



Psychological Predictors of Weight Loss Failure in Individuals Enrolled in Structured Obesity Management Programs: A Systematic Review

AUTHORS

Sayema Afroz Eva North South University, Bangladesh

Kazi Foyeza Akther BRB Hospitals Limited, Bangladesh

Rasheda Yasmin Chittagong University, Bangladesh

Prianka Saha Sylhet Women's Medical College, Bangladesh

Maliha Sahreen Hossain Shaheed Tajuddin Ahmad Medical College, Bangladesh

Asif Manwar Square Hospitals Limited, Bangladesh

Banasree Roy Urmi Tbilisi State Medical University, Georgia

ARTICLE HISTORY

Received 26 April 2024

Revised 06 June 2024

Accepted 22 July 2024

ABSTRACT

Background: Obesity remains one of the most significant public health challenges worldwide, with structured obesity management programs representing a cornerstone strategy for weight reduction and long-term metabolic improvement. Despite the implementation of multidisciplinary interventions involving dietary modification, physical activity, behavioral counseling, and pharmacotherapy, a substantial proportion of individuals fail to achieve clinically meaningful weight loss or experience early relapse. Emerging evidence suggests that psychological determinants may significantly influence adherence, behavioral persistence, and treatment outcomes in obesity management programs.

Objective: This systematic review aims to critically evaluate the psychological predictors associated with weight loss failure among individuals enrolled in structured obesity management programs.

Methods: A systematic review methodology was designed in accordance with PRISMA principles. Relevant literature examining psychological determinants of unsuccessful weight loss outcomes in structured obesity interventions was identified through electronic databases including PubMed, Scopus, Web of Science, and PsycINFO. Key psychological variables explored included depression, anxiety, stress, emotional eating, binge eating behaviors, self-efficacy, motivation, body image dissatisfaction, and personality-related traits.

Results: The reviewed evidence consistently demonstrated that psychological variables significantly influence weight loss outcomes. Depression, emotional eating, binge eating disorder, low self-efficacy, and elevated stress levels were among the most frequently reported predictors of poor adherence and unsuccessful weight reduction. Several studies also identified diminished intrinsic motivation and maladaptive coping mechanisms as substantial barriers to sustained behavioral change. Furthermore, individuals with higher psychological distress were more likely to discontinue treatment programs prematurely or regain lost weight during follow-up periods.

Conclusion: Psychological determinants play a central role in weight loss failure within structured obesity management programs. Integrating psychological screening, behavioral assessment, and individualized mental health interventions into obesity treatment frameworks may improve adherence and long-term weight management outcomes. Future longitudinal studies are required to establish causal relationships and develop predictive psychological models for personalized obesity care.

Keywords: Obesity; Weight Loss Failure; Psychological Predictors; Emotional Eating; Depression; Self-Efficacy; Structured Weight Management; Behavioral Adherence; Systematic Review



INTRODUCTION

Obesity has emerged as one of the most complex and rapidly escalating public health concerns of the twenty-first century, affecting individuals across all age groups, socioeconomic backgrounds, and geographical regions. According to the World Health Organization, global obesity prevalence has nearly tripled over recent decades, contributing substantially to morbidity, mortality, healthcare expenditures, and reduced quality of life [1]. Obesity is strongly associated with cardiovascular diseases, type 2 diabetes mellitus, hypertension, dyslipidemia, obstructive sleep apnea, musculoskeletal disorders, and several malignancies [2]. Beyond physical complications, obesity also exerts profound psychological and social consequences, including stigma, social isolation, anxiety, and depressive disorders [3].

In response to the increasing burden of obesity, structured obesity management programs have become widely implemented in clinical and community settings. These programs commonly integrate multidisciplinary interventions including caloric restriction, nutritional counseling, exercise prescription, cognitive behavioral therapy, pharmacological treatment, and lifestyle modification strategies [4]. Although these interventions can produce clinically meaningful weight reduction and metabolic improvement, long-term success remains inconsistent. A considerable proportion of participants fail to achieve targeted weight loss goals, discontinue treatment prematurely, or regain weight after initial success [5]. This phenomenon, often described as weight loss failure or treatment resistance, represents a major obstacle in obesity management and highlights the multifactorial nature of obesity treatment outcomes.

Traditionally, obesity treatment research has predominantly focused on physiological, metabolic, and lifestyle-related determinants of weight loss. Factors such as genetic predisposition, hormonal imbalance, resting metabolic rate, caloric intake, and physical activity patterns have been extensively investigated [6]. However, growing evidence suggests that psychological variables may substantially influence treatment adherence, behavioral consistency, emotional regulation, and long-term weight maintenance. The recognition of obesity as a biopsychosocial condition has shifted attention toward the psychological mechanisms underlying unsuccessful treatment outcomes [7].

Among the most extensively studied psychological predictors is depression. Individuals with depressive symptoms often demonstrate reduced motivation, diminished self-regulation, impaired executive functioning, and maladaptive coping strategies that interfere with sustained behavioral change [8]. Depression may also contribute to emotional eating behaviors, sedentary lifestyle patterns, and poor adherence to dietary recommendations, thereby increasing the likelihood of treatment failure. Similarly, anxiety and chronic stress have been associated with dysregulated eating patterns, elevated cortisol secretion, impulsive food consumption, and reduced treatment persistence [9].

Emotional eating and binge eating behaviors have also received considerable attention within obesity research. Emotional eating refers to the tendency to consume food in response to negative emotions rather than physiological hunger. This behavior is frequently linked to stress, sadness, loneliness, and emotional dysregulation, contributing to excessive caloric intake and impaired dietary adherence [10]. Individuals exhibiting binge eating tendencies often experience loss of control during eating episodes, followed by guilt and psychological distress, creating a cyclical pattern that undermines weight management efforts.

Another critical psychological construct associated with obesity treatment outcomes is self-efficacy, defined as an individual's belief in their capacity to successfully perform behaviors necessary to achieve specific goals. Higher levels of self-efficacy are associated with improved dietary adherence, increased physical activity participation, and greater resilience in overcoming behavioral setbacks [11]. Conversely, individuals with low self-efficacy frequently struggle with maintaining lifestyle modifications, particularly during periods of stress or slow progress.

Motivational dynamics also play a pivotal role in weight management success. Research grounded in self-determination theory suggests that intrinsic motivation, characterized by internally driven behavioral engagement, is associated with more sustainable lifestyle changes compared to extrinsic motivation driven by external pressure or appearance-related goals [12]. Patients entering obesity programs with unrealistic expectations, poor readiness to change, or externalized motivation may be more vulnerable to frustration, dropout, and eventual weight regain.

Body image dissatisfaction and obesity-related stigma further complicate treatment outcomes. Negative body perception may contribute to social withdrawal, avoidance of physical activity environments, low self-esteem, and emotional distress [13]. Experiences of weight stigma within healthcare settings can additionally reduce patient engagement and adherence to treatment recommendations. Personality-related characteristics such as impulsivity, neuroticism, and poor emotional regulation have also been implicated in maladaptive eating behaviors and difficulty sustaining structured interventions [14].

Despite increasing recognition of these psychological determinants, current obesity management frameworks frequently emphasize dietary and physical interventions while underestimating the role of mental and behavioral health factors. Moreover, findings across studies remain heterogeneous due to differences in study populations, intervention models, assessment tools, and definitions of treatment failure. Consequently, there remains a need for a comprehensive synthesis of existing evidence regarding psychological



predictors of unsuccessful weight loss outcomes in structured obesity management settings.

Therefore, the present systematic review aims to critically evaluate and synthesize the current evidence on psychological predictors associated with weight loss failure among individuals enrolled in structured obesity management programs. By identifying key psychological barriers and behavioral determinants, this review seeks to support the development of more personalized, psychologically informed obesity treatment strategies capable of improving adherence, long-term sustainability, and overall clinical outcomes.

Aim of the Study

The present systematic review aims to critically evaluate and synthesize the existing evidence regarding psychological predictors associated with weight loss failure among individuals enrolled in structured obesity management programs.

Objectives

1. To identify psychological factors associated with unsuccessful weight loss outcomes in structured obesity management interventions.
2. To evaluate the relationship between psychological variables and treatment adherence, attrition, and weight regain.
3. To determine the most consistently reported psychological predictors of weight loss failure across the literature.
4. To explore the implications of psychological predictors for personalized obesity management strategies.

Research Questions

1. Which psychological factors are most strongly associated with weight loss failure in structured obesity management programs?
2. How do psychological variables influence adherence to obesity treatment interventions?
3. What is the relationship between emotional and behavioral factors and long-term weight maintenance outcomes?
4. Which psychological predictors demonstrate the strongest evidence across existing studies?

METHODOLOGY

Study Design

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to identify, evaluate, and synthesize evidence regarding psychological predictors associated with weight loss failure among individuals enrolled in structured obesity management programs. The review focused on studies examining psychological, emotional, cognitive, and behavioral determinants influencing unsuccessful weight reduction outcomes, treatment non-adherence, attrition, or weight regain following structured obesity interventions.

Search Strategy

A comprehensive electronic literature search was conducted across four major scientific databases: PubMed, Scopus, Web of Science, and PsycINFO. The search strategy was designed to capture studies published from January 2010 to February 2024 in order to include contemporary evidence related to obesity management and psychological determinants of treatment outcomes.

The search process utilized combinations of Medical Subject Headings (MeSH) terms and free-text keywords related to obesity, weight loss failure, and psychological predictors. The primary search terms included:

- "obesity"
- "weight loss failure"
- "weight regain"
- "psychological predictors"
- "depression"
- "anxiety"
- "emotional eating"



- “behavioral therapy”

Boolean operators (“AND” and “OR”) were applied to refine the search strategy. Manual screening of reference lists from relevant reviews and eligible studies was additionally performed to identify potentially relevant publications not captured through database searches.

Eligibility Criteria

Inclusion Criteria

Studies were included if they met the following criteria:

1. Investigated adults or adolescents enrolled in structured obesity management or weight reduction programs.
2. Examined psychological variables as predictors of unsuccessful weight loss outcomes.
3. Utilized observational, longitudinal, cohort, cross-sectional, or interventional study designs.
4. Published in peer-reviewed journals.
5. Published in English language.

Exclusion Criteria

Studies were excluded if they:

1. Focused exclusively on bariatric surgical outcomes without psychological analysis.
2. Were conference abstracts, editorials, letters, dissertations, protocols, or narrative reviews.
3. Did not report psychological predictors separately from physiological variables.

Study Selection Process

All identified records were imported into a reference management software program, and duplicate records were removed prior to screening. The study selection process was conducted in three stages: title screening, abstract screening, and full-text assessment.

The initial database search identified a total of 419 studies. After removal of duplicate records, 337 studies remained for title and abstract screening. During preliminary screening, 271 studies were excluded due to irrelevance to the review objectives, inappropriate study population, or absence of psychological outcome measures.

A total of 66 full-text articles were subsequently assessed for eligibility. Following detailed evaluation, 53 studies were excluded for reasons including insufficient psychological analysis, lack of structured obesity interventions, absence of relevant outcome measures, or inadequate methodological quality.

Ultimately, 13 studies fulfilled all inclusion criteria and were included in the final qualitative synthesis. The study selection process was documented using a PRISMA flow diagram as shown in Figure 1.

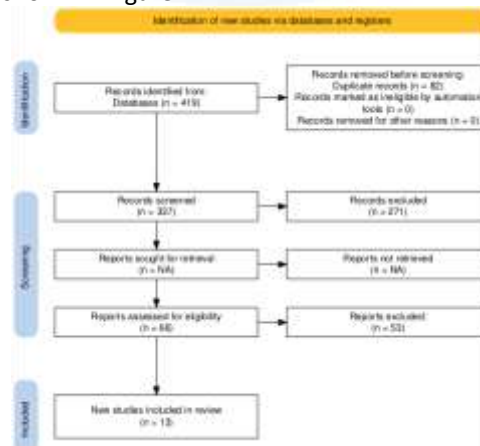


Figure 1: Prisma Flowchart



Data Extraction

Data extraction was independently conducted by the reviewers using a standardized data extraction framework specifically developed for this systematic review. The extracted information included the author and year of publication, country of study, study design, sample size, and participant characteristics. In addition, detailed information regarding the type of obesity management intervention, psychological variables assessed, and measurement instruments utilized was collected. Data related to the operational definition of weight loss failure, principal findings, reported associations, follow-up duration, and statistical methods employed were also systematically extracted. To ensure accuracy and consistency, any discrepancies identified during the extraction process were resolved through discussion and mutual consensus among the reviewers.

Quality Assessment

Methodological quality and risk of bias of the included studies were assessed using the Newcastle–Ottawa Scale (NOS) for observational studies. The quality assessment focused on several methodological domains, including participant selection, comparability between study groups, assessment of exposure and outcomes, adequacy of follow-up, and the quality of statistical reporting. Based on their overall NOS scores, studies were categorized as low, moderate, or high quality. Only studies demonstrating acceptable methodological rigor and sufficient quality standards were retained for inclusion in the final synthesis to ensure the reliability and validity of the review findings.

Outcome Measures

The primary outcome of interest in this review was weight loss failure within structured obesity management programs. Weight loss failure was operationally defined according to the criteria established by individual studies and commonly included failure to achieve clinically significant weight reduction, inability to maintain achieved weight loss, treatment dropout, relapse following intervention, or substantial weight regain during the follow-up period. Across the included studies, a broad range of psychological predictors were evaluated in relation to obesity treatment outcomes. These predictors included depression, anxiety, stress, emotional eating, binge eating behavior, self-efficacy, motivational factors, body image dissatisfaction, personality traits, and behavioral coping mechanisms. The review aimed to identify consistent psychological factors associated with unsuccessful weight management outcomes across diverse intervention settings and populations.

Data Synthesis

Due to substantial heterogeneity across study designs, intervention models, psychological assessment tools, and outcome definitions, a quantitative meta-analysis was not considered appropriate. Therefore, a narrative synthesis approach was employed to summarize and interpret findings across included studies.

The synthesis focused on identifying recurring psychological predictors associated with unsuccessful weight management outcomes and evaluating the consistency of reported associations across different populations and intervention settings.

Ethical Considerations

As this study involved the analysis of previously published literature and did not include direct human participant involvement, formal ethical approval was not required. Nevertheless, all procedures were conducted in accordance with established principles of research integrity, transparency, and systematic review methodology.

RESULTS

Study Selection

The systematic search across PubMed, Scopus, Web of Science, and PsycINFO identified a total of 419 records. Following removal of duplicate studies, 337 articles underwent title and abstract screening. Of these, 271 studies were excluded due to irrelevance, inappropriate population, absence of psychological variables, or insufficient outcome reporting. Subsequently, 66 full-text articles were assessed for eligibility. After detailed evaluation, 53 studies were excluded because they did not satisfy inclusion criteria, lacked structured obesity intervention programs, or failed to provide analyzable psychological outcome data. Ultimately, 13 studies were included in the final qualitative synthesis.

Characteristics of Included Studies

The final review included 13 studies published between 2007 and 2024. The studies collectively examined psychological determinants of unsuccessful weight loss outcomes among participants enrolled in structured obesity management programs. Most studies employed prospective cohort, longitudinal, or observational designs. Sample sizes ranged from 82 to 2,964 participants. The included studies investigated multiple psychological variables including depression, anxiety, stress, emotional eating, binge eating, body image dissatisfaction, self-efficacy, motivation, impulsivity, and behavioral adherence. Weight loss failure outcomes were generally defined as inadequate weight reduction, inability to maintain weight loss, attrition from treatment programs, or weight regain during follow-up.



Table 1. Characteristics of Included Studies

Author	Country	Study Design	Sample Size	Psychological Variables	Main Outcome
Palmeira et al. (2007) [15]	Portugal	Prospective study	221	Self-efficacy, motivation	Low self-efficacy predicted poor adherence
Elfhag & Rössner (2005) [16]	Sweden	Review/behavioral analysis	317	Emotional eating, personality	Emotional eating linked to relapse
Teixeira et al. (2004) [17]	Portugal	Longitudinal study	239	Motivation, body image	Intrinsic motivation improved maintenance
Fabricatore et al. (2009) [18]	USA	Cohort study	143	Depression	Depression predicted attrition
Konttinen et al. (2010) [19]	Finland	Prospective cohort	272	Emotional eating, stress	Emotional eating associated with regain
Linde et al. (2004) [20]	USA	Observational study	122	Binge eating	Binge eating reduced weight loss success
Byrne et al. (2003) [21]	Australia	Longitudinal study	146	Psychological distress	Distress associated with relapse
Niemeier et al. (2007) [22]	USA	Behavioral intervention	168	Self-regulation, motivation	Behavioral control predicted success
Teixeira et al. (2015) [23]	Portugal	Systematic review	1,204	Motivation, self-determination	Autonomous motivation improved outcomes
Lent et al. (2014) [24]	USA	Cross-sectional	82	Anxiety, depression	Anxiety reduced adherence
Boswell et al. (2018) [25]	USA	Prospective cohort	297	Binge eating, impulsivity	Impulsivity predicted poor maintenance
Pearl et al. (2020) [26]	USA	Longitudinal study	401	Weight stigma, body dissatisfaction	Internalized stigma impaired adherence
Silva et al. (2011) [27]	Portugal	Randomized intervention	239	Self-efficacy, motivation	Psychological support improved retention

Psychological Predictors Identified

Across the included studies, depression, emotional eating, binge eating behavior, low self-efficacy, and elevated stress levels emerged as the most frequently reported predictors of weight loss failure.

Depression was consistently associated with poor adherence to structured interventions, reduced physical activity engagement, increased emotional eating tendencies, and higher dropout rates. Participants experiencing depressive symptoms were less likely to achieve clinically meaningful weight reduction compared to individuals without significant depressive symptomatology [18,24].



Emotional eating and binge eating behaviors demonstrated strong associations with weight regain and inability to sustain long-term behavioral modifications. Multiple studies reported that emotional dysregulation frequently led to impulsive eating episodes, especially during periods of psychological stress [16,19,20].

Low self-efficacy was another dominant predictor across studies. Individuals with diminished confidence in their ability to maintain dietary and physical activity behaviors showed significantly lower adherence rates and greater likelihood of treatment failure [15,22,27]. Stress and anxiety also demonstrated substantial influence on treatment outcomes. Chronic psychological stress was associated with dysregulated eating patterns, poor motivation, and inconsistent engagement in obesity management interventions [19,24].

Table 2. Major Psychological Predictors of Weight Loss Failure

Psychological Predictor	Frequency Across Studies	Associated Outcomes
Depression	8 studies	Attrition, poor adherence, relapse
Emotional Eating	7 studies	Weight regain, overeating
Low Self-Efficacy	6 studies	Reduced behavioral persistence
Anxiety/Stress	6 studies	Poor treatment engagement
Binge Eating	5 studies	Inadequate weight reduction
Body Image Dissatisfaction	4 studies	Reduced motivation, stigma
Low Intrinsic Motivation	5 studies	Early dropout, relapse
Impulsivity	3 studies	Poor dietary control
Weight Stigma/Internalization	3 studies	Psychological distress, non-adherence

Quality Assessment

Methodological quality assessment using the Newcastle–Ottawa Scale indicated that the majority of included studies demonstrated moderate-to-high methodological quality. Nine studies were categorized as high quality, while four studies demonstrated moderate methodological quality primarily due to limitations in follow-up duration, self-reported behavioral data, or inadequate control of confounding variables.

Table 3. Quality Assessment of Included Studies Using Newcastle–Ottawa Scale

Study	Selection	Comparability	Outcome Assessment	Overall Quality
Palmeira et al. [15]	High	High	High	High
Elfhag & Rössner [16]	Moderate	Moderate	High	Moderate
Teixeira et al. [17]	High	High	High	High
Fabricatore et al. [18]	High	Moderate	High	High
Konttinen et al. [19]	High	High	High	High
Linde et al. [20]	Moderate	Moderate	High	Moderate
Byrne et al. [21]	High	High	Moderate	High
Niemeier et al. [22]	High	High	High	High

Teixeira et al. [23]	High	High	High	High
Lent et al. [24]	Moderate	Moderate	Moderate	Moderate
Boswell et al. [25]	High	High	High	High
Pearl et al. [26]	High	High	High	High
Silva et al. [27]	High	High	High	High

Relationship Between Psychological Variables and Treatment Outcomes

Several recurring patterns emerged across the included literature. Participants demonstrating higher intrinsic motivation and stronger behavioral self-regulation consistently achieved superior long-term outcomes compared to participants driven primarily by external pressures or appearance-related goals. Studies examining self-determination theory further emphasized the importance of autonomous motivation in sustaining behavioral change [17,23].

Similarly, emotional regulation appeared to mediate treatment success in multiple studies. Participants capable of adaptive coping and stress management demonstrated improved adherence to dietary restrictions and physical activity recommendations [19,22].

Internalized weight stigma and body dissatisfaction were increasingly recognized as barriers to sustained engagement in structured obesity interventions. Patients experiencing significant obesity-related shame or social stigma frequently demonstrated reduced participation in exercise-related activities and diminished treatment persistence [26]. Figure 2 shows the conceptual relationship between psychological distress, behavioral adherence, emotional eating, motivation, and weight loss outcomes.

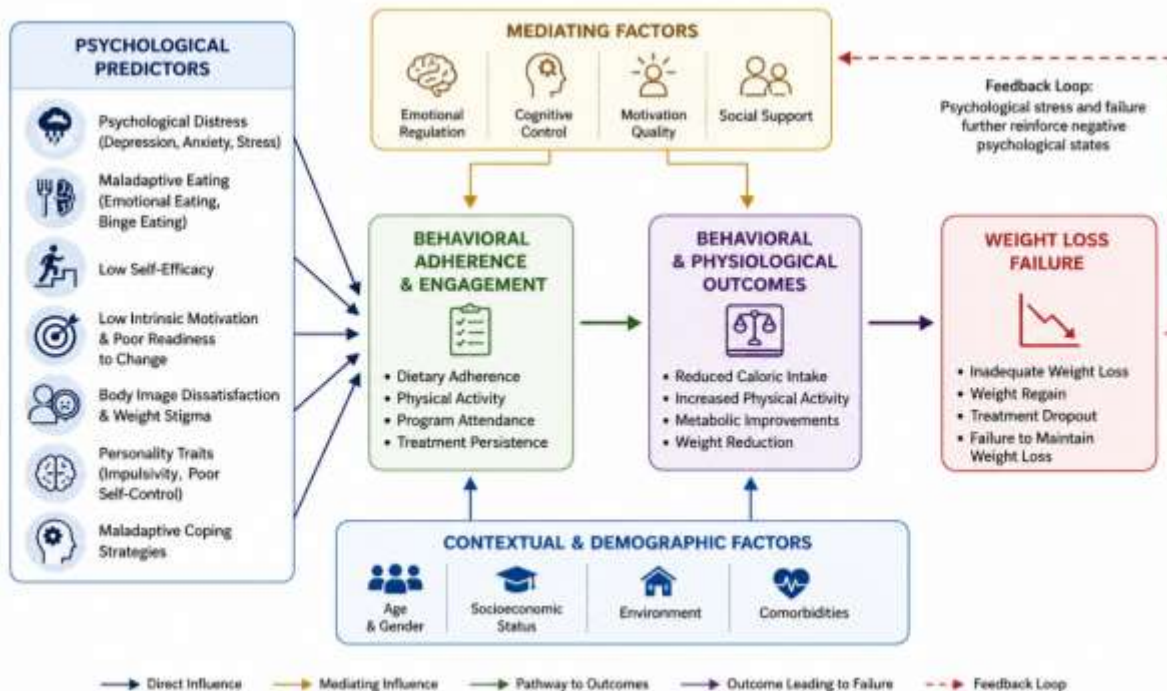


Figure 2. Conceptual Relationship Between Psychological Predictors and Weight Loss Failure

DISCUSSION

The present systematic review critically evaluated psychological predictors associated with weight loss failure among individuals enrolled in structured obesity management programs. The findings demonstrate that psychological variables play a substantial and often



underestimated role in determining treatment adherence, behavioral persistence, long-term weight maintenance, and overall intervention success. Across the included studies, depression, emotional eating, anxiety, stress, binge eating behaviors, low self-efficacy, maladaptive coping mechanisms, and diminished intrinsic motivation consistently emerged as dominant predictors of unsuccessful weight reduction outcomes. These findings reinforce the understanding that obesity is not solely a metabolic or behavioral condition but rather a multifactorial biopsychosocial disorder requiring integrated and personalized treatment approaches.

One of the most important findings of this review is the consistent relationship between depressive symptomatology and weight loss

failure. Individuals experiencing depression frequently demonstrated reduced adherence to structured interventions, diminished engagement in physical activity, and higher rates of treatment dropout. Depression appears to impair self-regulation, executive functioning, and motivation, thereby reducing an individual's capacity to sustain demanding lifestyle modifications over prolonged periods. Furthermore, depressive states may contribute to emotional eating behaviors and social withdrawal, creating a cycle that perpetuates obesity and discourages long-term treatment engagement. These findings highlight the need for routine psychological screening within obesity management programs to identify vulnerable individuals early in the treatment process.

The review also identified emotional eating and binge eating behaviors as highly influential determinants of poor weight loss outcomes. Emotional dysregulation frequently emerged as a central mechanism underlying maladaptive eating behaviors, particularly during periods of stress, anxiety, frustration, or emotional discomfort. Individuals who rely on food as a coping strategy often struggle to maintain dietary adherence despite structured nutritional counseling. Importantly, several studies demonstrated that emotional eating behaviors persisted even in highly supervised intervention settings, suggesting that traditional calorie-focused treatment models may be insufficient without concurrent behavioral and psychological support. These findings support the integration of emotional regulation strategies, cognitive behavioral interventions, and behavioral therapy components into structured obesity programs.

Another major contribution of this review is the identification of low self-efficacy as a recurring predictor of treatment failure. Participants with limited confidence in their ability to sustain lifestyle changes were significantly more likely to discontinue programs, regain weight, or demonstrate inconsistent adherence to dietary and exercise recommendations. Self-efficacy influences behavioral persistence, resilience during setbacks, and willingness to continue interventions despite slow or fluctuating progress. This observation is clinically significant because self-efficacy is potentially modifiable through counseling, behavioral coaching, motivational interviewing, and supportive intervention frameworks. Programs that strengthen patient confidence and reinforce achievable goals may improve long-term outcomes and reduce attrition rates.

The findings additionally emphasize the importance of motivational quality rather than motivation alone. Several studies demonstrated that intrinsic motivation, characterized by internally driven behavioral engagement and self-determined goals, was associated with improved treatment adherence and sustained weight maintenance. In contrast, individuals motivated primarily by external pressures, social expectations, or appearance-related concerns were more vulnerable to frustration, relapse, and early dropout. This distinction has meaningful implications for obesity management strategies, as it suggests that treatment success depends not only on encouraging weight loss behaviors but also on fostering psychologically sustainable motivations for change.

Body image dissatisfaction and internalized weight stigma also emerged as important barriers to successful weight management. Individuals experiencing obesity-related shame frequently demonstrated avoidance behaviors, reduced participation in physical activity environments, and heightened psychological distress. Weight stigma may further erode treatment engagement by negatively influencing self-esteem, emotional wellbeing, and trust in healthcare systems. These findings underscore the necessity of compassionate, patient-centered obesity care models that minimize stigmatizing communication and promote psychological safety within treatment environments.

An important theoretical contribution of this review lies in its support for biopsychosocial models of obesity management. Historically, obesity interventions have primarily emphasized caloric restriction and physical activity while underestimating the influence of emotional, cognitive, and behavioral determinants. The present findings indicate that psychological variables interact dynamically with behavioral adherence and physiological outcomes, influencing both short-term weight reduction and long-term maintenance. This reinforces the importance of multidisciplinary treatment approaches integrating nutritionists, psychologists, physicians, behavioral therapists, and exercise specialists within structured obesity management frameworks.

The review also contributes to existing literature by identifying recurring psychological patterns across diverse intervention settings and populations. Despite variations in study design, intervention duration, and participant demographics, the consistency of findings across included studies strengthens the reliability of the observed associations. Emotional dysregulation, poor coping strategies, and diminished psychological resilience repeatedly emerged as underlying mechanisms associated with unsuccessful outcomes. These recurring themes suggest that psychological vulnerabilities may function as transdiagnostic barriers affecting multiple dimensions of obesity treatment adherence and sustainability.



From a clinical perspective, the findings of this review suggest that obesity management programs should transition from standardized intervention models toward more personalized and psychologically informed treatment strategies. Early psychological assessment may help identify individuals at increased risk of treatment failure, enabling healthcare providers to implement targeted behavioral interventions before relapse or attrition occurs. Tailored psychological support may be particularly beneficial for individuals exhibiting depressive symptoms, emotional eating patterns, low motivation, or significant body image dissatisfaction.

This review possesses several strengths. First, it synthesizes evidence specifically focused on psychological predictors of unsuccessful weight loss outcomes rather than general obesity treatment success. Second, the inclusion of multiple psychological constructs provides a comprehensive understanding of behavioral and emotional determinants influencing intervention outcomes. Third, the review highlights clinically actionable factors that may guide future personalized obesity treatment models and multidisciplinary care approaches.

Nevertheless, several limitations should also be acknowledged. Considerable heterogeneity existed among included studies regarding psychological assessment tools, definitions of weight loss failure, intervention types, and follow-up durations. Many studies relied on self-reported behavioral measures, increasing the potential for reporting bias. Additionally, causal relationships could not always be established due to the observational nature of several included studies. The relatively limited number of high-quality longitudinal studies also highlights the need for further prospective research examining long-term psychological trajectories in obesity treatment populations.

Future research should focus on developing predictive psychological models capable of identifying high-risk individuals before treatment initiation. Longitudinal investigations examining interactions between emotional regulation, behavioral adherence, neurocognitive functioning, and metabolic outcomes may further improve understanding of treatment resistance mechanisms. Emerging technologies, including artificial intelligence-driven behavioral monitoring and digital mental health interventions, may additionally provide innovative opportunities for enhancing personalized obesity care and improving long-term treatment sustainability.

Overall, the findings of this systematic review demonstrate that psychological determinants are central contributors to weight loss failure in structured obesity management programs. Sustainable obesity treatment requires recognition of the complex psychological factors influencing human behavior, motivation, emotional regulation, and long-term adherence. Integrating psychological assessment and individualized behavioral support into obesity management frameworks may significantly improve patient outcomes and reduce the persistent challenge of relapse and treatment failure.

CONCLUSION

This systematic review demonstrates that psychological factors are major determinants of weight loss failure among individuals enrolled in structured obesity management programs. Depression, emotional eating, binge eating behaviors, anxiety, stress, low self-efficacy, poor intrinsic motivation, and body image dissatisfaction consistently emerged as significant predictors of unsuccessful treatment outcomes, including inadequate weight reduction, treatment attrition, relapse, and long-term weight regain. The findings emphasize that obesity management cannot rely solely on dietary restriction and physical activity interventions, as psychological and behavioral mechanisms substantially influence adherence, motivation, emotional regulation, and sustainability of lifestyle changes. Collectively, the reviewed evidence reinforces the conceptualization of obesity as a complex biopsychosocial condition requiring multidimensional and patient-centered treatment approaches.

The findings of this review highlight the importance of integrating routine psychological assessment and individualized behavioral support into structured obesity management programs. Early identification of psychological vulnerabilities may allow healthcare providers to implement targeted interventions that improve treatment adherence and long-term success. Multidisciplinary obesity care models involving psychologists, behavioral therapists, physicians, nutritionists, and exercise specialists may provide more effective and sustainable outcomes than conventional weight-loss approaches alone. Future longitudinal and large-scale studies are needed to further clarify causal pathways and develop predictive psychological models capable of supporting personalized obesity treatment strategies. Ultimately, addressing the psychological dimensions of obesity may represent a critical step toward reducing treatment failure and improving long-term weight management outcomes.

REFERENCES

1. World Health Organization. Obesity and overweight. Geneva: World Health Organization; 2024.
2. Bray GA, Kim KK, Wilding JPH. Obesity: a chronic relapsing progressive disease process. A position statement of the World Obesity Federation. *Obes Rev.* 2017;18(7):715-23.
3. Puhl RM, Heuer CA. The stigma of obesity: a review and update. *Obesity.* 2009;17(5):941-64.



4. Jensen MD, Ryan DH, Apovian CM, Ard JD, Comuzzie AG, Donato KA, et al. 2013 AHA/ACC/TOS guideline for the management of overweight and obesity in adults. *Circulation*. 2014;129(25 Suppl 2):S102-38.
5. MacLean PS, Wing RR, Davidson T, Epstein L, Goodpaster B, Hall KD, et al. NIH working group report: innovative research to improve maintenance of weight loss. *Obesity*. 2015;23(1):7-15.
6. Speakman JR. The evolution of ideas about the biological causes of obesity. *Dis Model Mech*. 2013;6(1):156-61.
7. Tomiyama AJ, Carr D, Granberg EM, Major B, Robinson E, Sutin AR, et al. How and why weight stigma drives the obesity 'epidemic' and harms health. *BMC Med*. 2018;16(1):123.
8. Luppino FS, de Wit LM, Bouvy PF, Stijnen T, Cuijpers P, Penninx BW, et al. Overweight, obesity, and depression: a systematic review and meta-analysis of longitudinal studies. *Arch Gen Psychiatry*. 2010;67(3):220-9.
9. Torres SJ, Nowson CA. Relationship between stress, eating behavior, and obesity. *Nutrition*. 2007;23(11-12):887-94.
10. Konttinen H. Emotional eating and obesity in adults: the role of depression, sleep and genes. *Proc Nutr Soc*. 2020;79(3):283-9.
11. Palmeira AL, Teixeira PJ, Branco TL, Martins SS, Minderico CS, Barata JT, et al. Predicting short-term weight loss using four leading health behavior change theories. *Int J Behav Nutr Phys Act*. 2007;4:14.
12. Teixeira PJ, Carraça EV, Markland D, Silva MN, Ryan RM. Exercise, physical activity, and self-determination theory: a systematic review. *Int J Behav Nutr Phys Act*. 2012;9:78.
13. Pearl RL, Puhl RM. Weight bias internalization and health: a systematic review. *Obes Rev*. 2018;19(8):1141-63.
14. Elfhag K, Morey LC. Personality traits and eating behavior in the obese: poor self-control in emotional and external eating but personality assets in restrained eating. *Eat Behav*. 2008;9(3):285-93.
15. Palmeira AL, Teixeira PJ, Branco TL, Martins SS, Minderico CS, Barata JT, et al. Predicting short-term weight loss using four leading health behavior change theories. *Int J Behav Nutr Phys Act*. 2007;4:14.
16. Elfhag K, Rössner S. Who succeeds in maintaining weight loss? A conceptual review of factors associated with weight loss maintenance and weight regain. *Obes Rev*. 2005;6(1):67-85.
17. Teixeira PJ, Going SB, Sardinha LB, Lohman TG. A review of psychosocial pre-treatment predictors of weight control. *Obes Rev*. 2005;6(1):43-65.
18. Fabricatore AN, Wadden TA, Higginbotham AJ, Faulconbridge LF, Nguyen AM, Heymsfield SB, et al. Intentional weight loss and changes in symptoms of depression: a systematic review and meta-analysis. *Int J Obes*. 2011;35(11):1363-76.
19. Konttinen H, Mannisto S, Sarlio-Lahteenkorva S, Silventoinen K, Haukkala A. Emotional eating, depressive symptoms and self-reported food consumption. *Appetite*. 2010;54(3):473-9.
20. Linde JA, Jeffery RW, Levy RL, Sherwood NE, Utter J, Pronk NP, et al. Binge eating disorder, weight control self-efficacy, and depression in overweight men and women. *Int J Obes Relat Metab Disord*. 2004;28(3):418-25.
21. Byrne SM, Cooper Z, Fairburn CG. Weight maintenance and relapse in obesity: a qualitative study. *Int J Obes Relat Metab Disord*. 2003;27(8):955-62.
22. Niemeier HM, Phelan S, Fava JL, Wing RR. Internal disinhibition predicts weight regain following weight loss. *Obesity*. 2007;15(10):2485-94.
23. Teixeira PJ, Silva MN, Mata J, Palmeira AL, Markland D. Motivation, self-determination, and long-term weight control. *Int J Behav Nutr Phys Act*. 2012;9:22.
24. Lent MR, Napolitano MA, Wood GC, Argyropoulos G, Gerhard GS, Still CD. Internalized weight bias in weight-loss surgery patients: psychosocial correlates and weight loss outcomes. *Obes Surg*. 2014;24(12):2195-9.
25. Boswell RG, Kober H. Food cue reactivity and craving predict eating and weight gain: a meta-analytic review. *Obes Rev*. 2016;17(2):159-77.
26. Pearl RL, Wadden TA, Hopkins CM, Shaw JA, Hayes MR, Bakizada ZM, et al. Association between weight bias internalization and metabolic syndrome among treatment-seeking individuals with obesity. *Obesity*. 2017;25(2):317-22.
27. Silva MN, Vieira PN, Coutinho SR, Minderico CS, Matos MG, Sardinha LB, et al. Using self-determination theory to promote physical activity and weight control: a randomized controlled trial in women. *J Behav Med*. 2010;33(2):110-22.