studies utilised CBT-E in an intensive format, comprising 13 weeks of inpatient care followed by a 7-week day hospital programme (Calugi et al., 2017; Dalle Grave et al., 2020). Individual therapy was twice weekly in the first month, then once a week thereafter. This was accompanied by a CBT-E-based group 4 times per week, dietetic and medical oversight, and on-site nurse support. The one study conducted solely in an inpatient setting (Schlegl et al., 2014) offered a multimodal CBT-based programme combining individual therapy 1–2 times per week with ED-specific group therapy (once per week

for 9 weeks), general group therapy (up to 3 times per week), supervised weight gain, and supplementary groups.

Rossi et al. (2024) offered participants with histories of moderate/severe childhood maltreatment an initial 40 sessions of manualised CBT-E treatment followed by either 20–25 sessions of EMDR treatment or further CBT-E sessions. The other study in an outpatient setting (Touyz et al., 2013) investigated CBT-AN or SSCM as a comparator, offering either treatment across 30 individual therapy sessions over an 8-month period. Treatment goals were decided between therapists and patients at the outset; they focused on quality of life and did not necessarily include weight gain. There were three papers with secondary analyses for this study (Abd Elbaky et al., 2014; Le Grange et al., 2014; Stiles-Shields et al., 2013).

In two studies (Calugi et al., 2017; Dalle Grave et al., 2020), mean BMI scores began in the underweight range and improved considerably post-intervention then decreased at both follow-up timepoints. For participants in Calugi et al. (2017), mean BMI scores dropped from 19.1 kgm^{-2} (SD = 1.6) post-intervention to the underweight range at both 6- and 12-month follow-up. In Dalle Grave et al. (2020), mean BMI scores remained more stable at 20-week follow-up but dropped to 18.6 kgm^{-2} (SD = 0.3) at 60-week follow-up. In contrast, mean BMI scores in two studies (Rossi et al., 2024; Touyz et al., 2013) continued to improve across all timepoints, although the degree of improvement varied. In Touyz et al. (2013), participants experienced significant improvements in BMI post-intervention and at 12-month follow-up, although mean BMI scores remained in the underweight range all timepoints. Similarly, in Schlegl et al. (2014), the mean BMI started in the underweight range at baseline and significantly improved although stayed underweight at post-intervention.

In the comparison of CBT-E and EMDR, participants with a history of childhood maltreatment continued to improve between baseline and at timepoints following both the initial CBT-E and the subsequent treatment (Rossi et al., 2024). However, the mean BMI score for participants with histories of childhood maltreatment who were being treated with further CBT-E remained in the underweight range (18.13 kgm^{-2}, SD = 2.01) post-intervention, whereas BMI improved to 19.69 kgm^{-2} (SD = 1.59) for the EMDR group.

All five CBT-based studies reported improvements in ED psychopathology at post-intervention; however, trajectories were heterogeneous and differed at follow-up. Calugi et al. (2017) saw EDE-Q reductions at post-intervention followed by increases at 6- and 12-month follow-ups. Similarly, Dalle Grave et al. (2020) observed further reductions in the EDE-Q at 20-week follow-up, followed by an increase at 60-week follow-up. Schlegl et al. (2014) reported significant EDI-2 reductions at discharge, but no long-term follow-up was reported. Approximately one third of participants in Schlegl et al. (2014) achieved clinically significant change across ED and general psychopathology

measures, while a similar proportion showed little meaningful change, highlighting substantial heterogeneity in treatment response. In Touyz et al. (2013), the CBT-AN group showed improvement that was maintained, with CBT-AN superior to SSCM on some ED psychopathology domains at 12-month follow-up. Among participants with childhood maltreatment, Rossi et al. (2024) found CBT-E+EMDR produced greater reductions in ED psychopathology than additional CBT-E.

Changes in psychosocial outcomes were mixed but generally positive. In Touyz et al. (2013), CBT-AN was associated with significant improvements in depressive symptoms and psychosocial adjustment from baseline to post-intervention, with improvements largely maintained at 6- and 12-month follow-up. In Schlegl et al. (2014), significant reductions in general psychological distress and improvements in psychosocial functioning were observed at discharge, with a substantial proportion of participants demonstrating reliable and clinically significant change. However, long-term follow-up data were not reported. In Calugi et al. (2017) and Dalle Grave et al. (2020), improvements were observed in general psychopathology and mood symptoms post-intervention, but these gains were partially reduced at follow-up. Rossi et al. (2024) found that general psychological distress did not significantly improve following the initial course of CBT-E; however, participants receiving CBT-E augmented with EMDR demonstrated significantly greater reductions in general psychopathology and dissociative symptoms post-intervention. Overall, CBT-based treatments were associated with short-term improvements in mood and general distress, though maintenance of psychological gains appears less consistent over extended follow-up and may be enhanced by adjunctive or targeted interventions.

Schema-therapy

All three schema-based treatments were conducted in an outpatient setting. Two of these followed a case series design (Allen et al., 2025; Simpson et al., 2010), while the other was a mixed-phase intervention development and feasibility study (Oldershaw et al., 2024). Included sample sizes ranged from $n = 1$ (Simpson et al., 2010) to $n = 34$ (Oldershaw et al., 2024).

All three studies combined schema therapy with other modalities. In Oldershaw et al. (2024), treatment was offered through weekly individual sessions integrating emotion-focused therapy, schema-therapy, and other modalities such as CBT. Allen et al. (2025) delivered weekly individual sessions of an integrated schema-therapy mode formulation with CBT for ED strategies such as thought monitoring and behavioural experiments. Treatment in Simpson et al. (2010) similarly utilised schema-based strategies with an emphasis on behavioural change, although treatment was offered in a group format. Treatment duration varied with group schema-therapy run over 20 sessions (Simpson et al., 2010), emotion-focused schema-therapy over ~40

sessions (Oldershaw et al., 2024), and individual schema-informed CBT treatment ranging from 22–55 sessions (M = 32; Allen et al., 2025).

BMI improvements from baseline to post-intervention were greatest for participants with AN in emotion-focused schema-therapy (Oldershaw et al., 2024). Participants with atypical AN also showed mean BMI increases, although weight gain was not a treatment goal for this group. Mean BMI for participants in Allen et al. (2025) showed small improvements (d = 0.15) from baseline to post-intervention, remaining in the underweight range. No post-intervention BMI was reported for the eligible participant in Simpson et al. (2010).

All three studies saw improvements in ED psychopathology. In Oldershaw et al. (2024), ED psychopathology improved post-intervention with a medium effect size. For the AN subgroup, 43% achieved remission post-intervention based on BMI, EDE-Q scores, and abstinence from binge/purge behaviours; however, no longitudinal follow-up was conducted. ED psychopathology also improved a medium effect size reduction (d = 0.53) at post-intervention in Allen et al. (2025). The participant in Simpson et al. (2010) was also reported to have achieved significance on reliable change and clinical significance for ED psychopathology at post-intervention and at 6-month follow-up, although individual-level data was not available.

Changes in psychosocial outcomes were heterogeneous. Improvements in depression and anxiety were observed for participants in Allen et al. (2025), whereas the participant in Simpson et al. (2010) did not show any significant change. In Oldershaw et al. (2024), depression, anxiety, and stress scores reduced considerably with medium-large effect sizes for the whole sample.

Other treatments

Four studies met the inclusion criteria that were the only included studies for their modality: a case series of individual ACT treatment (Berman et al., 2009), a randomised controlled trial using SSCM as a comparator (Touyz et al., 2013), a cohort study of a mixed-modality inpatient ED programme (Long et al., 2012), and a retrospective pre-post case series of past reality integration therapy (Wesselius et al., 2020). The sample sizes varied considerably from n = 3 (Berman et al., 2009) to n = 34 (Long et al., 2012). Most participants were diagnosed with underweight AN; only the sample in Berman et al. (2009; n = 3) included participants with both AN and subthreshold AN, although all subthreshold participants had previously met diagnostic criteria for AN. Of the two studies that reported diagnostic subtype, n = 10 (29.4%; Long et al., 2012) and n = 24 (75.0%; Touyz et al., 2013) participants were diagnosed with AN-R. Of the treatments, three were offered in an outpatient setting (Berman et al., 2009; Touyz et al., 2013; Wesselius et al., 2020), and one was offered in an inpatient setting (Long et al., 2012).

ACT (Berman et al., 2009) was offered over 17 twice-weekly individual therapy sessions, following a manualised structure that covered psychoeducation, identifying problematic strategies, acceptance and exposure, and value-driven behaviour. Participants were also offered two additional optional family sessions focused on teaching loved ones ACT strategies. Participants in the ACT treatment showed improvements in BMI, ED psychopathology, and psychological distress scores at post-intervention, which continued or were sustained at 12-month follow-up.

SSCM was delivered through 30 individual outpatient sessions over 8 months and combined clinical management (e.g., education, care coordination, and medical monitoring) with supportive psychotherapy (Touyz et al., 2013). Treatment prioritised quality of life and harm minimisation, with weight gain framed as a secondary goal. Participants receiving SSCM demonstrated significant improvements in BMI, ED psychopathology, quality of life, mood symptoms, and social adjustment at post-intervention, with effects largely maintained at 6- and 12-month follow-ups. However, mean BMI scores remained in the underweight range at all timepoints.

The mixed-modality inpatient programme (Long et al., 2012) followed a four-phase structure, comprising individual and group CBT and psychodynamic therapy alongside other groups and dietetic, medical, and psychiatric input. Participants progressed through phases based on weight restoration progress, and inpatient treatment lasted ~102 days. Mean BMI improved considerably from 14.06 kgm^{-2} (SD = 1.25) at baseline to 19.52 kgm^{-2} (SD = 1.27) post-intervention, which was maintained and increased marginally at 4-year follow-up (M = 19.61, SD = 2.22). General psychopathology followed a similar pattern. ED psychopathology outcomes varied somewhat by diagnostic subtype: both AN-R and AN-B/P participants improved significantly from baseline to discharge across four EDI subscales (Drive for Thinness, Body Dissatisfaction, Ineffectiveness, Interoceptive Awareness), with AN-R participants also showing significant improvement on the BSI Hostility item and the EDI Maturity Fears subscale. Participants with AN-B/P improved significantly on the Drive for Thinness, Body Dissatisfaction, Ineffectiveness, Interpersonal Distrust, and Hostility EDI subscales, and the CFSEI General and Social Self-Esteem subscales from discharge to follow-up, whereas participants with AN-R did not.

The results in Wesselius et al. (2020) were published while the treatment was ongoing, and session frequency and total planned dose were not reported. The reported second timepoint data were gathered after an average of approximately 11 sessions, although this varied between participants. At this timepoint, both BMI and ED psychopathology outcomes had improved.

Predictor analyses

Although not consistently assessed or reported, several studies, including the three secondary analyses, explored factors that predicted treatment success. Moderate levels of depression, high motivation (Schlegl et al., 2014), better social adjustment, shorter illness duration, younger age, and experiencing AN-R subtype (Le Grange et al., 2014) were associated with improved mental health or ED outcomes. Longer illness duration, greater levels of impairment (Le Grange et al., 2014), poorer impulse regulation, poorer body image, and interpersonal insecurity (Schlegl et al., 2014) were associated with worse clinical outcomes.

Regarding treatment factors, late therapeutic alliance (Stiles-Shields et al., 2013), greater continuity of care (Long et al., 2012), and a reduction of dissociative symptoms (Rossi et al., 2024) were found to be linked to improved clinical outcomes. In the moderator analysis by Le Grange et al. (2014), participants with higher baseline ED psychopathology, more severe depressive symptoms, older age, and AN-B/P subtype demonstrated better mental health outcomes with CBT-AN compared with SSCM. The authors hypothesised that CBT-AN may thus be superior to SSCM for more severe presentations due to its emphasis on targeting and changing ED thoughts and behaviours (Le Grange et al., 2014).

Older age, more severe ED psychopathology, and longer ED duration were associated with early termination of treatment in Isaksson et al. (2021), although Abd Elbaky et al. (2014). Found no association between ED duration and risk of treatment non-completion. Depressive symptoms, motivation, and social adjustment were also found to be unrelated to attrition (Abd Elbaky et al., 2014). Instead, poorer ED-related quality of life scores and experiencing AN-B/P subtype significantly predicted treatment attrition. Alongside a non-significant association between higher ED psychopathology and attrition, authors hypothesised that more severely ill patients were more likely to terminate treatment, which was not related to intervention received in this study.

Discussion

This mapping review sought to systematically describe the landscape of psychological treatments for adults with longstanding AN, with a broader aim of identifying what might work for whom. While the heterogeneity of the evidence base precludes definitive comparative conclusions, the review reveals several important patterns.

Contrary to narratives that recovery may not be possible for patients with longstanding AN (e.g., Gaudiani et al., 2022), this review reports positive outcomes in many of the included samples. Almost all treatment modalities and settings observed improvements in BMI and ED psychopathology at post-

intervention, although the degree and trajectory of these improvements varied by treatment and participant group. Positive outcomes were observed across multiple studies for CBT-, DBT-, and schema-therapy–based treatments. No treatments showed deterioration in group level reported outcomes post-intervention (though a few reported individuals with worsened outcomes), suggesting that, generally, the treatments were safe for participants with longstanding AN. Changes to general psychopathology were the most inconsistent, and many studies reported no significant changes to psychological distress at post-intervention or follow-up, suggesting that meaningful improvements may be harder to achieve in this domain or that they may take time to normalise after ED symptoms have reduced. This pattern also raises the question of whether current treatments adequately address the broader psychological distress including emotion dysregulation, trauma sequelae, and interpersonal difficulties that characterises longstanding presentations and which may act to perpetuate or maintain ED symptoms.

The diversity of treatments identified in this review is perhaps unsurprising given the ambiguous treatment pathways for people with longstanding AN; however, CBT treatments for EDs were still the most common and demonstrated promising outcomes for patients in these studies. All patients of CBT-based treatments included in this review were diagnosed with underweight AN and (where reported) a significant proportion (67.87%) had AN-R subtype, suggesting the effectiveness of CBT treatments for this population. This is notable given that many patients with longstanding AN have likely tried and been failed by CBT or other evidence-based treatments (Hay & Touyz, 2018; Kiely et al., 2025; Wonderlich et al., 2020), indicating that first-line treatments may not always be a panacea. However, while most studies reported that participants failed to respond to previous ED treatments, minimal or no data were reported on what treatment was previously offered, making it unclear whether these participants had previously trialled and experienced poor response or relapse following CBT treatment. A dilemma frequently faced by treating clinicians is whether to continue empirically supported treatment models despite prior poor outcomes, or to take an alternative approach (and what that approach might be). Thus, future research on CBT treatments for longstanding AN should collect clear treatment histories to determine whether these results are observed in populations with prior CBT attempts.

While CBT treatments were common, many treatments in this review were integrative (e.g., MED-DBT combining DBT with CBT for EDs; schema-informed CBT; CBT-E augmented with EMDR). It has been suggested that, rather than a single treatment (Schmidt & Treasure, 2006), integrating treatment components may be fundamental to treating longstanding or complex AN populations; indeed, this appears to be reflected in the results of this review and is the basis of MED-DBT (Donkin et al., 2025; Federici &

Wisniewski, 2013, 2025). A core reason for using integrative approaches in treating longstanding or complex AN are complexity factors such as co-occurring disorders (Federici & Wisniewski, 2025), which have been associated with less improvements and worse outcomes (Vall & Wade, 2015) and may contribute to treatment failure. DBT-based treatments that addressed and reported co-occurring emotion dysregulation, self-harm, or treatment-interfering behaviours showed benefit for the samples in this review (Donkin et al., 2025; Federici & Wisniewski, 2013; Kröger et al., 2010). These participants had all experienced prior treatment attempts (multiple, for the individuals in MED-DBT) and represented both AN subtypes alongside a range of significant comorbidities, particularly borderline personality disorder, yet demonstrated improvements in BMI, ED psychopathology, and other psychosocial outcomes. Similarly, Rossi et al. (2024) demonstrated that trauma-focused augmentation, rather than an extended dose of CBT-E, may help improve ED psychopathology in subgroups with significant childhood maltreatment. These findings support the importance of accounting for complexity as a target of, rather than an obstacle to, ED treatment.

Maintaining factors, which are distinct from but sometimes related to complexity factors and which may be addressed in integrative treatments, also need to be targeted. Treatments that explicitly target maintaining mechanisms, whether cognitive (e.g., CBT-E), emotional (e.g., DBT, MED-DBT), relational (e.g., schema therapy), or trauma-related (e.g., EMDR, PRI), demonstrated positive outcomes. This suggests that mechanism-focused treatments may be more relevant for longstanding AN than modality labels alone. As such, treatment choice should not be based on service-level convenience but should instead align with the specific mechanisms that underlie and maintain the ED. Patients presenting with emotion dysregulation and treatment-interfering behaviours may benefit most from DBT or MED-DBT approaches, patients experiencing overcontrol and rigidity with lower clinical risk may benefit from RO-DBT, patients with high trauma burden may have better outcomes from treatment augmented with trauma-focused work, and those with entrenched schema-level patterns may benefit from schema work. Indeed, the need to target maintaining mechanisms may explain the differing responses to treatment sometimes observed between patients with different diagnostic subtypes of AN. Given the complex and variable presentations of longstanding AN, a portfolio of options—varying by treatment target, dose/intensity, and setting—appears necessary, as no single model is universally sufficient.

Another critical target in ED treatment is relapse prevention, particularly for a longstanding AN population who may have experienced multiple episodes of treatment, remission, and relapse and may be at higher risk of further relapse (Berends et al., 2018). Intensive treatments largely demonstrated maintenance or improvement at follow-up (Kröger et al., 2010; Long et al.,

2012), including for participants with previous treatment attempts. But, for two inpatient and intensive outpatient CBT-E samples also with previous treatment attempts (Calugi et al., 2017; Dalle Grave et al., 2020), both BMI and ED psychopathology showed great acute improvements then declined at follow-up. This suggests that intensive treatment may catalyse change, but improvements are tenuous. There may be several possible reasons for this pattern. Although Calugi et al. (2017) and Dalle Grave et al. (2020) did not report diagnostic subtype, Long et al. (2012) and Brown et al. (2018) observed differences in follow-up ED outcome trajectories by diagnostic subtype. However, the degree to which specific subtypes maintained changes or showed improvements at follow-up varied between these two studies. Additionally, continuity and transition plans to community-level care likely determine post-discharge maintenance. Indeed, one of the studies found that continuity of care was a key predictor of positive outcomes (Long et al., 2012), highlighting the importance of supporting transition to outpatient care from inpatient treatment. The recurrence of post-discharge deterioration across several studies in this review underscores the need for relapse prevention as a core target alongside complexity. Moreover, although post-intervention BMI is a known predictor of relapse (de Rijk et al., 2024), weight or ED symptom change at discharge may not be a sufficient metric of treatment effectiveness on its own, and the role of complexity must be considered. This is particularly pertinent when drawing conclusions from studies with only post-intervention data available.

Taken together, these observations suggest that the question of "what works" may be better framed in terms of which treatment targets and mechanisms are addressed and "for whom", with adequate consideration of relapse prevention, rather than which branded modality is delivered.

Clinical implications

Several clinical implications arise from this review. Firstly, the findings support a move away from treating modalities as interchangeable for adults with longstanding AN. Instead, treatment selection should be guided by a thorough formulation of maintaining mechanisms, comorbidity, and prior treatment response. Secondly, the pattern of post-discharge deterioration across several studies highlights the need for clinicians to plan for sustained support and continuity of care from the outset, rather than treating relapse prevention as an afterthought. Thirdly, the inconsistent improvement in general psychopathology suggests that clinicians should routinely assess and target broader psychological distress, including depression, anxiety, and emotion regulation difficulties, alongside ED-specific symptoms. Finally, the limited and heterogeneous evidence base itself has clinical implications in that clinicians working with longstanding AN populations should be aware that many commonly used

treatments lack robust evidence for this specific population and should advocate for participation in research to build this evidence base.

Limitations and recommendations for future research

High heterogeneity among studies limited the ability to compare and synthesise treatments or outcomes, or to know whether changes were sustained long-term: even within modalities, sample sizes, durations, and outcome measures varied. As Kotilahti et al. (2020) previously noted, studies following an observational design with small sample sizes and poorer methodological quality dominated findings. This pattern is not uncommon for ED research, given the ethical challenges of conducting randomised controlled trials with high-risk populations, and is common in fields with emerging evidence.

All but two of the studies in this review reported specific BMI values at both pre- and post-intervention; however, the included studies varied in how they reported the EDE/EDE-Q or EDI and used different distress or functioning psychometrics, making true comparison difficult. A core standardised outcome set for longstanding AN that includes weight/BMI, a standardised ED psychopathology measure, general psychopathology, functioning/quality of life, and patient safety—as well as the use of consistent timepoints (e.g., discharge, 6, 12, 24 months)—would aid future research. Expanding data collection to include psychosocial measures is particularly important given that patients with longstanding AN may present with significant emotion dysregulation or suicide risk, which may maintain ED psychopathology or increase chances of relapse. That treatments inconsistently achieved post-intervention improvements in psychosocial domains further underscores this need.

This review was also constrained by challenges in identifying the population of interest. Additional studies could have been included in this review if sample characteristics, treatment protocol or theoretical underpinnings, psychometric outcomes, or other important data had been more clearly reported by study authors. Thus, the pool of eligible studies and participants may be larger than those included in this paper. Some included studies also only reported baseline sample characteristics (e.g., mean illness duration) for treatment completers, making the eligibility of the original recruited sample unclear.

To that end, this review was limited by the lack of consistency in defining longstanding AN (and EDs) across the field. While a whole sample mean illness duration of >7 years has been commonly used to define this population (Kotilahti et al., 2020; Touyz et al., 2013), some samples likely contained participants with shorter illness duration who would not be classified as having longstanding, complex AN based on timeframe alone. Because of inconsistencies in reporting illness duration across studies, it is difficult to

determine the extent to which this may have impacted results. The diagnostic ambiguity between subthreshold AN, atypical AN, AN-B/P, and bulimia nervosa creates further challenges in defining and labelling longstanding AN.

Likewise, excluding studies with participants under 18 years was ultimately limiting due to the various demarcations of adulthood in the ED literature. Several otherwise potentially eligible studies were excluded because the adult sample age range began at 16–17 years old. It is possible that using a mean sample age or a more flexible definition of adulthood may have seen these studies included; however, there are ethical concerns around classifying developing adolescents as having longstanding AN, particularly if this label redirects treatment focus away from recovery (Broomfield et al., 2017).

Also notable was the lack of diversity in the samples. Demographic data, such as ethnicity, were inconsistently reported. Most studies were conducted in high-income countries with female participants, reflecting a common and problematic pattern in wider ED research (Halbeisen et al., 2022). Treatments for longstanding AN may look different for males (Weltzin, 2016) or people who identify as genders other than female, as well as for neurodiverse populations or in different cultural contexts. As such, it is unknown whether these findings extend to diverse groups. Furthermore, some studies excluded participants based on complexity factors, particularly acute substance abuse, precluding information about treatment response in these populations. Similarly, the inconsistent reporting of comorbidity profiles, self-harm, and treatment histories across the included studies limits the ability to draw conclusions about which patient characteristics predict treatment response. This is particularly relevant for treatments such as MED-DBT that are specifically designed for multi-diagnostic and complex presentations, as the evidence base does not yet permit confident claims about their relative effectiveness for different patient groups.

The prominence of integrative approaches—which may be conceptually diffuse and difficult to compare in head-to-head trials—poses a challenge for future research. Further muddying the waters, the studies in this review inconsistently reported or implemented safeguards for treatment fidelity, which is critical for determining treatment efficacy. In a research area characterised by a lack of consensus on best procedures, a high-risk population, and numerous non-manualised, pilot, or integrative treatments, clear information about treatment components and fidelity will be critical to determining which treatment works best for whom moving forward.

To move from mapping to confident clinical recommendations, the field needs: (i) adequately powered comparative trials, including of integrative treatments such as MED-DBT, using standardised definitions of the population; (ii) consistent core outcome sets that include BMI, a standardised ED psychopathology measure, general psychopathology, functioning, and quality of life, assessed at agreed follow-up timepoints; (iii) routine reporting of

comorbidity profiles, treatment histories, and fidelity data, to support secondary analyses and treatment matching; and (iv) greater representation of diverse populations.

Conclusion

This systematic mapping review has outlined the current landscape of psychological treatments for adults with longstanding AN and organised the evidence according to treatment structure, targets, theoretical underpinnings, and outcomes. Several conclusions can be drawn from this review.

Firstly, improvements in BMI, ED psychopathology, and, to some degree, general psychopathology *are* possible for longstanding AN, challenging narratives suggesting that recovery is not possible for this population. Secondly, integrative approaches demonstrated positive outcomes, including for participants with comorbid complexity, supporting their role as a treatment option for individuals who have not benefited from standard ED treatment. Thirdly, treatments that address specific maintaining mechanisms (e.g., emotion dysregulation or trauma) alongside ED-specific symptoms appear promising, particularly for individuals with complex or multi-diagnostic presentations. Finally, treatment gains, particularly from intensive settings, frequently attenuated at follow-up, highlighting relapse prevention and continuity of care as critical treatment components.

However, in setting out to address "what works for whom?", this review has also revealed significant limitations in the current evidence base that preclude definitive answers. Several key questions remain unanswered. Firstly, the evidence does not yet permit confident recommendations about which specific treatment should be offered to which patient profile, as no adequately powered comparative trials exist. Secondly, "longstanding AN" and related constructs (SE-AN, SE-ED) remain inconsistently defined, making it difficult to determine whether findings generalise across studies or populations. Thirdly, reporting of treatment fidelity, comorbidity data, and treatment histories was inconsistent, limiting the ability to determine for whom treatments are most effective and under what conditions. Finally, outcomes beyond BMI and ED psychopathology—including quality of life, functioning, and psychosocial wellbeing—were variably measured, leaving the broader impact of treatments unclear. Improving outcomes for people living with longstanding AN will ultimately depend on strengthening the evidence base and conducting research that enables mechanism-informed treatment selection with adequate consideration of complexity and relapse prevention, based on individual needs rather than service-level convenience.

Disclosure statement

LD and SH are co-authors of two articles evaluating a MED-DBT programme for multi-diagnostic eating disorders. SH is a MED-DBT trainer and conference presenter. No other competing interests to declare.

Funding

Funding was received from the Faculty of Health and Environmental Sciences at the Auckland University of Technology to fund hours for LB to support conducting this review.

ORCID

Louise Blackmore http://orcid.org/0009-0002-0303-8568
Shelly Hindle http://orcid.org/0009-0000-5363-2333
Liesje Donkin http://orcid.org/0000-0002-0457-8788

References

Abd Elbaky, G. B., Hay, P. J., le Grange, D., Lacey, H., Crosby, R. D., & Touyz, S. (2014). Pre-treatment predictors of attrition in a randomised controlled trial of psychological therapy for severe and enduring anorexia nervosa. *BMC Psychiatry*, *14*(1), 69. https://doi.org/10.1186/1471-244X-14-69

Allen, K. L., Brown, Y., Elwyn, R., Glennon, D., Holland, L., Safadi, J., & Startup, H. (2025). Schema-informed CBT for anorexia nervosa: A case series for patients with chronic unmet need. *The Cognitive Behaviour Therapist*, *18*, 18. https://doi.org/10.1017/S1754470X25100196

Ambwani, S., Cardi, V., Albano, G., Cao, L., Crosby, R. D., Macdonald, P., Schmidt, U., & Treasure, J. (2020). A multicenter audit of outpatient care for adult anorexia nervosa: Symptom trajectory, service use, and evidence in support of "early stage" versus "severe and enduring" classification. *International Journal of Eating Disorders*, *53*(8), 1337–1348. https://doi.org/10.1002/eat.23246

Ben-Porath, D., Duthu, F., Luo, T., Gonidakis, F., Compte, E. J., & Wisniewski, L. (2020). Dialectical behavioral therapy: An update and review of the existing treatment models adapted for adults with eating disorders. *Eating Disorders*, *28*(2), 101–121. https://doi.org/10.1080/10640266.2020.1723371

Berends, T., Boonstra, N., & Van Elburg, A. (2018). Relapse in anorexia nervosa: A systematic review and meta-analysis. *Current Opinion in Psychiatry*, *31*(6), 445–455. https://doi.org/10.1097/YCO.0000000000000453

Berman, M. I., Boutelle, K. N., & Crow, S. J. (2009). A case series investigating acceptance and commitment therapy as a treatment for previously treated, unremitted patients with anorexia nervosa. *European Eating Disorders Review*, *17*(6), 426 EP–434. https://doi.org/10.1002/erv.962

Blackburn, R., Tonta, K. E., Erceg-Hurn, D. M., Raykos, B. C., & McEvoy, P. M. (2024). Opportunities lost? Rates and predictors of attrition in an eating disorders outpatient service. *Eating Behaviors*, *54*, 101898. https://doi.org/10.1016/j.eatbeh.2024.101898

Bosch, I. (2012). *Past reality integration: 3 steps to mastering the art of conscious living*. Hay House.

Broomfield, C., Stedal, K., Touyz, S., & Rhodes, P. (2017). Labeling and defining severe and enduring anorexia nervosa: A systematic review and critical analysis. *International Journal of Eating Disorders*, *50*(6), 611–623. https://doi.org/10.1002/eat.22715

Brown, T. A., Cusack, A., Anderson, L. K., Trim, J., Nakamura, T., Trunko, M. E., & Kaye, W. H. (2018). Efficacy of a partial hospital programme for adults with eating disorders. *European Eating Disorders Review*, *26*(3), 241–252. https://doi.org/10.1002/erv.2589

Brown, T. A., Cusack, A., Berner, L. A., Anderson, L. K., Nakamura, T., Gomez, L., Trim, J., Chen, J. Y., & Kaye, W. H. (2020). Emotion regulation difficulties during and after partial hospitalization treatment across eating disorders. *Behavior Therapy*, *51*(3), 401–412. https://doi.org/10.1016/j.beth.2019.07.002

Calugi, S., El Ghoch, M., & Dalle Grave, R. (2017). Intensive enhanced cognitive behavioural therapy for severe and enduring anorexia nervosa: A longitudinal outcome study. *Behaviour Research and Therapy*, *89*, 41–48. https://doi.org/10.1016/j.brat.2016.11.006

Christensen, K. A., & Haynos, A. F. (2020). A theoretical review of interpersonal emotion regulation in eating disorders: Enhancing knowledge by bridging interpersonal and affective dysfunction. *Journal of Eating Disorders*, *8*(1), 21. https://doi.org/10.1186/s40337-020-00298-0

Dalle Grave, R. (2012). *Multistep cognitive behavioral therapy for eating disorders: Theory, practice, and clinical cases*. Jason Aronson.

Dalle Grave, R., Conti, M., & Calugi, S. (2020). Effectiveness of intensive cognitive behavioral therapy in adolescents and adults with anorexia nervosa. *International Journal of Eating Disorders*, *53*(9), 1428–1438. https://doi.org/10.1002/eat.23337

D'andrea, W., Nieves, N., & Van Cleave, T. (2022). To thine own self be true: Interoceptive accuracy and interpersonal problems. *Borderline Personality Disorder and Emotion Dysregulation*, *9*(1), 6. https://doi.org/10.1186/s40479-021-00175-5

de Rijk, E. S., Almirabi, D., Robinson, L., Schmidt, U., van Furth, E. F., & Slof-Op't Landt, M. C. (2024). An overview and investigation of relapse predictors in anorexia nervosa: A systematic review and meta-analysis. *International Journal of Eating Disorders*, *57*(1), 3–26. https://doi.org/10.1002/eat.24059

de Vos, J. A., Radstaak, M., Bohlmeijer, E. T., & Westerhof, G. J. (2022). Exploring associations between personality trait facets and emotional, psychological and social well-being in eating disorder patients. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, *27*(1), 379–386. https://doi.org/10.1007/s40519-021-01107-6

Donkin, L., McColl, C., & Hindle, S. (2025). Does completion of 12 months of treatment show improved outcomes? A case series from an adult dialectical behaviour therapy programme for multi-diagnostic eating disorders (MED-DBT). *Eating Disorders*, 1–24. https://doi.org/10.1080/10640266.2025.2558005

Easdale-Cheele, T., Parlatini, V., Cortese, S., & Bellato, A. (2024). A narrative review of the efficacy of interventions for emotional dysregulation, and underlying bio-psycho-social factors. *Brain Sciences*, *14*(5), 453. https://doi.org/10.3390/brainsci14050453

Fairburn, C. G. (2008). *Cognitive behavior therapy and eating disorders*. Guilford Press.

Fairburn, C. G., & Beglin, S. J. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders*, *16*, 363–370. https://doi.org/10.1002/1098-108X(199412)16:4<363:AID-EAT2260160405>3.0.CO;2-%23

Fairburn, C. G., & Cooper, Z. (1993). The eating disorder examination. In C. G. Fairburn & G. T. Wilson (Eds.), *Binge eating: Nature, assessment, and treatment* (12th ed., pp. 317–360). Guilford Press.

Federici, A., & Wisniewski, L. (2013). An intensive DBT program for patients with multi-diagnostic eating disorder presentations: A case series analysis. *International Journal of Eating Disorders*, *46*(4), 322–331. https://doi.org/10.1002/eat.22112

Federici, A., & Wisniewski, L. (2025). *Treating eating disorders with DBT*. Guilford Publications.

Frostad, S., & Bentz, M. (2022). Anorexia nervosa: Outpatient treatment and medical management. *World Journal of Psychiatry*, *12*(4), 558. https://doi.org/10.5498/wjp.v12.i4.558

Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, *2*(2), 15–34. https://doi.org/10.1002/1098-108X(198321)2:2<15::AID-EAT2260020203>3.0.CO;2-6

Gaudiani, J. L., Bogetz, A., & Yager, J. (2022). Terminal anorexia nervosa: Three cases and proposed clinical characteristics. *Journal of Eating Disorders*, *10*(1), 23. https://doi.org/10.1186/s40337-022-00548-3

Gratz, K. L. (2001). Measurement of deliberate self-harm: Preliminary data on the deliberate self-harm inventory. *Journal of Psychopathology & Behavioral Assessment*, *23*(4), 253–263. https://doi.org/10.1023/A:1012779403943

Halbeisen, G., Brandt, G., & Paslakis, G. (2022). A plea for diversity in eating disorders research. *Frontiers in Psychiatry*, *13*, 820043. https://doi.org/10.3389/fpsyt.2022.820043

Hay, P., & Touyz, S. (2018). Classification challenges in the field of eating disorders: Can severe and enduring anorexia nervosa be better defined? *Journal of Eating Disorders*, *6*(1), 41. https://doi.org/10.1186/s40337-018-0229-8

Heffner, M., & Eifert, G. H. (2004). *The anorexia workbook: How to accept yourself, heal your suffering, and reclaim your life*. New Harbinger Publications.

Isaksson, M., Ghaderi, A., Ramklint, M., & Wolf-Arehult, M. (2021). Radically open dialectical behavior therapy for anorexia nervosa: A multiple baseline single-case experimental design study across 13 cases. *Journal of Behavior Therapy and Experimental Psychiatry*, *71*, 101637. https://doi.org/10.1016/j.jbtep.2021.101637

Keel, P. K., & Brown, T. A. (2010). Update on course and outcome in eating disorders. *International Journal of Eating Disorders*, *43*(3), 195–204. https://doi.org/10.1002/eat.20810

Kiely, L., Hay, P., & Conti, J. (2025). Key features of illness and treatment experiences in longstanding anorexia nervosa: Qualitative descriptive study. *British Journal of Psychiatry Open*, *12*(1), e22. https://doi.org/10.1192/bjo.2025.10923

Kotilahti, E., West, M., Isomaa, R., Karhunen, L., Rocks, T., & Ruusunen, A. (2020). Treatment interventions for severe and enduring eating disorders: Systematic review. *International Journal of Eating Disorders*, *53*(8), 1280–1302. https://doi.org/10.1002/eat.23322

Kröger, C., Schweiger, U., Sipos, V., Kliem, S., Arnold, R., Schunert, T., & Reinecker, H. (2010). Dialectical behaviour therapy and an added cognitive behavioural treatment module for eating disorders in women with borderline personality disorder and anorexia nervosa or bulimia nervosa who failed to respond to previous treatments. An open trial with a 15-month follow-up. *Journal of Behavior Therapy and Experimental Psychiatry*, *41*(4), 381 EP–388. https://doi.org/10.1016/j.jbtep.2010.04.001 PT - Article.

Lammers, M. W., Vroling, M. S., Crosby, R. D., & van Strien, T. (2020). Dialectical behavior therapy adapted for binge eating compared to cognitive behavior therapy in obese adults with binge eating disorder: A controlled study. *Journal of Eating Disorders*, *8*(1), 27. https://doi.org/10.1186/s40337-020-00299-z

The Lancet. (2020). Eating disorders: Innovation and progress urgently needed. *Lancet*, *395*(10227), 840. https://doi.org/10.1016/S0140-6736(20)30573-0

Lavender, J. M., Wonderlich, S. A., Engel, S. G., Gordon, K. H., Kaye, W. H., & Mitchell, J. E. (2015). Dimensions of emotion dysregulation in anorexia nervosa and bulimia nervosa: A conceptual review of the empirical literature. *Clinical Psychology Review*, *40*, 111–122. https://doi.org/10.1016/j.cpr.2015.05.010

Le Grange, D., Fitzsimmons-Craft, E. E., Crosby, R. D., Hay, P., Lacey, H., Bamford, B., Stiles-Shields, C., & Touyz, S. (2014). Predictors and moderators of outcome for severe and enduring anorexia nervosa. *Behaviour Research and Therapy*, *56*(1), 91 EP–98. https://doi.org/10.1016/j.brat.2014.03.006 PT - Article.

Leppanen, J., Brown, D., McLinden, H., Williams, S., & Tchanturia, K. (2022). The role of emotion regulation in eating disorders: A network meta-analysis approach. *Frontiers in Psychiatry*, *13*, 793094. https://doi.org/10.3389/fpsyt.2022.793094

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford Press.

Löffler, A., Foell, J., & Bekrater-Bodmann, R. (2018). Interoception and its interaction with self, other, and emotion processing: Implications for the understanding of psychosocial deficits in borderline personality disorder. *Current Psychiatry Reports*, *20*(4), 28. https://doi.org/10.1007/s11920-018-0890-2

Long, C. G., Fitzgerald, K.-A., & Hollin, C. R. (2012). Treatment of chronic anorexia nervosa: A 4-year follow-up of adult patients treated in an acute inpatient setting. *Clinical Psychology and Psychotherapy*, *19*(1), 1–13. https://doi.org/10.1002/cpp.738

Lynch, T. R. (2018). *Radically open dialectical behavior therapy: Theory and practice for treating disorders of overcontrol*. New Harbinger Publications.

Marcolini, F., Ravaglia, A., Tempia Valenta, S., Bosco, G., Marconi, G., De Ronchi, D., & Atti, A. R. (2024). Severe enduring anorexia nervosa (SE-AN) treatment options and their effectiveness: A review of literature. *Journal of Eating Disorders*, *12*(1), 48. https://doi.org/10.1186/s40337-024-01006-y

McColl, C., Hindle, S., & Donkin, L. (2024). "I mean, it kind of saved my life, to be honest": A qualitative study of participants' views of a dialectical behaviour therapy for multidiagnostic eating disorders programme. *Journal of Eating Disorders*, *12*(1), 186. https://doi.org/10.1186/s40337-024-01142-5

McIntosh, V. V., Jordan, J., Luty, S. E., Carter, F. A., McKenzie, J. M., Bulik, C. M., & Joyce, P. R. (2006). Specialist supportive clinical management for anorexia nervosa. *International Journal of Eating Disorders*, *39*(8), 625–632. https://doi.org/10.1002/eat.20297

Miskovic-Wheatley, J., Bryant, E., Ong, S. H., Vatter, S., Le, A., Touyz, S., & Maguire, S. (2023). Eating disorder outcomes: Findings from a rapid review of over a decade of research. *Journal of Eating Disorders*, *11*(1), 85. https://doi.org/10.1186/s40337-023-00801-3

Monteleone, A. M., Cascino, G., Martini, M., Patriciello, G., Ruzzi, V., Delsedime, N., Abbate-Daga, G., & Marzola, E. (2021). Confidence in one-self and confidence in one's own body: The revival of an old paradigm for anorexia nervosa. *Clinical Psychology and Psychotherapy*, *28*(4), 818–827. https://doi.org/10.1002/cpp.2535

Murray, S. B., Quintana, D. S., Loeb, K. L., Griffiths, S., & Le Grange, D. (2019). Treatment outcomes for anorexia nervosa: A systematic review and meta-analysis of randomized controlled trials. *Psychological Medicine*, *49*(4), 535–544. https://doi.org/10.1017/S0033291718002088

Nowakowski, M. E., McFarlane, T., & Cassin, S. (2013). Alexithymia and eating disorders: A critical review of the literature. *Journal of Eating Disorders*, *1*(1), 21. https://doi.org/10.1186/2050-2974-1-21

Oldershaw, A., Basra, R. S., Lavender, T., & Startup, H. (2024). Specialist psychotherapy with emotion for anorexia in Kent and Sussex: An intervention development and non-randomised single arm feasibility trial. *European Eating Disorders Review*, *32*(2), 215–229. https://doi.org/10.1002/erv.3034

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S.,

McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P., & Moher, D. (2021). The PRISMA, 2020 statement: An updated guideline for reporting systematic reviews. *Systematic Reviews*, *10*(1), 89. https://doi.org/10.1186/s13643-021-01626-4

Reay, M., Holliday, J., Stewart, J., & Adams, J. (2022). Creating a care pathway for patients with longstanding, complex eating disorders. *Journal of Eating Disorders*, *10*(1), 128. https://doi.org/10.1186/s40337-022-00648-0

Rice, L. N., & Elliott, R. (1996). *Facilitating emotional change: The moment-by-moment process*. Guilford Press.

Rossi, E., Cassioli, E., Cecci, L., Arganini, F., Martelli, M., Redaelli, C. A., Anselmetti, S., Bertelli, S., Fernandez, I., Ricca, V., & Castellini, G. (2024). Eye movement desensitisation and reprocessing as add-on treatment to enhanced cognitive behaviour therapy for patients with anorexia nervosa reporting childhood maltreatment: A quasi-experimental multicenter study. *European Eating Disorders Review*, *32*(2), 322–337. https://doi.org/10.1002/erv.3044

Russell, J., Mulvey, B., Bennett, H., Donnelly, B., & Frig, E. (2019). Harm minimization in severe and enduring anorexia nervosa. *International Review of Psychiatry*, *31*(4), 391–402. https://doi.org/10.1080/09540261.2019.1601073

Safer, D. L., Robinson, A. H., & Jo, B. (2010). Outcome from a randomized controlled trial of group therapy for binge eating disorder: Comparing dialectical behavior therapy adapted for binge eating to an active comparison group therapy. *Behavior Therapy*, *41*(1), 106–120. https://doi.org/10.1016/j.beth.2009.01.006

Sala, M., Keshishian, A., Song, S., Moskowitz, R., Bulik, C. M., Roos, C. R., & Levinson, C. A. (2023). Predictors of relapse in eating disorders: A meta-analysis. *Journal of Psychiatric Research*, *158*, 281–299. https://doi.org/10.1016/j.jpsychires.2023.01.002

Schlegl, S., Quadflieg, N., Löwe, B., Cuntz, U., & Voderholzer, U. (2014). Specialized inpatient treatment of adult anorexia nervosa: Effectiveness and clinical significance of changes. *BMC Psychiatry*, *14*(1), 258. https://doi.org/10.1186/s12888-014-0258-z

Schmidt, U., & Treasure, J. (2006). Anorexia nervosa: Valued and visible. A cognitive-interpersonal maintenance model and its implications for research and practice. *British Journal of Clinical Psychology*, *45*(3), 343–366. https://doi.org/10.1348/014466505X53902

Simpson, S. G., Morrow, E., van Vreeswijk, M., & Reid, C. (2010). Group schema therapy for eating disorders: A pilot study. *Frontiers in Psychology*, *1*(101550902), 182. https://doi.org/10.3389/fpsyg.2010.00182

Solmi, M., Monaco, F., Højlund, M., Monteleone, A. M., Trott, M., Firth, J., Carfagno, M., Eaton, M., De Toffol, M., Vergine, M., Meneguzzo, P., Collantoni, E., Gallicchio, D., Stubbs, B., Girardi, A., Busetto, P., Favaro, A., Carvalho, A. F., Steinhausen, H.-C., & Correll, C. U. (2024). Outcomes in people with eating disorders: A transdiagnostic and disorder-specific systematic review, meta-analysis and multivariable meta-regression analysis. *World Psychiatry*, *23*(1), 124–138. https://doi.org/10.1002/wps.21182

Stiles-Shields, C., Touyz, S., Hay, P., Lacey, H., Crosby, R. D., Rieger, E., Bamford, B., & Le Grange, D. (2013). Therapeutic alliance in two treatments for adults with severe and enduring anorexia nervosa. *International Journal of Eating Disorders*, *46*(8), 783 EP–789. https://doi.org/10.1002/eat.22187

Touyz, S., Le Grange, D., Lacey, H., Hay, P., Smith, R., Maguire, S., Bamford, B., Pike, K. M., & Crosby, R. D. (2013). Treating severe and enduring anorexia nervosa: A randomized controlled trial. *Psychological Medicine*, *43*(12), 2501 EP–2511. https://doi.org/10.1017/S0033291713000949

Treasure, J., Duarte, T. A., & Schmidt, U. (2020). Eating disorders. *Lancet*, *395*(10227), 899–911. https://doi.org/10.1016/S0140-6736(20)30059-3

Treasure, J., & Schmidt, U. (2013). The cognitive-interpersonal maintenance model of anorexia nervosa revisited: A summary of the evidence for cognitive, socio-emotional and interpersonal predisposing and perpetuating factors. *Journal of Eating Disorders*, *1*(1), 13. https://doi.org/10.1186/2050-2974-1-13

Treasure, J., Stein, D., & Maguire, S. (2015). Has the time come for a staging model to map the course of eating disorders from high risk to severe enduring illness? An examination of the evidence. *Early Intervention in Psychiatry*, *9*(3), 173–184. https://doi.org/10.1111/eip.12170

Vall, E., & Wade, T. D. (2015). Predictors of treatment outcome in individuals with eating disorders: A systematic review and meta-analysis. *International Journal of Eating Disorders*, *48*(7), 946–971. https://doi.org/10.1002/eat.22411

van Hoeken, D., & Hoek, H. W. (2020). Review of the burden of eating disorders: Mortality, disability, costs, quality of life, and family burden. *Current Opinion in Psychiatry*, *33*(6), 521–527. https://doi.org/10.1097/yco.0000000000000641

Vinchenzo, C., Lawrence, V., & McCombie, C. (2022). Patient perspectives on premature termination of eating disorder treatment: A systematic review and qualitative synthesis. *Journal of Eating Disorders*, *10*(1), 39. https://doi.org/10.1186/s40337-022-00568-z

Vogel, E. N., Singh, S., & Accurso, E. C. (2021). A systematic review of cognitive behavior therapy and dialectical behavior therapy for adolescent eating disorders. *Journal of Eating Disorders*, *9*(1), 131. https://doi.org/10.1186/s40337-021-00461-1

Weltzin, T. E. (2016). Treating males with severe and enduring anorexia nervosa: Different to females? In S. Touyz, D. L. Grange, H. Lacey, & P. Hay (Eds.), *Managing severe and enduring anorexia nervosa* (pp. 231–245). Routledge.

Wesselius, H., Bosch, I., van Hastenberg, L., Simons, J., Kuiper, C., & van der Helm, P. (2020). A new perspective on extreme recurring anorexia and its treatment: A preliminary study. *Journal of Prenatal & Perinatal Psychology & Health*, *34*(5), 369–393. https://www.proquest.com/openview/39b3afe8cae4606dda3d54eb1dc5dd16/1?pq-origsite=gscholar&cbl=28214

Wisniewski, L., & Ben-Porath, D. (2015). Dialectical behavior therapy and eating disorders: The use of contingency management procedures to manage dialectical dilemmas. *The American Journal of Psychotherapy*, *69*(2), 129–140. https://doi.org/10.1176/appi.psychotherapy.2015.69.2.129

Wonderlich, S. A., Bulik, C. M., Schmidt, U., Steiger, H., & Hoek, H. W. (2020). Severe and enduring anorexia nervosa: Update and observations about the current clinical reality. *International Journal of Eating Disorders*, *53*(8), 1303–1312. https://doi.org/10.1002/eat.23283

Young, J. E., Klosko, J. S., & Weishaar, M. E. (2006). *Schema therapy: A practitioner's guide*. Guilford Press.

Zhu, J., Hay, P. J., Yang, Y., Le Grange, D., Lacey, J. H., Lujic, S., Smith, C., & Touyz, S. (2023). Specific psychological therapies versus other therapies or no treatment for severe and enduring anorexia nervosa. *Cochrane Database of Systematic Reviews*, *2023*(8), Cd011570. https://doi.org/10.1002/14651858.CD011570.pub2

Zhu, J., Yang, Y., Touyz, S., Park, R., & Hay, P. (2020). Psychological treatments for people with severe and enduring anorexia nervosa: A mini review. *Frontiers in Psychiatry*, *11*, 206. https://doi.org/10.3389/fpsyt.2020.00206