

Individual differences in motivation to change in individuals with eating disorders: A systematic review

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Abstract

Objective: Motivation to change has been suggested to significantly impact treatment outcomes in eating disorders (EDs). This review will investigate factors associated with motivation to change in EDs with the aim of supporting clinicians to be aware and sensitive to factors that might obstruct recovery and to inform motivation-based interventions.

Method: Using PRISMA guidelines, this article identified 24 studies through database searches meeting eligibility criteria. Only correlates of motivation were identified, limiting the ability of this review to identify causal relationships. Factors that changed alongside changes in motivation were identified from longitudinal studies.

Results: This review identified factors such as individual characteristics, co-morbid psychopathology, lack of treatment autonomy and relationships with others to be associated with motivation to change in individuals with EDs. In addition, motivation to change significantly increased alongside self-esteem and identity re-negotiation when measured longitudinally.

Discussion: Motivational interviewing can typically focus on exploring ambivalence to treatment, identifying goals and values, and increasing self-efficacy. However, this review identifies individual and relational factors to be particularly significant and may obstruct recovery from an ED. As such, evidence-based targets have been identified to inform clinicians and motivation-based interventions.

Public significance: Knowledge of factors associated with motivation to change in EDs is important to understand those who may have poorer treatment outcomes. Motivation may be improved by supporting individuals' relationship with others and tailoring interventions according to temperament and personality traits. Utilizing an individual's social support as they enter ED treatment may be effective in maximizing motivation to recover.

Resumen

Objetivo: Se ha sugerido que la motivación al cambio impacta significativamente en los resultados del tratamiento en los trastornos de la conducta alimentaria (TCAs). Esta revisión investigará los factores asociados con la motivación al cambio en los

TCAs con el objetivo de apoyar a los clínicos para que estén conscientes y sensibles a los factores que podrían obstaculizar la recuperación e informar las intervenciones basadas en la motivación.

Método: Siguiendo las guías PRISMA, este artículo identificó 24 estudios a través de búsquedas en bases de datos que cumplieran con los criterios de elegibilidad. Solo se identificaron correlatos de la motivación, lo que limita la capacidad de esta revisión para identificar relaciones causales. Los factores que cambiaron junto con los cambios en la motivación se identificaron a partir de estudios longitudinales.

Resultados: Esta revisión identificó factores como características individuales, psicopatología comórbida, falta de autonomía en el tratamiento y relaciones con otros como asociados con la motivación al cambio en individuos con TCAs. Además, la motivación al cambio aumentó significativamente junto con la autoestima y la re-negociación de la identidad cuando se midió longitudinalmente.

Discusión: La entrevista motivacional típicamente puede centrarse en explorar la ambivalencia hacia el tratamiento, identificando metas y valores, y aumentando la autoeficacia. Sin embargo, esta revisión identifica factores individuales y relacionales como particularmente significativos y que pueden obstaculizar la recuperación de un TCA. Como tal, se han identificado objetivos basados en evidencia para informar a los clínicos y a las intervenciones basadas en la motivación.

KEYWORDS

anorexia nervosa, bulimia nervosa: Eating disorders, motivation to change, readiness to change

1 | INTRODUCTION

Eating disorders (EDs) are complex mental health conditions that impact an individual physically, psychologically, and socially (Streatfeild et al., 2021). EDs, including anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED) and other specified feeding and eating disorders (OSFED) typically have an onset during adolescence or early adulthood (Allen et al., 2014) and are known to be very difficult to treat (Favaro et al., 2019). While recent research into early intervention in EDs has produced promising results, suggesting that treating an ED less than 3 years of onset is associated with better outcomes (Fassino & Abbate-Daga, 2013), many individuals do not access treatment until much later in the disease (Austin et al., 2021). The duration of an untreated AN has been associated with full or partial remission into AN, rather than recovery, in a long-term retrospective study (Andrés-Pepiñá et al., 2020). Motivation to change in people with EDs has been a topic of interest in the literature, based on the postulation that individuals who are highly motivated to change are more likely to recover from an ED (Denison-Day et al., 2018). The characteristics of an individual that might lead them to be motivated to change are poorly understood, although a better understanding of such characteristics may better inform motivational interviewing techniques and support clinicians to be aware and sensitive to factors that might obstruct recovery.

“Motivation to change” can also encompass any intention or readiness to change or recover from an ED or ED symptoms. A previous

systematic review suggested a broader definition of “an autonomous levels of motivation, readiness to change” (Clausen et al., 2013). Motivation to change is a critical factor in the recovery process for individuals with EDs, with higher levels of motivation to change being associated with behavioral change, and better treatment outcomes, that is a higher BMI and fewer binge/purge behaviors (Vall & Wade, 2015).

Theories of behavior change involve social cognitive theory (SCT) (Bandura, 1986), which suggests that behavior is shaped by both environmental and personal factors, such as self-efficacy, outcome expectations, and goals. For individuals with EDs, the SCT might expect behavioral change to involve the development of coping strategies to respond to environmental triggers, in the context of beliefs about diet, body image, and self-esteem. In addition, the health belief model (HBM) (Rosenstock, 1990) suggests that behavior change is influenced by the threat or consequence to health posed by a particular condition. For those with EDs, this might involve considering the health risks associated with an ED and the benefit to recovery. The stages of change (SoC) model (Prochaska et al., 2015), suggests that individuals progress through different stages of readiness to change and has been used in the context of EDs in several studies (Hasler et al., 2004). The SoC aims to aid understanding of the process of behavior change, facilitating the identification of strategies to support sustained recovery from problematic behaviors, such as ED behaviors (Hasler et al., 2004).

Individuals with EDs might face challenges in changing their behavior associated with a fear of weight gain (Peckmezian &

Paxton, 2020), low self-esteem, linked to self-efficacy (Peckmezian & Paxton, 2020), and psychological co-morbidity impacting an individual's ability to engage in professional support (Hay, 2020). Finally, many EDs are ego-syntonic in nature (Roncero et al., 2013), and are somewhat rewarding to the individual via maintaining a low body weight, and thus motivation to change may be particularly low in low body mass index (BMI) EDs.

Motivation to change, and the likelihood of being in any given SoC, have been suggested to differ among different ED diagnostic groups and according to the ED symptoms presented, perhaps due to EDs encompassing both ego-dystonic and ego-syntonic symptoms. Many individuals with AN are identified within the “precontemplation” stage and struggle to move to the “preparation” SoC (Tchanturia et al., 2014). There may be an element of denial or lack of awareness of the negative consequences of their ED, and those with AN have reported lower motivation to change than BN (Carter & Kelly, 2015), with readiness for change shifting less over treatment in AN than in BN and EDNOS (Josie Geller et al., 2005). Individuals with BN may be more likely to be in the “preparation” stage, as they may be more aware of the problematic nature of their ED thus these individuals might spend longer in the “action” and “maintenance” SoC, but struggle to avoid relapsing completely (Tchanturia et al., 2014). While there is less research on SoC in BED and OSFED, it has been suggested that these individuals spend more time in the “contemplation” and “preparation” stages, likely associated with the shame and guilt that they experience linked to binge eating and purging and may require support to move into the “action” and “maintenance” stages. Similarly, AN, BN, and EDNOS report higher motivation to change binge symptoms and lower motivation to change dietary restriction (Geller et al., 2001; Geller et al., 2008; Geller et al., 2013).

ED features related to distress (i.e., binge eating and purging) have been associated with lower scores on “precontemplation” SoC (Kambanis et al., 2022). Within an adult sample of mixed EDs, “action” predicted decreased frequencies of binge eating and purging (but not fasting or driven exercise). As many individuals with EDs are known to move between ED diagnoses across the lifespan (Fichter & Quadflieg, 2007) motivation to change is not linear and there may be a complex bidirectional interplay between motivation and ED symptoms, with a different pattern emerging for different ED features.

Motivation to change is a strong predictor of treatment outcome in EDs in a recent systematic review and meta-analysis (Sansfacon et al., 2020), and several measures have been developed to measure motivation or readiness to change in EDs, including The anorexia nervosa stages of change questionnaire (ANSOCQ) (Rieger et al., 2002), The bulimia nervosa stages of change questionnaire (Rieger et al., 2002), (Martinez et al., 2007), SoC (Hall, 1977), and others have included specific questions around motivation, including The Yale-Brown-Cornell eating disorder scale (Sunday et al., 1995), The motivational SoC for adolescents recovering from an eating disorder (MSCARED) (Gusella et al., 2003), the autonomous and controlled motivation for treatment questionnaire (ACMTQ) (Zuroff et al., 2007) and health related quality of life (HRQoL) (Herdman et al., 1998).

Although measures of motivation in EDs typically have moderate to high convergent validity (Geller et al., 2001; Green et al., 2017),

they can assess motivation in different ways, for example, the SoC measures all symptoms as problems/habits, with the MSCARED grouping all ED symptoms together. However, the ANSOQ and BNSOQ consider motivation pertaining to individual symptoms and behaviors, whereas the ACMTQ measures readiness for treatment specifically. As such, with ED symptoms and behaviors associated to different ED diagnoses, motivation to change could be conceptualized in several domains. While these measures have primarily been used to investigate the association between motivation to change and outcomes in ED treatment, they have also been used to understand why some individuals might be more or less motivated to change.

Some studies find higher motivation to be associated with greater adherence to psychological treatment protocols and more positive treatment outcomes (Sansfacon et al., 2020). A recent meta-analysis found that higher motivation to change was associated with better outcomes across a range of ED treatments, including cognitive-behavioral therapy, family-based therapy, and interpersonal therapy (Linardon et al., 2020). However, due to the complex nature of EDs, it may be challenging to disentangle motivation to change from difficulties arising as a result of an ED, such as co-morbid physical and mental health conditions, poor social support, or isolation, which may also impact treatment outcomes.

While there have been extensive studies to validate measures of motivation to change in EDs (Hötzel et al., 2013), with a recent review investigating the extent to which motivation to change predicts treatment outcome (Sansfacon et al., 2020), the characteristics of an individual or factors which lend them to be more or less motivated to change are less known. This systematic review will not investigate correlations of motivation to change with ED symptoms or traits, based on both the known associations and the hypothesized circular nature of this relationship (Clausen et al., 2013). Instead, this review will investigate factors associated with motivation to change such as personality traits, social networks, and biological underpinnings, where this is possible. Based on known statistical challenges in defining a “predictor” (Harvey, 2020; Stubbs et al., 2011), and discrepancy in the scientific literature as to how this term is used, this review will discuss “predictors” and “correlations” as *prospective* and *concurrent* associations with motivation to change respectively.

2 | METHODS

This review was pre-registered with PROSPERO (registration number CRD42023398282) and performed according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009).

2.1 | Inclusion criteria

The following specifications will be applied: (i) English language publication, (ii) ED diagnosis (iii) a measurement of motivation to recover

(iv) a quantitative measurement of a predictor or correlate or association with motivation to recover, independent of ED status.

2.2 | Exclusion criteria

This review excluded the following studies, which were thought to not map onto the key aims of the review: (i) studies that reported the findings of interventions aiming to increase motivation to change, where such studies measured associations with post-intervention motivation to change. However, in the case where an intervention measured independent associations with baseline motivation to change, it was included. (ii) Psychological or pharmacological treatment interventions, whereby motivation to change is measured as a *consequence* of ED treatment or support, were excluded. (iii) Validation studies, including studies validating a measure for motivation to change in EDs in a different language or mapping measures for motivation onto other measures of motivation to change. (iiii) Finally, studies measuring motivation alongside ED diagnoses or symptom severity alone.

2.3 | Information sources and search strategy

Two reviewers independently searched three electronic databases (Embase, PsychInfo, MEDLINE via Ovid SP and PubMed) from inception until the search date of 24 October 2023, with the following search terms combined with “AND”:

1. Anorexia OR bulimia OR BEDs OR eating disorder OR OSFED OR EDNOS
2. Motivation for treatment OR motivation for change OR motiv* OR readiness for change OR readiness for treatment OR readiness OR behavior change OR intention to change OR SoC OR trans-theoretical model OR recovery OR recover

The secondary search strategy involved searching reference lists, and Google Scholar searches to identify unpublished literature and conference abstracts.

2.4 | Categorizing associations

“Predictors,” “correlates,” or “associations” in this review were defined as any variable or characteristic associated with motivation or readiness to change, as defined by individual publications. Papers that applied an appropriate quantitative analysis for a prediction model, or an association were considered for inclusion.

2.5 | Outcomes

Motivation, intention, or readiness to change and recovery from an ED or ED symptoms, including any cognitive, behavioral or biological

change associated with a DSM-5 ED (Fairburn & Cooper, 2011). The definition for motivation or readiness to change may vary according to publication, but will broadly be defined as the desire to promote one's own recovery from an ED.

2.6 | Source selection

The search process was conducted by one reviewer (LR). Titles and abstracts were assessed for the eligibility criteria by two reviewers, with inter-rater reliability $\kappa > 0.82$ considered acceptable (McHugh, 2012). Full texts of the remaining articles were assessed against the eligibility criteria and 20% were screened by a second reviewer (MF), and inter-rater reliability was $\kappa = 0.91$ (McHugh, 2012).

2.7 | Data collection process

A data extraction form was created to capture (a) study location and quality rating; (b) design and analysis; (c) sample characteristics; (d) measures used to quantify motivation to change, (e) outcomes and key findings presented. The second author (MF) then extracted data from 20% ($n = 5$) of the papers. Inter-rater agreement was achieved following discussion ($\kappa = 0.9$).

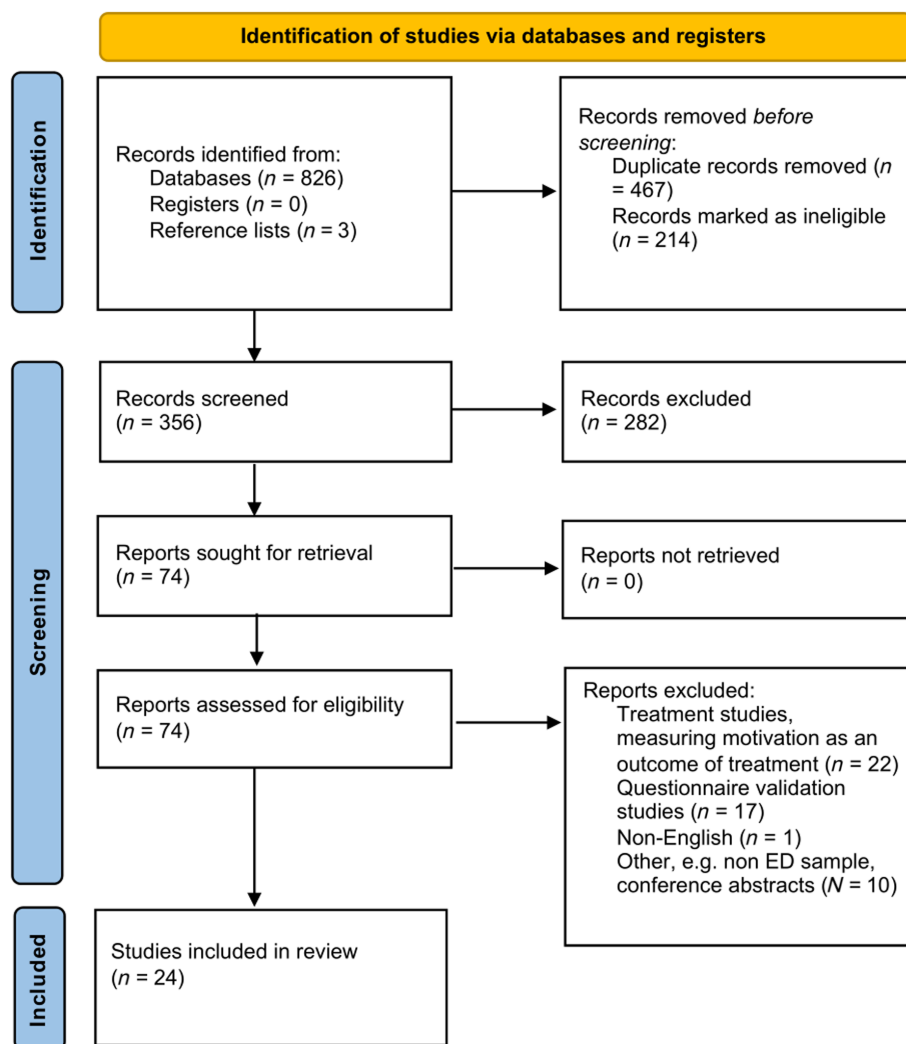
2.8 | Summary measures

Findings regarding associations with motivation to change in EDs are summarized via narrative synthesis. Where studies also included analyses outside the remit of this review, only the findings of the relevant research questions are reported and discussed.

2.9 | Risk of bias within and across studies

The Newcastle-Ottawa Scale (NOS) (Wells et al., 2009) for assessing the quality of nonrandomized studies was used (Peterson et al., 2011). This is appropriate for case-control studies and observational studies, and is recommended by the Cochrane collaboration (Godlee, 1994). The NOS for cohort studies evaluates three aspects: selection, comparability, and outcome. Selection considers the representativeness of cohorts, exposure ascertainment, and absence of the outcome at the study's start. Comparability assesses whether cohorts are comparable in design or analysis. The outcome component includes follow-up adequacy, outcome assessment, and sufficient follow-up duration. The total stars assigned to these criteria determine the study's quality rating (e.g., “good,” “fair,” or “low”) in assessing risk of bias and overall quality. Stars were awarded such that the highest quality studies are awarded up to nine stars. Quality ratings were assigned to all studies by one author (LR), with 20% randomly selected papers and evaluated by a second author (MF) with agreement on adequacy ratings ($\kappa = 0.81$) following discussion.

FIGURE 1 PRISMA Flow Diagram summarizing the identification of included studies.



3 | RESULTS

3.1 | Study characteristics

Twenty-four studies were included in the final analysis, see Figure 1 for PRISMA flow diagram summarizing the identification of included studies. Only concurrent associations were identified in the included papers, summarized in Table 1. Most studies were conducted on an outpatient basis; three studies took place in an inpatient setting and seven recruited individuals with EDs from the community. The average reported mean age of participants was 25.41 years ($SD = 5.87$), with included ages ranging from 12 to 65 years. Thirteen studies (50%) included adults only, four (16.6%) included adolescents only, and the remainder (34.62%) reported a mixed sample. ED diagnoses including AN (AN-R and AN-BP), BN (both long-term and short-term BN), eating disorders not otherwise specified (EDNOS), OSFED, BED, or “any DSM-5 ED” were investigated in the included studies. The duration of an ED ranged from 6 months to 44 years. The average reported mean starting BMI was 15.85 ($SD: 0.96$) for AN samples and 21.93 ($SD: 0.41$) for BN

samples and 21.81 ($SD: 5.35$) for mixed ED groups. Four studies reported participant ethnicity, whereby the majority (>70%) were Caucasian or white. The studies were conducted across 11 different countries, predominantly the United States ($N = 5$), Spain ($N = 5$) and the United Kingdom ($N = 3$). The average quality rating of included studies was 4.54*, with seven (29.2%) being of good quality, 10 (41.7%) being of fair quality, and 6 (52%) being of low quality. Lower quality studies scored lowly in “comparability,” with it being common for studies to not statistically control for important factors. Quality ratings are reported in Table 2.

Studies were most commonly excluded due to investigating motivation to change and its association with treatment outcome, for example, (Hillen et al., 2015; Idini et al., 2009; Philipp et al., 2021) rather than prospective or concurrent associations with motivation to change. Second, studies were commonly excluded due to validating measures of motivation to change, without investigating independent associations with motivation, for example, (Erguney Okumus et al., 2018; Morin & Meilleur, 2022; St-Hilaire et al., 2017) including non-English studies such as (Sala & Simon, 2011).

TABLE 1 Characteristics and findings of reviewed studies.

Author	Sample (N)	Setting	Gen (% female)	Age (M; SD; Range)	BMI (M; SD; Range)	Race and ethnicity	SES	Country	Completed
Bussolotti et al. (2002)	322	Outpatient/Community	100	AN: M:24.4; SD: 5.3; BN: 23.3; SD: 5.7 Mexican sample, M: 20.84; SD: 5.99; USA sample: M: 22.51; SD: 6.08	AN: M: 16.4; SD: 1.8; BN: M: 21.8; SD: 3.8	Race, Ethnicity NR	NR	Italy	
Caballero et al. (2003)	174	Community	100%			Race, ethnicity NR	NR	USA/Mexico	
Carter and Kelly (2015)	97	Inpatient specialist treatment program	97%	M: 28; SD: 9.6; Range: 17–57 years.	M: 21; SD = 5.5; Range: 12.6–44.	79.2% Caucasian; 4.5% East Asian; 1.4% South Asian; 2.8% African Canadian; 10.8% Latino; 1.5% mixed race	NR	Canada	74%
Darcy et al. (2010)	20	Outpatient	100%	M: 29.35; SD: 12.11; Range: 19–52 years		Ethnicity NR	NR	USA	83.30%
Dawson et al. (2015)	67	Community	100%	M: 29; SD: 9.95; Range: 19–70 years	<20 kg/m ²	Race, Ethnicity NR	NR	Australia	
De Vos et al. (2023)	422	Outpatient	98.6%	27.01 years (SD: 9.71)	BMI (kg/m ²) < 15; N = 45 (10.2%)	Race, ethnicity NR	NR	The Netherlands	83.5%
Fajia et al. (2017)	21	Outpatient/Community	100%	M: 29.67; SD: 12.19; Range: 18–61 years	~50% + M: ≤ 17.5; ~50% M: 20.07; SD: 2.88; Range: 18.36–24.65	Race, ethnicity NR	NR	UK	
Gagnon Girouard et al. (2019)	81		100%	Range: 18–65 years		Race, ethnicity NR	NR	Canada	
Geller et al. (2009)	128	Outpatient	100%	Mean: 28.3; SD: 7.8 years	<20 kg/m ² were considered low BMI (n = 27); BMI of >20 kg/m ² were considered normal BMI (n = 28)	Race, ethnicity NR	Upper middle class (Hollingshead Index, M: 1.9, SD: 0.9)	Canada	
Halmi et al. (2000)	320	Community, college students, enrolled in a genetic study for AN	100%	Mean: 28.2 years (SD = 10.4, range = 14–65).		Race, ethnicity NR	NR	USA	
Hasler et al. (2004)	88	Outpatient	93.20%	Mean: 27.2; SD: 9.7	M: 23.9; SD: 9.6	Race, ethnicity NR	NR	Switzerland	
Malmendier Muehlschlegel et al. (2016)	30	Inpatient	100%	Mean: 15.07; SD = 1.68; Range: 12–20 years	Median: 7.99 (interquartile (IQ) range = 2.02–21.43)	Race, ethnicity NR	NR	UK	

TABLE 1 (Continued)

Author	Sample (N)	Setting	Gen (% female)	Age (M; SD; Range)	BMI (M; SD; Range)	Race and ethnicity	SES	Country	Completed
Masheb, and Grilo (2002)	130	Outpatient	80%	M: 43.0; Range: 23–61 years	M: 37.2; SD: 8.4	87.7% Caucasian Ethnicity NR	NR	USA	
Muñoz et al. (2012)	358	Outpatient	96.60%	M: 27 years	M: 21.4	Race, ethnicity NR	NR	Spain	76%
Pauli et al. (2017)	92	Outpatient, adolescents	94.60%	M: 15.64; SD: 1.40	M: 16.42; SD: 0.75	Race, ethnicity NR	NR	Switzerland	85%
Perkins et al. (2007)	146	Outpatient	98%	Short BN: M: 17.6; SD: 1.7; Long BN: M: 30.4; SD: 12.5	Short BN: M: 21.6; SD: 2.8; Long BN: 22.4; SD: 2.8	Race, ethnicity NR	NR	UK	
Rodríguez Cano et al. (2012)	196	Outpatient		BN: M: 24.98; 95% CI: 23.27, 26.69; AN: M: 18.81; 95% CI 16.08, 21.53	M: 21.8; SD: 7.1	Race, ethnicity NR	NR	Spain	15.04%
Rankin et al. (2023)	9	Community	88.8%	AN: M: 26.67, SD: 5.16		Race, ethnicity NR	NR	Australia	
Stockford et al. (2007)	69	Community	97%	M: 31.1 years; SD 9.1	AN: M: 15.2; SD: 2.0; BN: M: 23.2; SD: 8.0; EDNOS: M: 20.3; SD: 4.0	Caucasian Ethnicity NR	NR	UK	24.00%
van der Kaap Deeder et al. (2014)	584	Inpatient	100%	M: 22.92; SD 5 6.73; Range: 15–45 years	AN R: M:14.18; SD: 1.67; AN BP: M: 16.17; SD: 2.12; BN: M: 20.19; SD: 4.65; EDNOS: M: 20.70; SD: 5.84	Race, ethnicity NR	NR	Belgium	
Curet Santisteban et al., 2017	109	Outpatient	87.20%	M: 14.74; SD: 1.53; Range: 12–17 years	Self Injury Group: M: 17.94; SD: 1.47; Non Self Injury Group: M: 18.42; SD: 2.89	Race, ethnicity NR	NR	Spain	
Young et al. (2018)	78	Outpatient	94.80%	M: 27.38; SD: 9.22 years	M: 16.52; SD: 1.12	Race, ethnicity NR	Educational attainment: university, 52.5%, >10 years schooling, 35.9%. Employed, 57.7%, studying, 26.9%, unemployed 12.8%, homemaker, 2.6%	Australia	
Warsawsky and Handelzalts (2014)	79	Community (pro AN websites)	100.00%	M: 19.99; SD: 5.83; range: 12–46 years	M: 127.52 lbs; SD: 27.06; range: 51–248 lbs	Race, ethnicity NR	NR	Tel Aviv	
Zaitsoff and Taylor (2009)	54	Outpatient	100%	M: 15.8; SD 1.6 years	M: 18.98–19.99—depending on stage of change	Race, ethnicity NR	NR	Canada	

(Continues)

TABLE 1 (Continued)

Author	ED	Duration of ED	DSM/ICD	Study design	Associate	Motivation measure	Findings	NOS
Bussolotti et al. (2002)	AN, BN	AN: M:4.3 years; SD: 4.7 years; BN: M: 4.9 years; SD: 4.7	DSM IV	Retrospective longitudinal study	Marital status	An analogical scale of motivation— assessing the extent to which an individual thinks their ED is a problem and treatment is needed	Individuals with an ED and living with a partner had significantly higher motivation for change than those not living with a partner.	5*
Caballero et al. (2003)	AN, BN, EDNOS		DSM IV	Cohort	Previous ED treatment, preoccupations and rituals.	The Yale Brown Cornell eating disorder scale (YBC EDS) (Sunday et al., 1995) assessing motivation to change an ED behavior	The more prior ED treatment an individual had, the lower their motivation to change ED preoccupations and rituals	2*
Carter and Kelly (2015)	AN, BN, EDNOS		DSM IV TR	Prospective longitudinal study	Self compassion, Social support, shame, Self esteem, Depressive symptoms	Autonomous and controlled motivation for treatment questionnaire (ACMTQ) (Zuroff et al., 2007) assessing readiness for treatment	Autonomous (intrinsic) motivation to change was higher among ED individuals who reported more self compassion and received more social support. Shame was a baseline predictor of controlled (extrinsic) motivation	6*
Darcy et al. (2010)	Lifetime history of AN		EDEQ	Cross sectional	Involvement in treatment choice	ANSOCQ (Rieger et al., 2002) assessing motivation to change AN symptoms or behaviors.	Higher motivation to change (via an advanced SoC) was associated with both self and family based reasoning to seek support for an ED	2*
Dawson et al. (2015)	AN	M: 15.5; Range: 9–44 years	MINI	Cross sectional	TPB variables and psychological symptoms	Predicting intention to recover from anorexia nervosa (PIRAN) (Dawson et al., 2015) assesses intention to recover from an ED. ANSOCQ (Rieger et al., 2002)	Participants who reported more positive intentions and attitudes, and higher perceptions of control scored higher on motivation to change (ANSOCQ)	6*
De Vos et al. (2023)	A DSM 5 ED Diagnosis	M: 11.07 years; SD: 9.96	DSM 5	Longitudinal		The outcomes were used to develop a questionnaire with items rated on a four point Likert scale, ranging from 0 “low” to 4 “high” An example of a checklist item is “The (internal) motivation (willingness to change) of the patient is?”	Higher intrinsic motivation was associated with being in the “low wellbeing” group. However, intrinsic motivation was not associated with ED psychopathology	7*
Fajia et al. (2017)	AN (including previous AN)		EDEQ/ CIA	Cross sectional	Concepts of “pride” in AN	Qualitative interview responses using Grounded Theory. Themes of motivation drawn from individual responses	Feelings of “anorexia pride” were negatively related to motivation to change, and feelings of “shameful pride” positively associated with motivation to change	5*
Gagnon Girouard et al. (2019)	AN, BN		DSM IV	Cross sectional	Meaning attached to ED	Treatment self regulation questionnaire (TSRQ) (Gagnon Girouard et al., 2019) assesses reasons for staying in a weight loss program and this instrument was modified to measure reasons to stay in an ED program	Meanings including “Security” and “mental strength” were negatively associated with motivation to change. There was no significant association between meanings and the evolution	5*

TABLE 1 (Continued)

Author	ED	Duration of ED	DSM/ICD	Study design	Associate	Motivation measure	Findings	NOS
Geller et al. (2009)	AN, BN, EDNOS		DSM IV (eating disorders examination (EDE8))	Longitudinal case series	Symptom improvement, Self esteem and Friendship importance	Readiness and motivation interview (RMI) (Geller et al., 2009) assessing readiness to change ed symptoms or behaviors.	Those who reported increased readiness to change over 5 months, also showed reductions in psychiatric symptom severity, increased global self esteem, and increased importance of friendships as a determinant of self esteem	6*
Halmi et al. (2000)	AN (restricting, purging, binge purging subtypes), HC		DSM IV	Cross sectional	Perfectionism	YBC EDS (Sunday et al., 1995)	The total score on the <i>Multidimensional Perfectionism Scale</i> was significantly related to the total score and the motivation for change subscale score of the YaleBrown Cornell Eating Disorder Scale.	3*
Hasler et al. (2004)	AN, BN, EDNOS	M: 10.5 m; SD: 10.6	DSM IV	Cross sectional	Diagnostic subtype, age, illness duration, and previous treatments, self referral, emotional involvement	Stages of change (SoC) were assessed by University of Rhode Island Change Assessment Scale (URICA) (Hasler, 2003)	Diagnostic subtype, age, illness duration, and previous treatments were not associated with motivational stages in the SoC, self referral was positively correlated with motivational stage. Emotional involvement in the treatment process was correlated with more advanced stages of change	4*
Malmendier Muehlschlegel et al. (2016)	AN		DSM IV	Cross sectional	Friendship functions—help, intimacy and self validation	The motivational stage of change for adolescents recovering from an eating disorder (MSCARED) (Gusella et al., 2003) assesses motivation to change any ED symptoms (grouped)	Three friendship functions—help, intimacy, and self validation were positively correlated with greater motivational stage. Describing friends on an inpatient ward as supportive of adherence to the treatment program was positively associated with greater motivational stage and higher quality friendships	3*
Masheb, and Grilo (2002)	BED	Min 6 months	DSM IV	Cross sectional	What is a reasonable weight loss? Patients' expectations and evaluations of obesity treatment outcomes.	Participants were asked what their primary motivation for seeking treatment was (appearance or health)	Participants motivated by appearance had an average BMI (mean BMI, 35 kg/m ²) that was lower than participants motivated by health (mean BMI, 39 kg/m ²)	5*
Muñoz et al. (2012)	AN, BN, EDNOS		DSM IV	Longitudinal case series	Health Related Quality of Life for Eating Disorders (HeRQoLED)	The Mch stage was measured using one item that reflected the various stages of Prochaska (Prochaska, DiClemente, & Norcross, 1992)	Higher patient reported motivation to change was associated with higher HRQoL	5*

(Continues)

TABLE 1 (Continued)

Author	ED	Duration of ED	DSM/ICD	Study design	Associate	Motivation measure	Findings	NOS
Pauli et al. (2017)	AN	M: 1.05 years; SD: 1.10	ICD 10	Longitudinal case series	Self Related Cognitions and the Coping Across Situations Questionnaire	ANSOCQ (Rieger et al., 2002)	Higher motivation to change was associated with higher self esteem and a more active coping style	7*
Perkins et al. (2007)	BN (long and short duration)	Short BN: M: 2.7; SD: 1.98; Long BN: 10.4; SD: 6.9	DSM IV	Cross sectional	Short versus Long term duration of BN	Bulimia nervosa stages of change questionnaire (BNSOQ) (Martinez et al., 2007) assessing motivation to change BN symptoms or behaviors	Those with a short and long duration of illness did not differ in illness severity, comorbidity, stage of change, motivation, readiness, and confidence to change. Short and long duration EDs differed in the relationship between motivational measures, illness severity, duration and comorbidity	4*
Rodríguez Cano et al. (2012)	AN R, AN BP, BN P, BN NP, EDNOS	M: 57.3 months; SD 64.8; range 10–360	DSM IV	Longitudinal treatment programme (baseline data presented)	Temperament and Character Inventory: Responsibility, Integrity, Self acceptance	Attitude toward change in eating disorders questionnaire (ACTA) (Beato Fernández & Rodríguez Cano, 2003)	Character variables, as <i>Responsibility</i> , <i>Integrity</i> and <i>Self acceptance</i> were associated with higher motivation to change, being protective factors from being in the “Precontemplation” stage	5*
Rankin et al. (2023)	AN		DSM 5	Longitudinal	Experience of self and identity—qualitative responses from therapy transcripts	ANSOQ (Rieger et al., 2002)	Two superordinate themes were generated from qualitative responses: (i) betwixt and between (characterized by ambivalence and motivational indecision about recovery) and (ii) rhythms of motivation. Longitudinal changes in motivation to change were observed alongside identity re negotiations	3*
Stockford et al. (2007)	AN, BN, EDNOS		DSM IV TR	Cross sectional	Illness perception	SOC (Prochaska et al., 2015)	Readiness to change was associated with the identified consequences of an ED, treatment control and personal control as well as cyclical timeline perceptions of an ED	4*
van der Kaap Deeder et al. (2014)	AN, BN, EDNOS	M: 4.33; SD: 1.59; Range: 2–7 years	DSM IV	Longitudinal	Perceived parental autonomy support, Perceived staff and Fellow patient autonomy	The self regulation questionnaire eating problems was employed to assess patients' motives for working on their eating problems	At the start of treatment, perceived parental autonomy support was positively associated with self endorsed motivation. Perceived staff and fellow patients' autonomy support was associated with changes in self endorsed motivation over the course of treatment.	3*

TABLE 1 (Continued)

Author	ED	Duration of ED	DSM/ICD	Study design	Associate	Motivation measure	Findings	NOS
Curet Santisteban et al., 2017	AN R, AN BP, BN, Atypical BN, EDNOS		DSM IV TR	Cross sectional	Self injurious behaviors	ANSOCQ (Rieger et al., 2002)	Finally, relative increases in self endorsed motivation related to relative increases in BMI throughout treatment in a subgroup of patients with AN	4*
Young et al. (2018)	AN R, AN BP	M: 5.65; SD: 7.88 years	DSM 5	Cross sectional	Compulsive exercise	ANSOCQ (Rieger et al., 2002)	There was no significant association between compulsive exercise and motivation to change	5*
Warshawsky and Handelzalts (2014)	AN		EAT 26	Cross sectional	Quality of Relationship Inventory	ANSOCQ (Rieger et al., 2002)	The quality of relationship an individual's father, but not mother, was significantly associated with motivation to recover from ED	4*
Zaitsoff and Taylor (2009)	AN, BN, EDNOS		DSM IV	Cross sectional	Body dissatisfaction, Adaptive parent-adolescent relationships, depressive symptoms	MSCARED (Gusella et al., 2003)	Greater motivation for change was associated with lower body dissatisfaction, more adaptive parent-adolescent relationships and fewer depressive symptoms. There was an association between motivation for change and adolescents' perception of their relationship with their parents. This remained significant after controlling for age, body dissatisfaction and depressive symptoms	6*

Abbreviations: M, Mean; NR, not reported; SD, standard deviation.

TABLE 2 Quality assessment ratings of included studies, using The Newcastle-Ottawa Scale (NOS) for assessing the quality of nonrandomized studies.

Author	Selection	Comparability	Outcome	NOS total score
Bussolotti et al. (2002)	3	1	1	5*
Caballero et al. (2003)	2	0	0	2*
Carter and Kelly (2015)	3	1	2	6*
Darcy et al. (2010)	2	0	0	2*
Dawson et al. (2015)	4	0	2	6*
De Vos et al. (2023)	4	1	2	7*
Faija et al. (2017)	3	0	2	5*
Gagnon-Girouard et al. (2019)	3	0	2	5*
Geller et al. (2009)	4	0	2	6*
Halmi et al. (2000)	3	0	0	3*
Hasler et al. (2004)	4	0	0	4*
Malmendier-Muehlschlegel et al. (2016)	2	0	1	3*
Masheb and Grilo (2002)	3	0	2	5*
Muñoz et al. (2012)	3	0	2	5*
Pauli et al. (2017)	4	0	2	7*
Perkins et al. (2007)	2	0	2	4*
Rodríguez-Cano et al. (2012)	3	0	2	5*
Rankin et al. (2023)	2	0	1	3*
Stockford et al. (2007)	3	0	1	4*
Van Der Kaap-Deeder et al. (2014)	3	0	0	3*
Curet-Santisteban et al., 2017	3	0	1	4*
Young et al. (2018)	3	0	2	5*
Warshawsky and Handelzalts (2014)	2	0	2	4*
Zaitsoff and Taylor (2009)	3	1	2	6*

3.2 | Narrative synthesis of identified associations with motivation to change in EDs

3.2.1 | Individual characteristics

Six studies (25%) that measured individual characteristics were found to be associated with motivation to change, including perfectionism, self-esteem, and temperament.

Three studies investigated the relationship between self-esteem and self-compassion with motivation to change. Increased global self-esteem (measured by the Rosenberg self esteem (RSE) scale) (Rosenberg, 1965) and shape and weight based self-esteem inventory (Serpell et al., 2007), and increased importance of friendships as a determinant of self-esteem, were associated with moving from precontemplation, to contemplation stages in AN, BN, and EDNOS adult women (Geller et al., 2009). Higher self-esteem and a more active coping style was associated with increased motivation to change in a sample of outpatient adolescents with AN in a high-quality study (Pauli et al., 2017). Furthermore, motivation was higher among patients who reported more self-compassion, whereas feelings of shame were associated with “controlled” motivation (changing in response to external or internal

pressures) and was associated with a lower likelihood of change (Carter & Kelly, 2015).

Two studies investigated the relationship between personality traits and motivation to change. In mixed samples of adolescents and adults with AN, higher perfectionism scores were associated with lower motivation to change, which was in turn associated with increased ED symptomatology (Halmi et al., 2000). In addition, the influence of the temperament and character dimensions on “Pre-contemplation” stage was analyzed in AN and BN outpatients finding that some character variables, such as *responsibility*, *Pure-hearted conscience*, and *self-acceptance* showed a negative association with the “Precontemplation” stage and thus lower motivation to change (Rodríguez-Cano et al., 2012).

One study measured individual characteristics using the theory of planned behavior, finding positive intentions to recover, attitudes and higher perceptions of control to be associated with higher motivation to change. However, neither measure of subjective norms, which includes perceptions of pressure from significant others to engage in the behavior (normative beliefs) and motivation to comply with such expectations, relating to recovery or eating or weight restoration, was related to motivation to recover (Dawson et al., 2015). Finally, geographical location, that is, being from Mexico rather than the USA,

was associated with a higher motivation to change among adults with mixed EDs (Caballero et al., 2003).

3.2.2 | Psychological co-morbidity and wellbeing

Five studies (20.8%) investigated the association between psychological co-morbidity and wellbeing and motivation to change. In a large high quality longitudinal study, at baseline, higher intrinsic motivation was associated with belonging to a latent class associated with lower wellbeing, rather than ED psychopathology in a mixed ED outpatient sample (de Vos et al., 2023). In contrast, in another adult outpatient sample of mixed EDs (AN, BN, and EDNOS), a higher motivation to change stage was associated with a higher level of HRQoL, with measures including mental health, physical role and emotional role all significantly associated with increased motivation to change over treatment duration (Muñoz et al., 2012). In a mixed sample of AN, BN, and EDNOS, among motivation “changers,” significant reductions in psychological symptom severity were observed alongside changes in motivation in a longitudinal study, measured by the brief symptom inventory (Derogatis, 2001). This was observed for all measured traits, including somatisation, obsessive-compulsive traits, interpersonal sensitivity, depression, anxiety, hostility, phobic avoidance, ideation, and psychoticism (Geller et al., 2009). The association between compulsive exercise and motivation to change was investigated in one study, finding no significant association (Young et al., 2018).

A significant percentage of adolescents with EDs (AN, BN, and EDNOS) present with suicidal ideation and self-injurious behavior, making the psychopathological profile of these patients more severe. Furthermore, among those engaging in non-suicidal self-injury, motivation to change was significantly lower, with scores in eating disorder inventory (Kappel et al., 2012), the beck depression inventory (Beck et al., 1996), the state-trait anxiety inventory (Spielberger, 1983) all significantly higher (Curet-Santisteban et al., 2017).

3.2.3 | Relationships with others

Seven studies (29.2%) investigated the association between the relationship with others, including friends, family and parents and motivation to change in EDs. Bussolotti et al. (2002) compared adult women with AN and BN based on marital status (Bussolotti et al., 2002). A mixed sample of ED women who lived with a partner were those who presented with greater ED symptomatology and psychopathology, but also with even higher motivation for change. Other studies found that motivation was higher among those receiving more social support (Carter & Kelly, 2015) and those who rate their own friendships as having increased importance had higher motivation to change (Geller et al., 2009) both in a mixed sample of adult EDs. Furthermore, with increases in motivation to change over time, self-esteem associated with friendships also increased in this high quality study (Geller et al., 2009).

In adolescent girls with AN on an inpatient ward, when describing friends on the ward, three friendship functions including *help*,

intimacy, and *self-validation* were significantly and positively associated with greater motivational stage. In turn, this was associated with greater adherence to treatment regimens on the ward (Malmendier-Muehlschlegel et al., 2016). In adolescent girls with AN, BN, and EDNOS in the community, lower body dissatisfaction, more adaptive parent-adolescent relationships and fewer depressive symptoms were associated with greater motivation for change and this association between motivation for change and adolescents' perception of their relationship with their parents remained significant even after controlling for age, body dissatisfaction and depressive symptoms (Zaitsoff & Taylor, 2009).

In an adult inpatient sample of mixed EDs, perceived parental autonomy support related positively to self-endorsed motivation via psychological need satisfaction. Perceived staff and fellow patients autonomy support related to changes in self-endorsed motivation over the course of treatment and resulted in an increased psychological need satisfaction (van der Kaap-Deeder et al., 2014). Finally, when measuring parent-adolescent relationships with adolescent girls with AN in the community, only the quality of relationship with the father, not the mother, was a significant variable in predicting motivation to recover (Warshawsky & Handelzalts, 2014).

3.2.4 | An individual's relationship with their ED

Four studies (16.6%) investigated the association between an individual's relationship with their ED, or their illness perception, and motivation to change or recover. Illness perception, including emotional representations (concern with the emotional impact of the illness [e.g., fear and distress]) and illness coherence (a sense of having a comprehensive understanding of the illness) and consequence (the individual's beliefs regarding the effects and outcome of the illness across a range of domains [physical, social, economic, and emotional]) were negatively associated with being in the precontemplation stage and positively associated with being in the contemplation and action stages in a mixed sample of adolescent and adult EDs (Stockford et al., 2007).

A grounded theory qualitative study investigated the concept of “pride” in women with AN. They identified that pride evolves over the course of AN. Two overarching conceptual categories were identified: “pride becoming intertwined with anorexia” and “pride during the journey toward recovery.” These categories encompassed different forms of pride: “alluring pride,” “toxic pride,” “pathological pride,” “anorexia pride,” “shameful pride,” “recovery pride,” and “resilient pride.” Initially, pride contributed to self enhancement and buffered negative emotions. As AN progressed, pride became a challenge to health and interfered with motivation to change. The immediate and affirming feelings experienced by “anorexia pride” interfered with individuals' motivation to change, while feelings of “shameful pride” promoted it (Fajja et al., 2017).

The meaning attached to an ED, including security (e.g., “To keep my body and life under control”) and mental strength (e.g., “To make me feel strong”, “To give me the feeling that I am more disciplined”)

were negatively associated with motivation toward treatment, meaning that the more a participant endorsed these meanings, the less they reported being motivated at the beginning of treatment. There was no other significant correlation between meanings and ED symptoms. There was no significant association between meanings and the evolution of symptoms and motivation throughout treatment in a mixed sample of AN and BN women (Gagnon-Girouard et al., 2019). Within this sample, participants with BN endorsed higher *avoidance* meaning than participants with AN. Conversely, participants with AN mentioned mental strength and identity meanings more often than participants with BN, although not to a statistically significant level (Gagnon-Girouard et al., 2019). Finally, when measuring changes in motivation alongside treatment engagement, a qualitative study identified a theme of “identity re-negotiations,” including therapy dialogues suggesting a sense that moving from the known (a life dominated by AN), into the unknown, was experienced as a notable source of fear that limited motivation (Rankin et al., 2023).

3.2.5 | Involvement in treatment choice and autonomy

Three studies (12.5%) investigated the perception of the decision to seek treatment as originating within oneself or family to be associated with a stage of change (preparation, action, and maintenance). Reporting external factors as primarily important in the decision to seek treatment was related to lower motivation in the precontemplation and contemplation SoC (Darcy et al., 2010). In an adult outpatient sample of mixed EDs, diagnostic subtype (AN, BN, and EDNOS), age, illness duration, and previous treatments were not associated with motivational stages, but self-referral and emotional involvement in the treatment was positively associated with treatment motivation (Hasler et al., 2004). Self-referred individuals showed significantly lower precontemplation and higher action scores than those referred by others or encouraged to attend treatment by others, including their parents, siblings, teachers, “superiors” (i.e., managers at work) or friends. Finally, treatment control and a perception of a cyclical timeline of symptoms (e.g., “my symptoms come and go in cycles”) were a uniquely associated with being in the maintenance stage in a mixed sample of adults and adolescent EDs (AN, BN, and EDNOS) (Stockford et al., 2007).

3.3 | Measures of motivation to change

Six studies (25%) measured motivation using the ANSOQ (Curet-Santisteban et al., 2017; Darcy et al., 2010; Dawson et al., 2015; Pauli et al., 2017; Rankin et al., 2023; Warshawsky & Handelszalts, 2014; Young et al., 2018), 2 (8.3%) using the SOC (Hasler et al., 2004; Stockford et al., 2007), one (4.1%) using the BNSOQ (Perkins et al., 2007), two (8.3%) using the MSCARED (Malmendier-Muehlschlegel et al., 2016; Zaitsoff & Taylor, 2009), two (8.3%) using the YBC-EDs (Caballero et al., 2003; Halmi et al., 2000), one (4.1%) with the treatment self-regulation questionnaire (TSRQ) (Gagnon-

Girouard et al., 2019), one (4.1%) using the attitudes toward change in eating disorders questionnaire (Rodríguez-Cano et al., 2012), one (4.1%) using the self-regulation questionnaire-eating problems (van der Kaap-Deeder et al., 2014), one (4.1%) using the ACMT questionnaire (Carter & Kelly, 2015), one (4.1%) study using the RMI (Geller et al., 2009), and the remaining using measures of motivation designed within the individual study.

3.4 | Statistical methods

The majority of studies (33.3%), investigated associations via correlation analysis (Pearson's or Spearman's rho), with either one or two tailed tests (Caballero et al., 2003; Carter & Kelly, 2015; Dawson et al., 2015; Gagnon-Girouard et al., 2019; Malmendier-Muehlschlegel et al., 2016; Pauli et al., 2017; Perkins et al., 2007; Stockford et al., 2007; Young et al., 2018). Four studies (16.6%) used ANOVAs to investigate group differences, or differences across precontemplation, contemplation, action or maintenance stages (Bussolotti et al., 2002; Geller et al., 2009; Muñoz et al., 2012; Zaitsoff & Taylor, 2009) and two studies (8.3%) used regression analyses to investigate study defined “predictors” and account for covariates (Rodríguez-Cano et al., 2012; Warshawsky & Handelszalts, 2014). Two studies (8.3%) used Mann-Whitney U tests when nonparametric tests were required (Curet-Santisteban et al., 2017; Hasler et al., 2004), one study (4.1%) used a structural equation model with standardized path coefficients (van der Kaap-Deeder et al., 2014), one study (4.1%) used latent class analysis (de Vos et al., 2023); and three studies (12.5%) analyzed responses qualitatively (Darcy et al., 2010; Faija et al., 2017; Rankin et al., 2023).

4 | DISCUSSION

This review consolidated data on factors associated with motivation to change in individuals with EDs, with the aim of identifying traits or characteristics of individuals with EDs that may lend them to be more or less motivated to change or recover. Where possible, we investigated variables associated with changes in motivation over time. While it is possible that some factors were established prior to an ED, such as relationships with others, all factors in this study were measured at the same time-point as the measure of motivation, or alongside the measure of motivation over time, resulting in only concurrent associations with motivation being discussed here. This leaves the causal status of these relationships unclear.

The findings of this systematic review indicate individuals with EDs broadly report low motivation to change, across several validated and unvalidated measures. However, there are differences in motivation to change within EDs. Although this review does not directly compare individuals based on ED diagnoses or symptoms, individual characteristics, co-morbid psychopathology, lack of treatment autonomy and the protective nature of relationships to be associated with precontemplation or contemplation stages of the SoC model (Prochaska et al., 1997).

Individual characteristics including lower perfectionism (Halmi et al., 2000), character variables associated with responsibility and self-acceptance, self-esteem and self-compassion (Carter & Kelly, 2015; Geller et al., 2009) and an active coping style (Rodríguez-Cano et al., 2012) were most commonly identified in this review as significantly associated with motivation to change. Mental health co-morbidities, measured in three studies, were found to be associated with lower motivation to change, including lower somatisation, obsessive-compulsive traits, interpersonal sensitivity, depression, anxiety, hostility, phobic avoidance, ideation, and psychoticism (Derogatis, 2001; Geller et al., 2009; Young et al., 2018). Conflicting findings were identified with wellbeing and HRQoL, with higher wellbeing associated with lower motivation (de Vos et al., 2023) and higher HRQoL associated with higher motivation to change stage (Muñoz et al., 2012). This apparent contradiction may be explained by the distinction of wellbeing versus HRQoL, with HRQoL perhaps more closely associated with ED symptomatology (Engel et al., 2009). Finally, when measured longitudinally, among motivation “changers,” significant reductions in psychological symptom severity were observed alongside changes in motivation in a mixed sample of adult EDs (Geller et al., 2009).

Relationships, including both relationships with others and an individual's relationship with their own ED, were particularly significant, particularly parental relationships and were identified as important for both adults and adolescents (Malmendier-Muehlschlegel et al., 2016; Warshawsky & Handelszalts, 2014; Zaitsoff & Taylor, 2009). Illness perception (i.e., the negative impact of an ED), pride associated with recovery (Fajia et al., 2017) and the meaning attached to an ED (negative meanings) were all associated with higher motivation to recover (Gagnon-Girouard et al., 2019). Finally, involvement in one's own treatment and autonomy over treatment was significantly associated with higher motivation to recover (van der Kaap-Deeder et al., 2014).

The use of established measures of motivation to recover in EDs, including the ANSOQ and BNSOQ (Rieger et al., 2002), and recent systematic reviews have found that those who are more motivated to recover also have better treatment outcomes (Sansfacon et al., 2020). Interventions aimed at increasing motivation to recover in EDs have focussed on enhancing awareness and understanding of EDs, exploring ambivalence to treatment, identifying goals and values, and increasing self-efficacy (Denison-Day et al., 2018; Geller et al., 2011; Vitousek et al., 1998). However, the current review identifies evidence-based targets that could be integrated into motivation-based interventions. Motivation-based interventions in EDs should take a broader, systemic approach in supporting the individual to foster positive relationships with their support systems, understanding the meaning or role of their ED in their life, alongside support with mental health co-morbidities, low self-esteem and self-compassion and personality traits (e.g., perfectionism) that may make recovery challenging.

This study was only able to identify factors concurrently associated with motivation to change, limiting its ability to discuss causal mechanisms. There is a complex interplay between motivation to recover and ED symptom severity, and all the factors measured here, particularly relational factors, co-morbid psychopathology and relationships with an ED may plausibly be a consequence of low

motivation to recover from an ED. As such, it may be possible to infer the profile or characteristics of an individual who may have low motivation to change, supporting clinicians to be aware and sensitive to factors that might obstruct recovery. However, targeted interventions prior to the onset of illness may be less justified, or likely to succeed, based solely on the data summarized here.

The heterogeneity in measures of motivation presents a challenge in comparing associations across studies, with a small number of studies measuring any given measure limiting the ability to consolidate effect sizes via a meta-analysis. While we were able to identify that on average, low-medium correlations were observed, for the majority of studies it was only possible to comment on the results narratively. Furthermore, individual factors were not associated with multiple measures of motivation, limiting the ability of this study to infer if a factor is associated with a specific element of motivation or readiness to change.

Many studies in this review did not report participant race or ethnicity and based on the data available, the participants included were predominantly white females, limiting the generalization of these findings across cultures and to male EDs. Furthermore, while the age ranged up to 65 years, the majority of participants included were young adults. It is possible that motivation, and factors influencing motivation to recover, change across the lifespan, potentially in a bi-directional way. Research has suggested that factors such as personality traits do change over time (Roberts et al., 2006), with people becoming more agreeable, conscientious, and emotionally stable with age (Lucas & Donnellan, 2011; Roberts & Mroczek, 2008; Soto & Tackett, 2015). Changes may be associated with both biological maturation (Bleidorn et al., 2009; Briley & Tucker-Drob, 2014), and the impact of life experiences (Bleidorn et al., 2018). As such, individual differences associated with motivation to recover, alongside other measures reported here, may change as an individual ages.

The definition of “recovery” might also vary according to the individual and this was not considered in any of the included studies in this review. Among those with EDs with a low BMI, weight gain is commonly considered a marker of “recovery” (Bohrer et al., 2020), even when psychological and social challenges associated with an ED prevail. As such, EDs are known to have particularly high relapse rates following standard treatment protocols (de Rijk et al., 2024). However, the recovery model conceives recovery as a process of personal growth, even in the context of ongoing symptoms and difficulties (Wetzler et al., 2020). This suggests that recovery from an ED may not be a binary state, but a process that is unique to the individual, as is suggested by personal models of recovery (Kinnaird & Cooper, 2024). Investigating and conceptualizing factors associated with motivation to change or recover from an ED relies on common definitions of “recovery,” “change,” or “improvement” being understood similarly by all, both across the literature and within a given healthcare or research context, both between a physician or researcher and the individual with an ED.

Finally, samples of AN, BN, and OSFED/EDNOS were commonly combined despite it being possible that there were differences among the ED groups, with these groups characterized by both ego-syntonic and ego-dystonic ED behaviors. As such, recommendations deriving

from this review can predominantly apply to all EDs, with the exception of associations between perfectionism, functions of friendship, concepts of pride with motivation to change which were measured in AN only. Based on known differences in motivational stage across ED diagnoses (Ackard et al., 2015) and symptoms (Kambanis et al., 2022) future research should consider stratifying samples of EDs to understand factors specifically associated with motivation to change in individual ED diagnoses,

4.1 | Conclusions and future directions

This systematic review consolidated findings on factors influencing motivation to change in mixed samples of adult and adolescent EDs. We identified factors such as individual characteristics, co-morbid psychopathology, lack of treatment autonomy and relationships with others to be associated with motivation to change in individuals with EDs. In addition, motivation to change significantly increased alongside self-esteem and identity re-negotiation when measured longitudinally. While motivational interviewing can typically focus on exploring ambivalence to treatment, identifying goals and values, and increasing self-efficacy, this review suggests motivation-based interventions may be improved by supporting individuals' relationship with others and tailoring interventions according to temperament and personality traits. Although these findings are based on relatively few studies, they do suggest that including family members and an individual's support system as they enter treatment may be effective. Future research should consider factors associated with motivation specific to ED diagnoses, and include participants from diverse backgrounds, non-female populations and across the lifespan to understand specific ED populations most in need of targeted interventions.

AUTHOR CONTRIBUTIONS

Lauren Robinson: Conceptualization; data curation; formal analysis; investigation; methodology; validation; writing – original draft; writing – review and editing. **Michaela Flynn:** Formal analysis; investigation; methodology; writing – original draft; writing – review and editing. **Myra Cooper:** Conceptualization; supervision; validation; writing – original draft; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT

No authors have conflicting interests.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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