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## Predictors of Treatment Outcome in Eating Disorders: A Roadmap to Inform Future Research Efforts

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### Abstract

**Purpose of Review**—With the current review, we provide a brief summary of recent literature that tests clinically observable characteristics at baseline that may impact treatment response, across eating disorder diagnoses. We then provide a critical discussion regarding how researchers may shift their approach to this research to improve treatment implications and generalizability of these findings.

**Recent Findings**—Recent work has broadly replicated prior findings suggesting a negative impact of lower weight status, poor emotion regulation, and early-life trauma on eating disorder treatment outcomes. Findings are more mixed for the relative contributions of illness duration, psychiatric comorbidity, and baseline symptom severity. Recent studies have begun to explore more specific domains of previously tested predictors (e.g., specific comorbidities) as well as previously neglected identity-related and systemic factors. However, recent research continues to use similar sampling techniques and approaches to analysis used in prior work.

**Summary**—We propose that resolving remaining questions and illuminating predictors of treatment outcome in eating disorders requires a new approach to research sampling and study design. Suggested changes that can be applied within a traditional clinical trial framework may yield new insights with relevance across transdiagnostic eating disorder presentations.

### Keywords

Treatment outcomes; Treatment response; Anorexia nervosa; Bulimia nervosa; Binge eating disorder

### Introduction

Meta-analytic data suggest that less than 50% of patients with eating disorders (EDs) who receive evidence-based treatments will fully remit [1], highlighting a critical need to improve intervention outcomes in this population. There is a long history of research exploring clinical and sociodemographic factors that impact treatment that may hold prognostic value for outcomes and can thus be used to inform treatment planning and development (e.g., [2–6]). Several summaries of this work have been published in the past

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decade; some have synthesized work across ED diagnoses [6, 7], whereas others have focused on one clinical presentation or diagnosis, a specific type of treatment or level of care, or predictive factor [3, 8–12].

The current review aims to provide a useful summary for ED researchers and clinicians and to inform next steps in research on treatment outcome predictors through the following: (a) briefly summarizing past investigation of predictors of treatment outcome; (b) reviewing findings and trends from recent work; and (c) highlighting gaps in this literature. Additionally, we provide critiques of current investigative approaches and note suggested changes to our sampling and design approach that may enhance the future impact of this research. Because there is a long history of research in this area and significant breadth of findings, we focus on providing detailed discussion of those articles following publication of a recent meta-analysis that was comprehensive in its inclusion of diagnostic groups, treatment, and types of predictors [6]. Further, to enhance clinical utility, we focus on predictors that can be assessed readily at intake to treatment via interview, rather than moderators and mediators of treatment response [13], or those that may require more invasive, less accessible, or longitudinal methods. Altogether, we propose that taking a broad perspective on trends and evidence from this line of clinical research and considering changes in how we conduct this work is necessary to increase its effectiveness and impact.

## Recent Summary of Findings in Predictors of Treatment Outcome: What is Known

Dedicated investigation of predictors of ED treatment outcome originated in the 1970s–1980s [4, 14] and has burgeoned in the decades since [7]. Many past studies have focused on one specific diagnosis (e.g., anorexia nervosa (AN); bulimia nervosa (BN) [15, 16]) or type of treatment (e.g., cognitive-behavioral therapy (CBT) [17]) or level of care (e.g., inpatient [18]); tested predictors within this line of work are most frequently gathered from medical records or self-report [19, 20]. In the most recent summary of this large body of work, Vall and Wade (2015) conducted a comprehensive systematic review across diagnoses and treatments [6] and aggregated findings from 126 studies (147 included in review) using meta-analytic procedures. Findings indicated that lower ED psychopathology, frequency of ED behaviors (binge eating, purging, exercise), depression and comorbid psychopathology, shorter duration of illness/lower age of onset, fewer family problems, greater motivation to recover, and better interpersonal functioning significantly related to better outcomes at end-of-treatment (EOT); the only predictor explored that did not relate to EOT outcomes was self-esteem.

Second, meta-analytic procedures suggested that lower binge/purge frequency and depression, absence of personality disorders, shorter illness duration/younger age of onset, fewer familial problems, higher self-esteem, better interpersonal functioning, higher BMI, and greater motivation to recover were significantly positively associated with better outcome at follow-up. ED severity and lower comorbid psychopathology did not relate to follow-up outcomes, which the authors attribute to variability in effect sizes across studies. Altogether, results highlighted that while this literature is robust, important limitations

remained, including a predominant focus on exploring ED diagnoses separately (rather than considering transdiagnostic factors that underpin symptom presentations and limiting knowledge regarding whether certain factors are similarly predictive across groups), little consensus and consistency in defining “good outcome,” lack of attention toward neurocognitive and biological factors, and methodological shortcomings (e.g., infrequently reported effect sizes). These critiques and trends have been echoed by other, more targeted reviews exploring predictors of outcome in, for example, CBT for transdiagnostic EDs [9], and family-based treatment (FBT) [8]. In sum, these review efforts provided a strong summary of prior work in this domain, as well as some suggestions for how the scope or focus of this work may be expanded.

## Recent Work in Predictors of Outcome in ED Treatment

In the following section, we provide a brief overview of trends within literature on predictors of outcome since the publication of the comprehensive systematic review noted above (i.e., 2015), with the goal of exploring whether there have been shifts in the design or focus of this research in a manner consistent with recommendations. We organize this key literature by first describing findings on ED-specific predictors of treatment outcome and then outlining findings regarding other non-ED specific predictors. Altogether, many of the same predictors are included in recent work that have been studied historically (e.g., BMI; illness duration); however, recent empirical work has begun to expand the nuance with which these investigations study some factors (e.g., comorbidity), as well as include some predictors and processes previously neglected by prior research (e.g., stigma).

### BMI

In prior review [6], higher BMI predicted better outcome at EOT and follow-up; most of this work was in samples with AN, with only two studies of BN. Recent work focusing on BMI continues to focus on AN samples and underscores the positive impact of higher weight on prognosis across levels of care. For example, for young adult females with AN, beginning outpatient treatment at a higher BMI resulted in improved insight [21], and for adolescents with AN, beginning day treatment at a higher BMI led to improved weight restoration by EOT [22]. In one study with extended follow-up, higher intake BMI decreased the odds of being diagnosed with AN-binge/purge type, relative to being recovered, 22 years later [23]. There are also negative impacts associated with lower BMI in samples with AN; in a severely low-weight sample, adults with lower baseline BMI showed increased risk of medical complications [24], and across age and different settings, starting at a lower BMI contributed to risk of dropout [3].

Also in line with prior review [6], recent work suggests that higher discharge weight positively influences later outcomes. In one study of adolescents and adults with AN, higher weight at inpatient intake and discharge led to significantly greater odds of presenting with a BMI within normal range when assessed 1–5 years later [18]. In transdiagnostic EDs, a higher discharge BMI contributed to greater odds of sustained remission (i.e., Eating Disorder Examination-Questionnaire global score within one SD of norms, no binge/purge behavior in the prior month, and BMI  $\geq 18.5$ ) 3 years later [25].

Consistent with past recommendations, emerging work has begun to explore biological mechanisms that may explain relations between weight status and treatment outcomes. One recent study indicated that lower leptin levels at inpatient discharge in adults with AN were associated with subsequent early weight loss, suggesting this biomarker may be useful to monitor [26]. Altogether, recent research continues to explore BMI as an important prognostic indicator; however, this work focuses primarily on samples with AN, with a relative neglect of other diagnoses in which weight may be relevant, and consistent use of standardized metrics (e.g., BMI) that may or may not capture clinically-relevant, developmentally-sensitive, idiographic weight patterns.

## Illness Duration

Past work has frequently tested illness duration as a predictor of outcome and generally suggests that while shorter illness duration relates to better outcomes, effects may be small and mixed depending on study characteristics (for recent reviews, see [7, 27]). Recent work on length of illness continues to yield inconsistent findings. A recent study of inpatient AN treatment showed that illness duration was associated with a faster rate of weight loss and increased clinical impairment during the 5 years post-discharge [18]. However, other recent studies in samples with AN have found that illness duration is not a consistent predictor of longer term outcomes for inpatients [27] or for EOT outcomes in outpatient services [28]. For example, in adults with AN ( $N=134$ , 97% female) who completed a standard course of outpatient CBT-E in an Australian public mental health service, illness duration or ED severity at baseline did not predict EOT cognitive ED symptoms, quality of life, or BMI [28]. A recent meta-analysis, which evaluated illness duration across 24 studies and, including 6 published since 2015, indicated no overall effect of illness duration on outcomes across AN and BN diagnoses [7]. Together, this body of work highlights a critical need for research that can test plausible explanations for discrepant findings and determine more specifically the contexts under which illness duration may be a useful prognostic indicator.

## Binge/Purge Behaviors

Consistent with past reviews [3, 6], recent work continues to suggest that a diagnosis of AN-binge/purge type may increase risk for poorer outcomes. In a recent study of individuals with AN admitted to inpatient treatment, those with AN-binge/purge type were more likely to be readmitted [29], and in an outpatient trial of 10 sessions of CBT for transdiagnostic EDs, elevated purging behavior was the only predictor of dropout [30].

## ED Severity and Cognitive Symptoms

A prior review indicated that lower baseline ED severity predicts better outcome for AN and BN treatment, though this effect was small and not significant at follow-up, secondary to heterogeneity in effect sizes [6]. For adolescents with AN, findings from one recent study indicated that ED severity predicted less weight gain in the first month of outpatient, parent-focused treatment [31]. Another recent study of young adults with AN indicated that higher body-shape concerns were present in those requiring hospital readmission, and higher baseline drive for thinness predicted a shorter time to readmission [29]. Higher

drive for thinness and/or negative body image also predicted longer term outcome after outpatient AN treatment [32] and inpatient BN treatment [20]. In an aggregate binge eating disorder (BED) sample, no symptom severity category-by-time interactions were significant; however, individuals reporting more than seven episodes of binge eating per week were less likely to achieve remission at EOT [33]. In transdiagnostic samples, severe ED symptoms at intake can predict worse outcome following inpatient treatment [18, 25]. For example, higher drive for thinness and/or negative body image contributed to worse outcomes in a partial hospitalization program across ED diagnoses [34].

However, baseline ED symptom severity does not consistently predict poorer treatment outcome, as indicated by some recent work within the study of CBT for adults and adolescents at various levels of care [15, 35]. To better understand discrepant findings, one recent investigation suggests that exploring subcomponents of body-image disturbance is warranted given that preoccupation with and overvaluation of shape and weight both predicted higher ED symptoms at long-term follow-up in a transdiagnostic sample, rather than body dissatisfaction [36]. Together, these recent findings support the possibility that delineating ED symptoms into subcomponents may yield a more refined understanding of longitudinal treatment outcomes.

## Personality Factors

Several recent studies have explored personality and/or temperamental factors as predictors of outcome, which represents some expansion from the focus of past work. Prior review identified that across ED diagnoses, better self-esteem was associated with improved outcomes at follow-up, but not at EOT [6], findings that were replicated in a more recent review focused specifically on self-esteem and AN treatment [37]. Perfectionism is another documented known risk factor for EDs [38] with both self-oriented and socially prescribed aspects [39]; however, in some recent work, pre-morbid perfectionism was associated with better AN outcomes at EOT [38]. Although prior review also found predictive utility for better interpersonal functioning and improved treatment outcomes, no specific associations were found for emotion regulation [6]. In contrast, more recent work has implicated emotion processing in both enhancing and interfering with treatment. For example, one study among young adults with AN suggested that in both CBT and FBT, emotion dysregulation is related to elevated ED symptoms at EOT [40]. Similarly, another study exploring symptom change in residential treatment suggested that females with AN and BN rated as emotionally dysregulated were less likely to experience clinical change [41]. Consistent with prior work [42, 43], recent work indicates that emotion-regulation skills predict response to treatment in individuals with binge episodes [44, 45]. Taken together, these findings suggest that, across treatment types and diagnoses, targeting affective processing may hold particular utility in improving treatment outcomes.

## Comorbid Psychopathology

Historically, individuals with EDs and psychiatric comorbidities tend to have higher rates of relapse, elevated risk for premature death and suicide, and worse response to intervention [5, 46]; although in prior review, some effects were small and non-significant at follow-up

(mean  $r = 0.25$  [6]). Notably, most past work broadly focused on general comorbidity (i.e., does the individual endorse any psychiatric condition) or focused on depressive symptoms; other clinical presentations, such as trauma disorders, have received more attention recently, and current work continues to evaluate whether psychiatric comorbidity—both generally and more specifically—has prognostic value.

## Mood and Anxiety

Both prior [6], as well as more recent reviews [47], suggest that elevated mood symptoms relate to overall worse ED outcome. One study exploring predictors of readmission to an inpatient unit for AN indicated that baseline depressive symptoms were significantly higher among those readmitted [29]. A longitudinal study following women with AN and BN found that having a baseline diagnosis of major depression was associated with having a diagnosis of AN at 22-year follow-up [23]. For adults with BN, those with greater baseline depression had less improvement in ED psychopathology when receiving either Integrative Cognitive Affective Therapy (ICAT) or CBT-E [48]. Despite a general paucity of research in adolescent BN [49], in the largest randomized controlled trial (RCT) to date, depression was not a non-specific predictor of outcome; notably, those receiving FBT had lower depression at EOT compared with those receiving CBT [50]. For adults with BED, recent analysis of aggregated RCTs indicated that psychiatric comorbidity predicted elevated ED symptoms and binge-eating frequency at discharge across treatment types [51], findings that were similar to those from a study of adults with BED who received outpatient CBT [52]. Within transdiagnostic samples, results from a non-randomized trial of FBT and CBT-E for adolescent EDs (primarily AN and BN) indicated that psychiatric comorbidity led to decreased weight gain in low-weight patients across both treatments [53]. Here, elevated depression is related to worse outcomes in CBT-E compared to FBT, suggesting that family intervention may be preferable for adolescents with elevated depressive symptoms.

Recent findings regarding depression and outcome in transdiagnostic samples are not fully consistent. For instance, naturalistic data within an FBT-informed higher-level-of-care (HLOC) indicated that adolescents with ED-not-otherwise-specified and lower levels of depression demonstrated less change, compared to those with moderate-to-high depression [54]. Another analysis examining HLOC data indicated that in a transdiagnostic sample of both adults and adolescents, higher depressive symptoms were associated with better ED outcomes, quality of life, and functional impairment [55]. In sum, work to date suggests that depression holds prognostic transdiagnostic significance in EDs, particularly among adults. Although less current evidence exists for adolescents, mixed findings suggest future work to discern whether differential treatment response arises from features of baseline mood (e.g., irritability; anhedonia), the treatment type or setting, or other features (e.g., age).

Several recent studies have suggested that anxiety symptoms within treatment may relate to outcome. For instance, one study indicated that higher anxiety symptoms were observed in individuals with AN who readmitted to hospital, versus those who did not [29]. Worry has also been implicated in both short- and long-term treatment outcomes; in one transdiagnostic sample of mostly female young adults receiving intensive outpatient treatment, repetitive negative thinking measured via ecological momentary assessment predicted weighing

and body-checking in the short-term and higher ED symptoms at 1-month follow-up [56]. Similarly, in a sample of adolescents and adults receiving residential and partial hospitalization ED treatment ( $N = 423$ ), worry was found to predict poor scores on measures of ED symptomology and psychological impairment both at EOT and 1-year follow-up [57].

## Trauma and Post-traumatic Stress Disorder

Recent research has begun to focus more explicitly on testing trauma and trauma-related symptoms as a prognostic indicator for treatment outcomes. For adults receiving CBT for BED, higher trauma impact scores suggest lower odds of remission [58]. One longitudinal examination found that childhood abuse and a post-traumatic stress disorder (PTSD) diagnosis predicted binge-eating frequency at follow-up across ICAT and CBT for BED; of note, PTSD moderated the association between childhood abuse and outcome, suggesting that trauma-related symptoms may be most important in determining outcome, rather than exposure to trauma per se [59]. For transdiagnostic EDs, adolescents with no history of abuse demonstrated greater needed weight gain in FBT or CBT-E [53], and childhood trauma leads to lower engagement during inpatient treatment [60]. For adults with BN or other-specified-feeding-and-ED (OSFED), comorbid PTSD contributed to over twice the odds of premature termination from day treatment [61]. On the other hand, another investigation exploring the association between a PTSD diagnosis and clinically significant improvement and treatment response to the Unified Protocol in a transdiagnostic sample suggested no association between trauma symptoms and outcomes [62], highlighting that the effect of trauma symptoms may depend on the treatment provided, although further work is necessary to test this hypothesis. Altogether, continued work supports the assertion that psychiatric comorbidity appears to confer some risk for worse longitudinal ED outcomes; however, the specifics of how these effects may emerge and the contexts (e.g., at the individual, treatment, or systems levels) that may make negative outcomes more likely remain less clear.

## Stigma and Minority Stress

Another recent, emerging trend in predictor research involves exploration of stigma and minority-stress on treatment outcomes. Indeed, evidence suggests that systemic oppression and related minority stress and stigma likely contribute to ED outcomes [63], although historically marginalized populations remain understudied in treatment research [64]. Recent data suggest that sexual and gender minority groups report more severe baseline ED symptoms, perhaps secondary to greater delay in accessing services, as well as more frequent endorsement of traumatic events and bullying, but that these individuals demonstrate faster improvements in treatment compared to cisgender, heterosexual individuals [65]. Findings regarding more severe baseline ED symptoms but faster improvement were replicated in a mixed ED-diagnostic sample receiving partial hospitalization treatment [66] and a sample of sexual minority women presenting to HLOC [67].

Evidence from studies exploring associations between racial/ethnic identity and ED outcomes are more mixed [68], likely due to an indirect evaluation of processes that



may exacerbate (e.g., minority stress) or mitigate (e.g., strength-based factors) risk. In analyses of aggregated RCTs for adults receiving BED treatment, race did not significantly predict global ED severity [69]. Although this study found that Black adults seemed to have comparable or better BED treatment outcomes compared to White individuals, these findings should be contextualized in noting that Black women are less likely to seek and more likely to drop out of ED treatment [70].

Altogether, recent data support that individuals with minoritized identities may be at risk for more severe ED symptoms at intake secondary to structural processes but seem to demonstrate comparable outcomes to individuals from majority groups; however, understanding of the treatment experiences of individuals with diverse identities and how minority stress and/or strengths contribute to outcomes remains limited in scope.

## Summary of Recent Work and Proposed Next Steps

We have briefly outlined historical work regarding baseline predictors of ED outcome and more explicitly described recent research in this domain. On the whole, recent trends in research design, populations studied, and predictor variables selected are consistent with prior work outlined in systematic reviews and meta-analyses, e.g., [3, 5, 6, 9]. While recent research in this area has included some expansion of predictors tested, we propose that shifting approaches in how we are doing this work can increase the usefulness of ongoing efforts, including in improving treatment outcomes. To inform next steps in clinical research, we propose a series of questions that may be useful for professionals in the field to (a) contextualize interpretation of the existing body of work, as well as (b) inform the design and execution of future research focused on prognostic indicators of treatment outcome.

## Who are We Studying?

We propose that expanding sampling and reporting practices to be more inclusive of ED diagnostic presentations and diverse identities will ensure that research on predictors of outcome is optimally informative. As noted previously, most outcome research has examined one diagnostic group and/or specified outcomes relative to diagnostic subgroups within a sample, and this trend continues in recent work. In particular, there is a consistent and predominant focus on AN, less work on BN and BED, and even fewer studies focused on individuals with presentations included in OSFED categories, such as purging disorder and atypical AN. Investigation across diagnostic types will aid in illuminating important knowledge gaps in regard to how and why aspects of metabolism impact ED treatment response (e.g., how metabolic features secondary to weight suppression might impact continuation of binge eating behavior). There may be good reason to circumscribe investigations to diagnostic presentations when attempting to limit confounds (e.g., the impact of weight status on performance on a given cognitive task) or when predictors are symptom-relevant (e.g., frequency of binge episodes in binge-spectrum EDs). However, in general, exploring questions of prognostic factors in heterogeneous, transdiagnostic samples is necessary, particularly given known diagnostic crossover [71], within-diagnosis heterogeneity [72, 73], and transdiagnostic factors shared across ED and other psychiatric diagnoses [74, 75]. Additionally, given high occurrence of OSFED diagnoses in most

clinical settings [76], prioritizing inclusion of individuals with “atypical” EDs will also result in greater external validity of findings.

Samples thus far in ED research have been limited by a predominance of White, cisgender, and affluent females, and studies exploring predictors of outcome infrequently report on a range of identity factors, including socioeconomic and disability status, sexual orientation, and gender identity, among others [64, 68, 77, 78]. Of studies that report this information, samples often overrepresent dominant groups, reflecting known disparities in access to specialty care for EDs [79–81]. Overall, homogeneous sampling and inconsistent reporting of demographic characteristics limits the extent to which predictor research will be generalizable across patient populations as well as critical information required for effectively adapting treatment to suit the needs of diverse populations.

### **Where are Studies Being Conducted?**

With few exceptions, most research regarding prognostic indicators of treatment outcome is conducted in the USA, Australia, and Western Europe. Further, research exploring treatment outcomes is often conducted in academic medical centers or university settings, with fewer investigations that report on predictors of outcome in for-profit treatment centers, community clinics, or with non-specialist providers. While these trends are not unique to research in EDs, they nonetheless create knowledge gaps and significantly limit the external validity of findings for real-world clinical practice. These limitations also hold clinical implications, considering that the majority of individuals who struggle with an ED may not have access to specialized care [80, 82], as well as recognizing notable differences in care delivery across the world [83–85]. It is critical that we expand treatment research to include an intent focus on outcomes from care delivered across the globe, as well as identifying prognostic indicators in real-world clinical settings, as findings from these effectiveness studies will likely differ quantitatively and/or qualitatively from those observed in RCTs or in similarly controlled contexts.

### **What are We Studying?**

As noted in prior reviews [3, 6, 11], a majority of studies have operationalized “good outcomes” using population-normed weight data, raw frequencies of behaviors, treatment dropout, or diagnostic criteria thresholds, with significant variability in metrics used. Although these indices provide useful information, we propose that there are several ways through which revisiting or expanding our definitions of “outcome” may enhance the quality, clinical utility, and external validity of our work. First, empirical and theoretical work that has focused on how to operationalize “recovery” or “relapse” from an ED, e.g. [86, 87], have highlighted the complexity and the multi-faceted nature of outcomes within these populations. While consensus among ED researchers remains elusive, considering expansion of outcome to include metrics beyond weight and behaviors, such as neurocognitive indices, as well as other functional indicators (e.g., quality of life), will provide a more comprehensive test of predictive factors.

Second, as noted above, most of the past work exploring prognostic indicators has defined optimal weight-related outcomes using BMI targets based on population norms; this neither accounts for historic weight suppression [88] or other physiological factors associated with weight loss that may impact longer-term recovery (e.g., [89]). Considering emerging data regarding significant heterogeneity in weight history and the impact of considering historical growth curve data in assessment and treatment [90–93], including more personalized weight data into outcome measurements may result in different findings, particularly for individuals with OSFED diagnoses.

## How are We Studying Clinical Outcomes?

Current research designs and statistical methodologies for outcome predictor research have tested the average, unique effects of theoretically relevant factors in accounting for variability in outcome with parametric, group-based statistics, and pre-to-post longitudinal designs. While these approaches are helpful for understanding broad trends in predicting outcome at the group level, recent data suggests that group-based estimates may be limited in their ability to predict individual trajectory [94]. Accordingly, in light of emerging data suggesting significant within diagnosis heterogeneity in symptom presentation, etiology, and maintenance processes [72] and the promise of idiographic methods for better characterizing person-specific processes in EDs [95], we propose that researchers consider incorporating designs and/or methods that model both averages, as well as heterogeneity in observed effects. In addition to exploring models to better capture complexity, recent work also highlights the potential for using machine learning for outcome prediction [96–98]. Altogether, expanding the types of research designs and statistical analyses used for prediction of treatment outcome may facilitate resolution of discrepant findings and better capture heterogeneity both within- and between-persons.

## Conclusions

While limitations of our circumscribed approach to this review are important to acknowledge, including a focus on self-reported and clinical predictors of outcome to the neglect of other domains (e.g., neurobiological predictors), our focused review yields findings broadly consistent with past meta-analytic reviews and expands these summaries to include several new, clinically relevant predictors of treatment outcome in EDs. Specifically, recent findings continue to suggest a consistent negative impact on ED course and outcome associated with low weight (particularly in AN); emerging yet consistent data appear to support the potential relevance of early-life trauma and emotion dysregulation on outcome. Data regarding the effects of illness duration, psychiatric comorbidity, and symptom severity remain conflicting, and research focused on social determinants of health and neurobiological factors remains limited. We propose that the next steps in this line of work should include changes in sampling and study design, specifically to prioritize a focus on bolstering work on variables for which there is limited or mixed evidence, and in particular, variables that may provide mechanistic evidence for symptom persistence and represent viable treatment targets across transdiagnostic ED presentations.

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