

Disturbances in eating behavior and body image: The role of attachment, media internalization, and self-objectification

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ABSTRACT

Objective: Research has increasingly demonstrated the need to conceptualize the etiology of eating disorders beyond a sole focus on body image disturbance. Attachment patterns, media internalization, and self-objectification have been previously found to play a potential role in the development and maintenance of eating psychopathology.

Method: This study 1) examined the associations between eating behavior, body dissatisfaction, attachment, media internalization, and self-objectification, 2) evaluated media internalization and self-objectification as mediators of the relationship between insecure attachment patterns and both eating disorder symptomatology and body dissatisfaction, and 3) explored predictors of eating behavior in a sample of 252 Lebanese individuals between the ages of 18 and 25.

Results: Eating disorder symptomatology was positively correlated with body dissatisfaction, insecure attachment patterns, media internalization, and self-objectification. Positive associations between attachment anxiety and avoidance and eating disorder symptomatology were mediated by media internalization and self-objectification. Positive associations between attachment anxiety and avoidance and body dissatisfaction were also mediated by media internalization and self-objectification. Body dissatisfaction, media internalization, attachment anxiety and avoidance, and self-objectification were identified as predictors of eating behavior, with media internalization accounting for the highest variance in eating behavior.

Conclusions: Insecure attachment, heightened susceptibility to internalizing unrealistic media portrayals, and an objectifying self-concept were found to be associated with eating disorder symptomatology and body image dissatisfaction. Findings were interpreted in light of suggested directions and considerations for the design of prevention and intervention programs.

Eating disorders are characterized by severe disturbances in eating behavior and excessive concern about body weight, body size, body shape, and appearance, and have been referred to as the deadliest psychiatric disorder (Arcelus et al., 2011). Over the past decade, eating disorders have become more prevalent and are exhibited by gradually younger demographics (Galmiche et al., 2019). Though the precise prevalence of subthreshold disordered eating behaviors is not yet well-understood due to the reliance on clinically significant criteria as defined by the DSM-5 in disordered eating research, partaking in at least one of the common subthreshold disordered eating behaviors, such as skipping meals, extreme diets, use of laxatives and weight-loss pills, and non-clinically significant levels of bingeing and purging, has been found to be significantly widespread among both women and men across age

groups and populations (de Matos et al., 2021; Simone et al., 2022; Yoon et al., 2020). The lifetime prevalence of eating disorders differs according to diagnosis and gender. It has been found that 1.4% of women and 0.2% of men are diagnosed with anorexia nervosa during their lifetime, compared to 1.9% of women and 0.6% of men that are diagnosed with bulimia nervosa, and 2.8% of women and 1% of men that are diagnosed with binge eating disorder (Galmiche et al., 2019). The typical clinical presentation of eating disorders further includes troubles in the experiencing of one's body weight and shape as a cognitive symptom (American Psychiatric Association, 2022). These body image concerns may be seen as nearly normative among young women, and have been increasingly viewed as such among young men as well (Purton et al., 2019).

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1. Body image, dissatisfaction, and self-objectification in eating disorders

Body image is a complex, multidimensional construct that refers to one's subjective and individual outlook on and perception of their own body (Cash & Pruzinsky, 2002). It comprises cognitions, mental states, feelings, and attitudes toward physical characteristics of the body, including weight, height, shape, thinness and muscularity, physical appearance, and sexual desirability (Grogan, 2021). Body image research has differentiated between negative body image and positive body image, suggesting that the two constructs are conceptually distinct, rather than two opposite ends of a spectrum (Tylka & Wood-Barcalow, 2015). Positive body image encompasses body acceptance and love, inner positivity, and a flexible definition of beauty, whereas negative body image is characterized by self-deprecating body evaluations and feelings of hatred and disgust toward one's appearance and physical attributes.

Negative mental states about one's own body, especially about one's own appearance, coined as "body dissatisfaction", have been found to be symptomatic of eating disorders. Body dissatisfaction differs in degree and intensity from one individual to the other, and is influenced by appearance, size, shape, and exposure to physical ideals of the body (Forbes et al., 2012). Body dissatisfaction was strongly correlated with the onset and maintenance of disordered eating behaviors (Chen et al., 2020; Cruz-Sáez et al., 2020; Mohapatra et al., 2024) and has been found to be a major risk and maintenance factor according to different evidence-based theoretical models and conceptualizations of eating disorders (Cella et al., 2020; Zanella & Lee, 2022). Multiple aspects of body image concerns have been found to correlate with the experience of an eating disorder, including body dissatisfaction, preoccupation with and over-evaluation of body weight, shape, and desire to be thinner in the case of women, and more muscular in the case of men (McLean & Paxton, 2019).

Other scholars focused on the role played by self-objectification, defined as individuals' tendency to view their bodies from an external, third-person perspective, conceiving their own bodies as objects to be looked at, and evaluated by other people (Fredrickson & Roberts, 1997; Karsay et al., 2018). Objectification theory (Fredrickson & Roberts, 1997) argues that the internalization of an observer's view of the physical self is carried out through adherence to external societal pressure, identification with the promoted ideals, and reclamation of normative values through their incorporation in one's self-image. The theory further posits that it is accompanied by feelings of anxiety, shame, and alienation from the bodily self, as self-objectification manifests in the adoption of a critical, objectifying gaze toward the self, a heightened investment in one's appearance and increased efforts to conform to the promoted societal norm. According to objectification theory (Fredrickson & Roberts, 1997), the excessive emphasis on appearance ideals and the promotion of its importance as a central pillar of the self in popular culture, over time, may result in the internalization of a self-objectifying, third-party perspective on the self. In turn, individuals may begin to engage in consistent body surveillance behaviors to monitor their appearance in order to conform to such internalized unrealistic societal expectations. Heightened investment in such surveillance may exacerbate the risk of associated psychological consequences, including increased anxiety and body shame, which may have implications for mental health outcomes. For instance, the experience of such persistent and recurrent monitoring behaviors and critical objectifying self-evaluation result in body dissatisfaction and shame, which factor in the development of disturbed eating habits (Schaefer et al., 2018). Despite being strongly related, body surveillance and self-objectification remain conceptually distinct constructs, as understood within the framework of objectification theory: self-objectification is an internalized cognitive process that comprises the adoption of an external perspective in the perception of one's own body, and the prioritization of appearance over other individual characteristics and

abilities. In contrast, body surveillance consists of the repeated monitoring of one's body and physical appearance to consistently evaluate its conformity to external expectations (McKinley & Hyde, 1996). Body surveillance may be understood as an observable and manifested behavioral outcome of self-objectification, which makes this construct particularly apt for research investigating appearance evaluation and self-monitoring in the context of mechanisms that underlie the development of symptoms of clinical disturbances. Considering such close connection, body surveillance has been previously used as a proxy to assess self-objectification in empirical studies (Carr & Szymanski, 2011; Holmes & Johnson, 2017). The present study also utilizes this approach. As suggested by its implications for mental health outcomes, among clinical samples of women with eating disorders, self-objectification has been shown to be predicted by media internalization, as well as to mediate the relationship between media internalization and a drive for thinness (Calogero et al., 2005).

Although previous research has predominantly focused on the investigation of self-objectification in female samples (Karsay et al., 2018; McKinley, 2011), an emerging body of literature has indicated that male bodies have also experienced objectification, as suggested in studies conducted in Western samples (Daniel et al., 2014; Davids et al., 2019). Elevated levels of self-objectification tend to be associated with a desire for a thinner and less muscular body in women, whereas they were found to be associated with the desire for a more muscular body in men (Oehlhofet al., 2009). Moreover, women have been found to be more prone to self-objectification (Calogero, 2009), although some studies suggest that the experience of such objectification may be a transversal phenomenon to both sexes in select populations, such as the Italian population (Gattino et al., 2023; Rollero & Tartaglia, 2016). Such heterogeneity in conclusions regarding the effect of gender on risk of self-objectification highlights the necessity of investigating this matter in a variety of populations. Furthermore, though the literature concerning self-objectification and its association with disordered eating is significant, there is limited representation of non-Western populations in the existing body of research (Barnhart et al., 2024; Gattino et al., 2023; Schaefer & Thompson, 2018).

2. An attachment perspective on eating disorders

Eating disorders are frequently regarded as pathologies that are solely characterized by troubled body image and abnormal eating behavior. However, they have also been found to be related to impairments in interpersonal functioning (Tasca et al., 2006). One way to conceptualize interpersonal functioning is through attachment theory, defined as the primary bond between mother and infant, which provides the basis of the child's development of a self-image, as well as expectations from the self and others (Bowlby, 1973). If a child is secure within their attachment relationship, they are likely to develop trust in being able to rely on parents in times of need, a basic stepping-stone towards developing a healthy sense of self, and later independence (Bowlby, 1969). Children, however, might develop insecure attachment if they feel their needs are consistently not met by parents. Some children might go on to develop an insecure avoidant/dismissing attachment strategy, minimizing their needs as a result of the expected absence or inappropriate presence of the attachment figures, and the ensuing distress. Other children can be classified as insecure resistant/anxious, in which case they would be more likely to direct their attention toward their unavailable attachment figures, therefore expressing their distress internally and maximizing the expression of their unmet attachment needs. Both types of insecure attachment have been found to predispose children to psychopathology (Tyrrell et al., 1999).

Focusing on eating disorders, attachment research suggests that disordered eating behaviors could serve as an outlet to deflect individuals' attention toward the objective of weight control and appearance change, rather than toward unresolved attachment concerns, as gaining control over food intake and weight fluctuations is

perceived as more achievable than gaining control over unmet attachment needs and the interaction with attachment figures (Cole-Detke & Kobak, 1996). Such theoretical findings are further supported by recent research, as a recent meta-analysis found that attachment insecurity was consistently significantly associated with disordered eating behavior, with a moderate effect size (Faber et al., 2018). Specifically, elevated levels of attachment avoidance and attachment anxiety were linked with disturbed eating behaviors, with respectively weak and moderate effect sizes. Another meta-analysis suggested that individuals meeting the eating disorder diagnostic threshold had higher rates of insecure attachment patterns than control community samples, as assessed by self-report questionnaires, with strong effect sizes for attachment avoidance and attachment anxiety in eating disorder samples (Jewell et al., 2023). Despite findings being conclusive and overall coherent, there is a significant lack of diversity in sample populations of most research investigating the role of attachment states of mind in eating psychopathology, especially regarding non-Western populations.

3. Media internalization and eating disorders

The internalization of idealized appearance standards portrayed in the media refers to the internalization and endorsement of media images and representations that display often unattainable and harmful societal ideals of body size, shape, and appearance, to the extent of cementing those ideals into rules and principles and rigidly following them as such (Thompson et al., 2004). This construct may be referred to as “media internalization” or “the internalization of media influence,” and has been found to be associated with body dissatisfaction (Huang et al., 2021; Rousseau et al., 2020), as appearance concerns appear to increase following the exposure to portrayals of extremely thin and lean individuals in media. Particularly, perceived pressure from media appears to be a risk factor for increased body image dissatisfaction in women as it promotes unattainable thin bodies and unrealistic appearance standards (Åberg et al., 2020). Negative effects on body image were additionally recorded to ensue exposure—as short as 5 min long—to media portraying “thin-and-beautiful” idealized models of women in women with high media internalization (Yamamiya et al., 2005). This implies that women who are more vulnerable to internalizing idealized mediatic portrayals are at an increased risk of developing unhealthy eating habits in hopes of attaining idealized standards of beauty. Furthermore, studies have shown that despite both women and men being prone to internalizing appearance ideals promoted in the media, the idealized standard differs across genders. In particular, it is argued that men tend to aspire for the athletic or muscular ideal, whereas women are inclined to strive for the thin ideal (Flynn et al., 2020; Mōri et al., 2022). Despite such differences in ideals and experiences, exposure and internalization to media that promotes such appearance standards is associated with adverse outcomes related to body image concerns in both men and women (Huang et al., 2021).

Previous research has investigated the formative factors that contribute to the development and maintenance of eating dysfunction and body image concerns. Of particular interest is the tripartite influence model (Thompson et al., 1999, p. 396), which proposes that the foundation that underlies the development of eating and body image disturbance comprises three central influences: the media, parents, and peers. The model further proposes that the associations between such influences and the eating and body troubles are mediated by elevated propensity to engage in appearance comparisons and the internalization of socially promoted appearance paradigms. Therefore, the model argues that exposure to media, individuals, and outlets that promote idealized representations of bodies and appearance influence individuals’ satisfaction with their body and eating habits through the extent to which they are prone to internalizing such messages and identifying with them.

The influence of the internalization of mediatic appearance representations on body image and eating behavior is extensively supported

by research (Stice et al., 2017), and it is argued to be a causal risk factor for the development of eating disorders (Stice, 2002). Particularly among women, internalization of thin ideals portrayed in media is conceptualized to negatively influence body satisfaction and subsequently lead to the engagement in unhealthy eating behavior that might exacerbate into a clinically significant disturbance in hopes of attaining idealized standards of beauty, which is often unhealthy and unrealistic (Bi et al., 2024; Choukas-Bradley et al., 2022; Shen et al., 2022). Media internalization has also been shown to mediate the relationship between attachment anxiety and body image dissatisfaction (Cheng & Mallinckrodt, 2009). This may be explained by the tendency of individuals to seek validation concerning their subjective sense of value and attractiveness from external outlets, such as media, due to their fragile sense of self, resulting from parental unavailability during childhood, preventing the development of an integrated self (Bamford & Halliwell, 2009; Greenwood & Pietromonaco, 2004). This suggests an interaction between different factors that may contribute to the development of disordered eating behaviors.

4. Exploring a multifactorial model: the case of Lebanon

Body image research in British populations has previously suggested that different ethnic backgrounds may be correlated with different levels of body image satisfaction and dissatisfaction, and has further proposed that body satisfaction is significantly predicted by internalization of appearance ideals in the media and ethnic background (Swami et al., 2009). Such findings highlight the necessity to explore models of eating disorder and body image disturbance etiology in various cultural contexts.

Considering its status as a post-colonial, multicultural country (Traboulsi, 2012), Lebanon is characterized by a unique cultural setting wherein individuals are consistently confronted with choices relating to either adopting the traditional, local cultural heritage, or embracing remote cultures to which the Lebanese are increasingly exposed through cross-cultural interactions and globalization efforts (Soubra et al., 2024). It has been suggested that Lebanese individuals’ exposure to a wide variety of external global cultures, such as North American and European cultures, facilitates the process of what has been defined as “remote acculturation”, a phenomenon characterized by a process of cultural alterations in attitudes, beliefs, values, and behaviors through the influence of cross-cultural contact and trade, technology, and mediatic outlets (Ferguson et al., 2017).

The choice to adopt local cultural identities, remotely acquired cultural identities, or postcolonial cultural identities entails exposure to various kinds of sociocultural influences, which have been rarely explored in the literature (Soubra et al., 2024). Existing research has suggested that Lebanese female university students were more vulnerable to mediatic messages and pressures to lose weight, diet, restrict eating, and exercise than their Cypriot counterparts (Koushiou et al., 2020). The same study proposed that this reflects the importance and credibility of media as a source of sociocultural information, resulting from the globalization experienced by the Lebanese population following the war, which comprised the exposure to Westernized media that promoted a new, thin appearance ideal. Significant associations between pressure from televised representations and body dissatisfaction were also found in a sample of Lebanese individuals (Haddad et al., 2019).

Moreover, the formation of the parent-child attachment bond has been argued to be a universal experience, however, the potential impact of cultural characteristics, which are reflected in interpersonal processes, on its development should be heeded. For instance, when compared to conclusions from North American samples, higher levels of attachment anxiety were reported in Lebanese samples (Kazarian & Taher, 2012). Such difference in scores may be attributed to the culturally normative ways of showing affection, considering the use of preoccupation and checking behaviors to express investment in a

relationship, and may not necessarily reflect elevated maladaptive attachment patterns among Lebanese individuals. This reflects the necessity not to presume absolute cross-cultural homogeneity regarding what is presented as secure attachment behavior, particularly within the context of supposedly universal constructs. There exists limited research that explores the role of attachment in relation to disordered eating behaviors and body image concerns in the Lebanese population, with most research exploring such associations within a specific clinical diagnosis (Azzi et al., 2023).

To our knowledge, no studies have specifically investigated the internalization of mediatic portrayals of appearance, as distinct from perceptions of mediatic pressure, in the Lebanese population. Despite the existence of a growing body of eating disorder literature, research on the etiology of eating disorder behaviors and body image disturbances remain limited in the Lebanese population, and existing studies have not tested multifactorial models that may explain the development and maintenance of eating disturbances. Considering the dual, and at times contradictory, influences of remote acculturation and local sociocultural tradition, investigating predictors of eating disorder symptomatology and potential underlying etiological risk factors would significantly contribute to the existing knowledge.

5. The current study

The present study proposes conceptual models for etiological relationships between multiple factors that may contribute to and partially explain the development and maintenance of eating disorders. A predominant majority of the literature draws its conclusions from the study of Western populations, thus making those findings not necessarily applicable to the Lebanese context. This may be exemplified by findings suggesting the existence of cultural differences in the conceptualization of attachment preoccupation and avoidance between Lebanese and American populations (Kazarian & Taher, 2012). There is also little known about the interactive power of the previously introduced constructs in partially shaping individuals' eating behavior. This study, therefore, seeks to fill the existing gap in available data for the Lebanese population, as well as to clarify the relationships between the investigated constructs.

Heeding such aims, it is hypothesized that (1) the internalization of media influence, body dissatisfaction, insecure attachment, and self-objectification will be significant predictors of eating behavior, (2) media internalization and self-objectification will mediate the relationship between insecure attachment patterns and disordered eating symptomatology, and (3) media internalization and self-objectification will mediate the relationship between insecure attachment patterns and body dissatisfaction.

6. Method

6.1. Participants

A total of 308 participants responded to an online survey. The number of respondents was subsequently reduced to 252 following the exclusion of entries with missing data, and participants who were under the age of 18 and over the age of 25 ($M = 19.54$, $SD = 1.77$). Participants were all Lebanese individuals between the ages of 18 and 25 (Table 1). The present study sought to include men and women in its studied sample as previous research has emphasized the necessity to avoid the systematic exclusion of male participants from studies investigating eating behavior where possible (Breton et al., 2023; Edmiston & Juster, 2022). Moreover, heeding the previously discussed gender differences that may be observed in the experience of the explored constructs in this study, a mixed-methods sample was chosen to investigate the relevance of such constructs and processes for both men and women. The population of interest to this study was defined as Lebanese individuals between the ages of 18–25, a developmental or life-history stage that has

Table 1

Demographic characteristics of the sample.

Demographics	N	%
Gender		
Male	47	18.7
Female	196	77.8
Other	6	2.4
Missing/Prefer not to say	3	1.2
Sexual orientation		
Heterosexual	195	77.4
Homosexual	8	3.2
Bisexual	32	12.7
Other	7	2.8
Missing/Prefer not to say	10	4
Marital status		
Single	186	73.8
In a relationship	61	24.2
Married	2	0.8
Divorced	1	0.4
Missing/Prefer not to say	2	0.8
Educational level		
Less than High School diploma	2	0.8
High School diploma	158	62.7
Bachelor's degree	71	28.2
Master's degree	18	7.1
Missing/Prefer not to say	3	1.2

Note. $N = 252$.

previously been termed as “emerging adulthood” (Arnett, 2000; Hochberg & Konner, 2020). A prominent feature of this period is media use and exposure, as reports suggest emerging adults are exposed to media sources for an average of 12 h a day (Coyne et al., 2013). Though this life stage may be characterized by positive mental states and growth (Arnett, 2000), the heightened instability and active social, physical, and mental transitions that prevail in this period might ensue in the emergence of mental disorders including disturbances in eating behavior (Potterton et al., 2019).

6.2. Measures

The *Eating Attitudes Test* (EAT-26; Garner et al., 1982) is a 26-item self-report questionnaire designed to appraise disordered eating behaviors and cognitions putting individuals at risk of having an eating disorder. The items are structured into three subscales: 1) Dieting, including 13 items referring to the avoidance of fattening and a preoccupation with losing weight and achieving thinness, 2) Bulimia and Food Preoccupation, consisting of six items describing persistent cognitions about food, as well as behaviors and thoughts symptomatic of bulimia, and 3) Oral Control, comprising seven items relating to the capacity to control food consumption and the experience of perceived pressure from other people to gain weight. All items are answered using a 6-point Likert-type scale that consists of statements *Always*, *Usually*, *Often*, *Sometimes*, *Rarely*, and *Never*. A cut-off score of 20 or more on the total score (Garner et al., 1982) is indicative of the symptomatology of a potential clinically significant disturbance in eating behavior. The EAT-26 has been extensively validated and found to be a reliable measure of eating disorder symptomatology (Mintz & O'Halloran, 2000; Ocker et al., 2007), and showed good internal consistency in the present study with a Cronbach's alpha of .91.

The *Multidimensional Body-Self Relations Questionnaire-Appearance Scales* (MBSRQ-AS; Brown et al., 1990) is a 34-item short-form of the widely used and validated MBSRQ (Brown et al., 1990), and measures aspects of individuals' body satisfaction and attitudes toward their physical appearance. The present study used two of the MBSRQ-AS subscales: the Appearance Evaluation (AE) which comprises seven items evaluating the overall satisfaction or dissatisfaction with one's appearance, as well as subjective feelings of physical attractiveness subscale, and the Body Areas Satisfaction Scale (BASS) which includes nine items evaluating body satisfaction, precisely assessing satisfaction

with different specific aspects of one's looks. All AE subscale items are answered using a 5-point Likert scale ranging from 1 = *Definitely Disagree* to 5 = *Definitely Agree*, while all BASS items are answered using a 5-point Likert scale ranging from 1 = *Very Dissatisfied* to 5 = *Very Satisfied*. Items from both administered subscales were aggregated to obtain a composite score that was used in the carried out statistical analyses, as previously done in studies utilizing the AE and BASS subscales of the MBSRQ-AS (Menzel et al., 2011; Sperry et al., 2009). The subscales are usually scored such as elevated scores reflect higher body satisfaction, however, in the present study, the subscales were reverse-scored to ensure consistency with the proposed models. Therefore, a higher composite score indicates higher body dissatisfaction. The MBSRQ-AS has been found to be a reliable and valid measure of body satisfaction across languages and populations (Roncero et al., 2015; Vossbeck-Elsebusch et al., 2014). In the present study, it showed a Cronbach's alpha of .91, reflecting good internal consistency.

The *Experiences in Close Relationship Scale-Short Form* (ECR-S; Wei et al., 2007) is a 12-item short form of the extensively used Experiences in Close Relationship Scale (ECR; Brennan et al., 1998) that assesses adult attachment. The ECR-S is a self-report measure in which participants rate the accuracy of certain statements in describing their typical individual experiences in close relationships. It comprises six items that measure attachment anxiety and six items that measure attachment avoidance, with high scores reflecting insecure attachment. All items are rated using a 7-point Likert scale ranging from 1 = *Strongly Disagree* to 7 = *Strongly Agree*. The ECR-S has been found to be a valid and reliable measure of adult attachment (Wei et al., 2007). In the present study, the attachment avoidance and anxiety subscales were both found to have a Cronbach's alpha of .75, indicating good internal consistency for both subscales.

The *Sociocultural Attitudes Toward Appearance Questionnaire-3* (SATAQ-3; Thompson et al., 2004) is a 30-item self-report questionnaire that assesses the extent to which respondents favor societal ideals of physical appearance, as well as the influence of aforementioned ideals on participants' body satisfaction and eating behavior. All items are answered using a 5-point Likert scale ranging from 1 = *Definitely Disagree* to 5 = *Definitely Agree*. The SATAQ-3 comprises four subscales, Internalization-General, Internalization-Athlete, Pressures, and Information, the latter being omitted in the present study, as it only assesses the extent to which participants perceive the media as a source of information, rather than its influence. The Internalization-General subscale comprises nine items assessing respondents' overall internalization of idealized mediatic representations of appearances. The Internalization-Athlete subscale consists of five items evaluating participants' internalization of mediatic athletic representations. The Pressure subscale includes seven items assessing the subjective and perceived pressure to adhere to idealized standards of appearances portrayed in media experienced by participants. As per instrument instructions, select items were appropriately reverse scored and all items were aggregated to obtain a composite score that was utilized in the subsequent statistical analyses. Higher scores on these subscales indicate higher overall media internalization. The SATAQ-3 has been identified as a valid and reliable measure of media exposure and internalization across various populations (Lewis-Smith et al., 2021; Thompson et al., 2004; Warren et al., 2013), and showed good internal consistency in the present study, with a Cronbach's alpha of .96.

The *Objectified Body Consciousness Scale* (OBCS; McKinley & Hyde, 1996) is a 24-item questionnaire that assesses participants' objectified body consciousness, or self-objectification. It consists of three subscales, only one of which, the Body Surveillance subscale, will be used in this study, as it is deemed as a primary measurement for self-objectification (Daniels et al., 2020). It comprises eight items evaluating the frequency at which participants scrutinize their appearance, and whether they cognize about their body in terms of how it feels or how it looks. All items are answered based on a 7-point Likert scale ranging from 1 = *Strongly Disagree* to 7 = *Strongly Agree*. The Body Surveillance subscale of

the OBCS has been found to be a reliable and validated measure of self-objectification (Dakanalis et al., 2017; Sicilia et al., 2020), and was found to have a Cronbach's alpha of .83 in the present study, indicating good internal consistency.

Participants' height and weight were collected, in order to calculate participants' Body Mass Index (BMI). The BMI is currently the most widely used anthropometric measure to estimate fatness (Hall & Cole, 2006), and its estimation based on self-reports has been found to be reliable (Shapiro & Anderson, 2003). In the current study, the participants' BMI category was assigned to them according to the BMI number and classification established by the World Health Organization for adults, which deems a BMI between 18.5 and 24.9 as within the healthy weight range (World Health Organization, 2000).

6.3. Procedure

Ethical approval to conduct this research study was obtained from the university's Institutional Review Board. The present study adopted a cross-sectional quantitative research design. An online survey created using Google Forms was shared with potential participants through different social media platforms including Instagram and LinkedIn, as well as via email to university student population listservs. The study utilized convenience and snowball sampling for participant recruitment, and advertisement for the present study was in the form of a post or email script that comprised a link to the online survey as well as a prompt that provided a general overview of the study's aim to investigate factors that may influence individuals' body dissatisfaction and eating behavior. Informed consent was obtained from participants in the form of voluntary completion of the online survey after the participants read and agreed to the presented informed consent.

6.4. Data analysis

Data analysis was conducted using SPSS, version 27. Data cleaning was performed to ensure the exclusion of entries with missing data and entries that do not meet the inclusion criteria from the studied sample. Pearson two-tailed correlations were conducted to explore the associations between the variables of interest. In an effort to determine whether the investigated variables explained unique variance in disturbances in eating behavior, a hierarchical regression was conducted. The first model included general body dissatisfaction as the predictor variable, with eating behavior as the dependent variable. The second model included attachment avoidance and attachment anxiety as two other predictors, the third model additionally included media internalization, and the fourth and final model further included self-objectification as an additional predictor variable.

Four mediation models were run to analyze the role of media internalization and self-objectification in the associations between insecure attachment and body dissatisfaction and eating behavior. Two mediation analyses were conducted using PROCESS Model 4 (Hayes, 2013) to test the hypotheses wherein either attachment anxiety or attachment avoidance is the independent variable for each analysis. The PROCESS conceptual model was created such as X = attachment avoidance or attachment anxiety, $M1$ = media internalization, $M2$ = self-objectification, and Y = eating behavior. Another two mediation analyses were conducted using the same PROCESS conceptual model, except for the dependent variable, which was considered to be Y = body dissatisfaction.

7. Results

Demographic data for participants are presented in Table 1. Preliminary analyses were conducted to assess the skewness of key variables, which ranged between $-.039$ and $.686$ for body dissatisfaction, eating behavior, attachment anxiety and avoidance, and media internalization, and amounted to 1.305 for BMI, indicating a minor deviation

from normality. Most participants (67.46%) scored within the normal range of the BMI ($M = 22.77$, $SD = 4.56$) as per the World Health Organization classification system (World Health Organization, 2000). Almost half (49.21%) of participants had an EAT-26 score of 20 or above, which implies they are at risk of an eating disturbance (Garner et al., 1982). Specifically, 52% of women and 36.2% of men had an EAT-26 score exceeding the cut-off score. The majority (82.3%) of participants who met the cut-off score were women. The mean EAT-26 score for men was $M = 17.06$, $SD = 12.88$, and for women $M = 24.05$, $SD = 16.05$, while the mean MBSRQ score for men was $M = 45.68$, $SD = 14.07$, and for women $M = 46.23$, $SD = 13.29$.

Correlations between most variables were found to be significant as per Table 2.

The regression results revealed that in Model 1, body dissatisfaction uniquely explained 15.2% of variance in eating behavior. In Model 2, attachment avoidance and attachment anxiety accounted for an additional 4.8% of variance in eating behavior. In Model 3, media internalization explained an additional 19.2% of variance in eating behavior. In Model 4, self-objectification explained an additional 2.9% of variance in eating behavior, with media internalization remaining the best predictor of eating behavior. Table 3 presents the regression results.

The results of the first two mediation analyses indicated that attachment avoidance has a significant total effect on eating behavior ($b = .51$, $SE = .127$, $t = 4.02$, $p = .000$, 95% CI [.261, .763]), and its direct effect was found to be significant as well ($b = .25$, $SE = .103$, $t = 2.41$, $p = .017$, 95% CI [.045, .450]), whereas the effects of the tested mediators media internalization ($b = .18$, $SE = .049$, $t = 6.47$, $p = .000$, 95% CI [.220, .420]) and self-objectification ($b = .08$, $SE = .107$, $t = 3.85$, $p = .000$, 95% CI [.201, .622]) were also found to be significant. Attachment anxiety was also found to have a significant total effect on eating behavior ($b = .63$, $SE = .125$, $t = 5.02$, $p = .000$, 95% CI [.380, .871]). Its direct effect was found to be insignificant ($b = -.0424$, $SE = .118$, $t = -.3585$, $p > .05$, 95% CI [-.276, .191]), whereas the indirect effects of the tested mediators media internalization ($b = .40$, $SE = .050$, $t = 6.76$, $p = .000$, 95% CI [.237, .432]) and self-objectification ($b = .27$, $SE = .114$, $t = 3.80$, $p = .000$, 95% CI [.209, .657]) were found to be significant. Media internalization and self-objectification partially mediated the relationship between attachment avoidance and eating behavior, and fully mediated the relationship between attachment anxiety and eating behavior. These models are represented in Figs. 1 and 2.

Considering the significant negative correlation between body dissatisfaction and BMI, BMI was used as a covariate in the two mediation analyses with body dissatisfaction as the outcome. The results of the other two mediation analyses indicated that attachment anxiety has a significant total effect on body dissatisfaction ($b = .67$, $SE = .096$, $t = 7.06$, $p = .000$, 95% CI [.486, .862]). Its direct effect was found to be significant ($b = .23$, $SE = .098$, $t = 2.33$, $p = .0205$, 95% CI [.036, .422]), as was the indirect effect of self-objectification ($b = .30$, $SE = .094$, $t = 5.08$, $p = .000$, 95% CI [.294, .666]), and that of media internalization ($b = .14$, $SE = .041$, $t = 2.96$, $p = .0034$, 95% CI [.041, .202]). Attachment avoidance was also found to have a significant total effect on body dissatisfaction ($b = .48$, $SE = .101$, $t = 4.81$, $p = .000$, 95% CI [.286,

.682]). Its direct effect was found to be significant ($b = .31$, $SE = .085$, $t = 3.61$, $p = .000$, 95% CI [.139, .474]), as was the indirect effect of self-objectification ($b = .11$, $SE = .088$, $t = 6.12$, $p = .000$, 95% CI [.366, .714]), and the indirect effect of media internalization ($b = .07$, $SE = .040$, $t = 2.88$, $p = .0043$, 95% CI [.037, .196]). BMI was not found to be significantly associated with media internalization or self-objectification, but was significantly related to body dissatisfaction in both models. Media internalization and self-objectification partially mediated the relationships between attachment anxiety and attachment avoidance and body dissatisfaction. These models are represented in Figs. 3 and 4.

8. Discussion

The main aim of this study was to explore the relationships between eating disorder symptomatology, body dissatisfaction, attachment, media internalization, and self-objectification. Eating disorders have been conceptualized as having a complex etiology encompassing biological, behavioral, sociocultural, and psychological influences that interact and result in the development of a clinically significant eating disturbance. Research has been consistent in identifying a correlation between disordered eating and body dissatisfaction (Fairburn, 2008, p. 324; McLean & Paxton, 2019), given that body dissatisfaction and similar bodily concerns are key diagnostic criteria for anorexia nervosa and bulimia nervosa (American Psychiatric Association, 2022). In line with this, findings of this study showed that individuals who scored higher on body dissatisfaction were more likely to engage in problematic eating behaviors.

Moreover, a noteworthy finding in the present study is the considerable prevalence of eating disorder symptomatology within the studied sample, with nearly half of the participants scoring 20 or above on the EAT-26. Such results are higher than previously recorded results reported in community screenings (Koushiou et al., 2020; Parreño-Madrugal et al., 2020), suggesting that the elevated number of positive matches of high-risk individuals in the studied sample may be affected by environmental, cultural, or societal stressors that are unique to the investigated population. A validation study of the Arabic version of the EAT-26 conducted in Lebanon concluded that 23.8% of participants engaged in disordered eating attitudes and behaviors (Haddad et al., 2021). The obtained prevalence in the current study may be attributed to heightened awareness of body-related distress and concerns over one's appearance, increasing engagement in unhealthy eating behaviors. It is important to note that the data collection for the present study was completed following the COVID-19 pandemic, heeding that recent research suggests that the lockdown restrictions may have contributed to an increase in the prevalence of eating disorder risk in various populations (Cooper et al., 2022; Solmi et al., 2021). Such conclusions may be attributed to sampling limitations, including self-selection bias and an insufficiently representative sample. Given the unexpected magnitude of eating disorder symptomatology in this study, future research should investigate the epidemiology of eating disorder risk in the population to clarify conclusions.

Results also suggest that body dissatisfaction, media internalization, self-objectification, and insecure attachment are predictors of overall eating behaviors. Our findings revealed that these constructs explained 42.1% of variance in eating behavior, and in particular, media internalization explained the highest variance in eating patterns. This may suggest a significant influence of susceptibility to media and external sociocultural aspects on eating-related behaviors. Furthermore, it can be argued that vulnerability and exposure to unhealthy and unrealistic body ideals and their subsequent internalization might forecast the engagement in restrictive and otherwise unhealthy eating patterns in an attempt to achieve the adopted, but often unattainable, standards (Bi et al., 2024; Izydorczyk et al., 2020). Such findings are similar to those observed in research conducted in Western samples, which may underline the influence of the rise of globalization and the resulting

Table 2
Correlations between main study variables.

Variables	2	3	4	5	6	7
1. EAT-26	.390 ^b	.303 ^b	.246 ^b	.608 ^b	.544 ^b	.102
2. MBSRQ	–	.390 ^b	.271 ^b	.497 ^b	.554 ^b	.261 ^b
3. ECR-S-Anxiety		–	.106	.431 ^b	.502 ^b	-.017
4. ECR-S-Avoidance			–	.208 ^b	.161 ^a	-.038
5. SATAQ-3				–	.659 ^b	.054
6. OBCS					–	.034
7. BMI						–

Note. $N = 252$.

^a $p < .05$.

^b $p < .01$.

Table 3

Hierarchical regression analysis predicting eating behavior as a function of body dissatisfaction, attachment avoidance, attachment anxiety, media internalization, and self-objectification.

Variable	B	SE B	B	t	R	R ²	R ² change	P
Model 1					.390	.152	.152	<.001
MBSRQ	.472	.070	.390	6.702				<.001
Model 2					.447	.200	.048	<.001
MBSRQ	.339	.077	.280	4.396				<.001
ECR-S-Avoidance	.315	.123	.151	2.566				.004
ECR-S-Anxiety	.367	.127	.177	2.876				.011
Model 3					.626	.392	.192	<.001
MBSRQ	.104	.072	.086	1.433				.153
ECR-S-Avoidance	.228	.108	.110	2.119				.035
ECR-S-Anxiety	.059	.117	.029	.507				.613
SATAQ-3	.399	.045	.531	8.825				<.001
Model 4					.648	.420	.029	<.001
MBSRQ	.027	.074	.022	.358				.720
ECR-S-Avoidance	.2408	.105	.116	2.281				.023
ECR-S-Anxiety	-.050	.118	-.024	-.425				.671
SATAQ-3	.316	.050	.420	6.280				<.001
OBCS	.413	.118	.249	3.482				<.001

Note. *N* = 252.

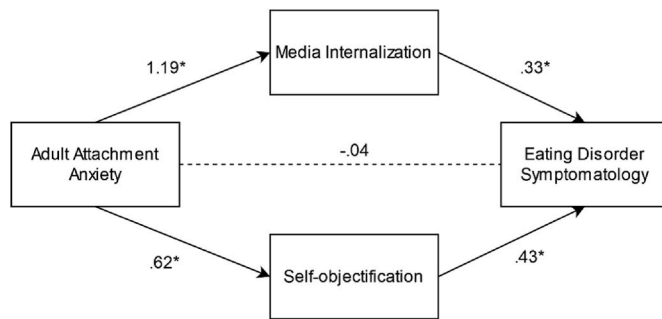


Fig. 1. The mediation model with *Y* = eating behavior and *X* = attachment anxiety. Dashed lines indicate a relationship that was not statistically significant. **p* < .000.

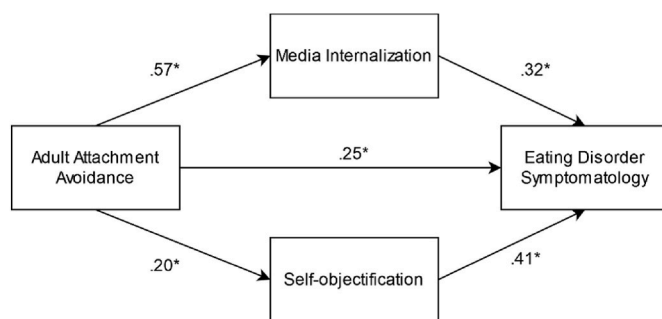


Fig. 2. The mediation model with *Y* = eating behavior and *X* = attachment avoidance. **p* < .01.

increased exposure to Western media (Koushiou et al., 2020), including its promoted appearance ideals, may have on Lebanese individuals' likelihood to internalize such ideals as standards to strive toward through often unhealthy dietary means. Given that this study is the first to investigate media internalization in the Lebanese population, definitive conclusions from the reported findings may not be drawn, however, the current study suggests a potentially universal impact of exposure to and internalization of idealized appearance portrayals in the media that transcends cultural boundaries. Future research may seek to utilize qualitative methods to further investigate the culturally-specific experience of media internalization in Lebanese samples.

Moreover, attachment anxiety and attachment avoidance explained

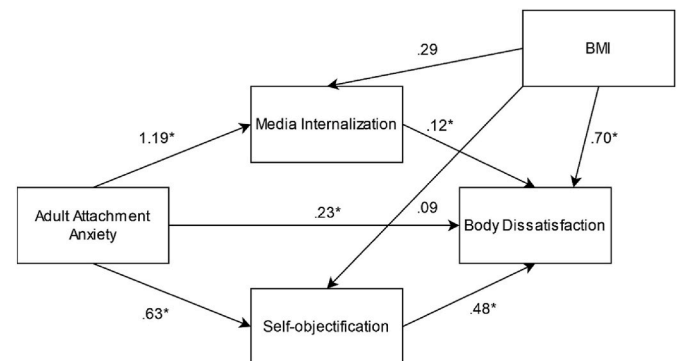


Fig. 3. The mediation model with *Y* = body dissatisfaction and *X* = attachment anxiety. **p* < .05.

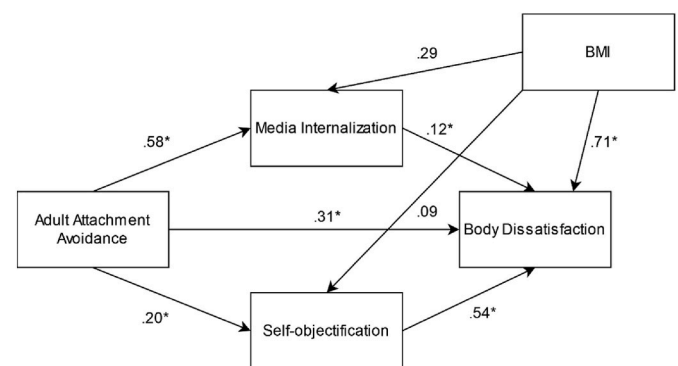


Fig. 4. The mediation model with *Y* = body dissatisfaction and *X* = attachment avoidance. **p* < .01.

the third largest proportion of variance in eating behavior in our study, which captures an attachment and interpersonal perspective of eating behavior. There is substantial existing literature that demonstrated the presence of a significant association between both attachment anxiety and avoidance and eating disorder symptomatology (Tasca, 2019). This may show the impact of unresolved early-childhood caregiving experiences and insecure and disintegrated perspectives on the parent-child relationship, and how it may affect different aspects of the individual's life due to subsequent difficulties or struggles with one's self-concept (Cortés-García et al., 2021; Monteleone, 2023). Findings in

the studied Lebanese sample appear to be in line with conclusions reached in research investigating Western samples, which may highlight the cross-cultural importance of healthy parental bonds and secure internal working models in developing an integrated sense of self to optimize mental health outcomes. Notably, however, the Lebanese individuals in the present study reported mean scores of 4.20 for attachment anxiety and 3.33 for attachment avoidance, which compare to mean scores of 2.86 and 2.47 in a Western-majority sample (Weber et al., 2022), implying cultural differences in attachment between the explored samples, as has been suggested by previous research (Kazarian & Taher, 2012). Therefore, though there appears to be a universal characteristic to the role of attachment in the etiology of eating disorders as reflected by the shared predictive power in various samples, the Lebanese cultural context may shape the degree to which attachment insecurity is experienced, and the way it may contribute to mental health outcomes. Furthermore, findings show that self-objectification accounts for significant variance in eating behavior, which may further prove how maladaptive self-perception and an unhealthy self-concept might drive individuals to engage in disordered eating behaviors as a means to reach an idealized self. The relationship between eating disorder symptomatology and self-objectification is also widely demonstrated (Schaefer & Thompson, 2018), as self-objectification has been found to promote the development and maintenance of the desire and need for unrealistic thinness (Calogero et al., 2005). Only one other study has studied self-objectification in the Lebanese population, and its findings suggest that it is associated with disordered eating behavior in Lebanese gay men (Naamani & El Jamil, 2021), which is in line with the conclusions in the present study. Previous research has discussed the role of cultural in influencing the experience of self-objectification: a cross-cultural study has suggested that lower self-objectification in Iranian women may be associated with the prevalence of modest attire worn in conformity to religious beliefs (Gattino et al., 2023). Given the diversity in cultural and religious affiliations in Lebanon, it may be of particular interest for future research to dissect the experience of self-objectification and understand how it may vary across genders, and cultural and religious identities within the Lebanese population.

Existing research that explores multifactorial models of eating disorder etiology in non-Western populations is limited (Barnhart et al., 2024), and the Lebanese multicultural setting reflects particular characteristics that have implications for understanding the magnitude and impact of sociocultural influences on individuals' well-being. As presented above, the current study has demonstrated that a variety of factors that have been previously established as predictors of eating disorders and body dissatisfaction in Western samples similarly predict such disturbances in the studied Lebanese sample.

Findings of mediational analyses indicated that media internalization and self-objectification mediated the association between insecure attachment and eating disorder symptomatology, and that media internalization and self-objectification mediated the relationship between insecure attachment and body dissatisfaction. Adult attachment research has found that individuals with high attachment anxiety or attachment avoidance are more likely to turn to external mediatic outlets for validation about their body and disintegrated sense of self (Greenwood & Pietromonaco, 2004; Hardit & Hannum, 2012). Consequently, this increased exposure to mediatic influences may lead to an increased vulnerability to internalize such portrayals as standards to abide by, therefore potentially predisposing individuals to developing distorted and negative self-evaluations of and attitudes toward their body and appearance (Grenon et al., 2016). In turn, these individuals are more likely to engage in maladaptive and problematic eating behaviors as a means to attain this idealized portrayal of people that they are exposed to through different media outlets (Cheng & Mallinckrodt, 2009; López-Guimerà et al., 2010). This increased susceptibility to external mediatic influences may increase the perceived pressure to comply to the presented standards and ideals, which results in the experience of increased negative attitudes toward their body and

appearance at a higher rate. This association between higher body dissatisfaction and higher media internalization has been previously reported in the literature (Tasca, 2019; Yamamiya et al., 2005).

As for self-objectification, attachment anxiety is argued to predict and significantly influence an individual's tendency toward self-objectification (Jiao et al., 2022). A consistent state of preoccupation about the state of one's relationships and the feelings of a partner toward oneself, which are behaviors typical of individuals with high attachment anxiety, may lead to growing accustomed to objectifying oneself and adopting an outsider, critical outlook on the self in the attempt to evaluate whether they are adequate enough in the hopes of not being discarded by their partner (DeVillie et al., 2015). This may subsequently result in the individual partaking in efforts to improve their appearance as a way to become more worthy of their partner's love (Jiao et al., 2022). The correlation between attachment avoidance and self-objectification in this study may be explained by the tendency of individuals high in attachment avoidance to overly rely on themselves and strive for absolute independence (Bretaña et al., 2022), and avoid closeness and emotional connections with other people, which in turn may drive them to look at themselves through an objectifying, third-person lens to evaluate their own worth and appearance as though they were someone else. Then, such self-objectifying attitudes may lead to the manifestation of problematic eating behaviors throughout the venture for a better body. Furthermore, our findings revealed that a higher BMI, which has been consistently used in research as a surrogate indicator of fatness, was associated with higher body dissatisfaction. This is in accordance with previous research that found BMI to predict lower body satisfaction in various samples (Erbil, 2013; Paans et al., 2018; Riley et al., 1998; Watkins et al., 2008). Existing studies exploring self-objectification tendencies among Lebanese people are limited, discouraging the generalization of the observed results to the wider Lebanese population, though the associations recorded between self-objectification and the other constructs explored in the study have strong implications for future research and treatment (Tiggemann, 2013).

8.1. Limitations and considerations for future research

Despite this study being the first to explore the proposed conceptual models for the etiology of eating disorders, particularly in an under-researched area like Lebanon, it is not without limitations. The majority of the studied sample consisted of women, which may have caused an overrepresentation of the female gender in the data analyses. The study did not explore the role of gender in the proposed models, despite established evidence that suggests it differentially influences individuals' experiences of eating disorders and body image concerns. The sample studied was a sample of convenience, as data collection relied on individuals' access to social media platforms. This may restrict the generalizability of the data to the Lebanese population or the worldwide population as a whole. Furthermore, the current study sought to investigate the internalization of appearance ideals in a range of mediatic outlets, but did not specifically examine social media platforms, despite them becoming a dominating force in media consumption. Statistical analysis in this study relied on cross-sectional data, which prevents the inference of causality. Data were exclusively collected through the use of self-report measures, at a single time point, which is a design that may be subject to mono-method bias (Heppner et al., 2015). Future research could explore the proposed conceptual model in samples more equivalent by gender, or seek to test its validity in clinical samples of individuals diagnosed with eating disorders to determine if such factors continue to operate transdiagnostically. Moreover, further sociodemographic factors, including ethnicity, racial identity, religion and spirituality, sexual orientation, and gender identity should be considered in future research to further understand the role of intersectionality in the proposed models, and how such factors may be experienced by minority populations.

Further research, especially longitudinal and experimental research that investigates the causal relationships between such factors and eating disorders symptomatology and body image concerns, is needed to design the best tailored interventions and to identify factors that may prevent the development of disturbances, such as positive self-view and adaptive interpersonal relationships. Existing interventions that have been shown to be effective in select populations, for instance, among women, Westerners, and young adults, should be tested in various other populations as appropriate to promote tailored treatment to best optimize risk and symptom reduction according to the sociocultural characteristics and unique attributes of each population. At present, there is limited research that explores the incorporation of attachment-based techniques, practices that promote the development of an integrated self-concept, and media literacy exercises in therapeutic interventions and preventative measures in Lebanon. Findings suggested by research proposing conceptual etiological models such as the present study may encourage the development of such clinical and therapeutic research to determine the effectiveness and culturally-sensitive characteristics of the application of such techniques in treatment to promote growth, symptom reduction, and overall well-being.

8.2. Clinical implications

This study has potential implications for prevention and intervention. Findings highlight the necessity for early prevention that aims to encourage responsive and sensitive care in the parent-child bond early on in childhood. A possible way to prevent the reliance of individuals on media for validation and guidance may be for parents to maintain a supportive relationship with their children throughout childhood and adolescence for them to develop an integrated sense of self less prone to external negative influence. Some existing prevention programs adopt a cognitive-behavioral approach that targets individuals' media literacy and their internalization of appearance-related sociocultural pressures, and have been found to successfully reduce psychopathology onset risk in vulnerable populations (Koreshe et al., 2023). Moreover, the *Body Project*, a dissonance-based preventive program wherein female participants criticize and dismantle the thin ideal, has been shown to significantly limit the development of eating disturbances (Stice et al., 2013).

For clients who present eating disorder symptomatology and body image concerns, gathering information about the client's attachment history, their present attachment patterns, their self-evaluation, and their relationship with mediatic portrayals of people may allow for a better understanding of the clients' problematic behaviors or body evaluation. Existing research has demonstrated the importance of addressing the experienced effects of exposure to pressures in the media on disordered behaviors and potentially integrating an exploration of a healthier approach to media to central treatment goals (Fitzsimmons-Craft et al., 2020; Sadeh-Sharvit, 2019). Existing reviews of attachment-inspired approaches for eating disorders have highlighted that attachment interventions benefit from targeting individuals' self-concept, modifying maladaptive attachment patterns, elevating reflective functioning, and improving emotional regulation (Szalai, 2019).

9. Conclusion

Based on the above-reported study findings, insecure attachment, media internalization, and self-objectification have been found to play a significant role in the development and maintenance of body image issues and disordered eating behaviors. According to the proposed conceptual models, those factors interplay in influencing individuals' functioning. This study highlights the necessity to heed the importance of attachment in fostering adaptive functioning throughout the lifespan, and how it may affect the individual's perception of themselves, their vulnerability to external pressure and influences, and their eating behaviors.

The data that support the findings of this study are available from the corresponding author upon reasonable request.

CRediT authorship contribution statement

Maissane Nasrallah: Writing – review & editing, Writing – original draft, Methodology, Formal analysis. **Rudy Abi-Habib:** Writing – review & editing. **Pia Tohme:** Writing – review & editing, Writing – original draft, Conceptualization.

Ethics

Ethical approval to conduct this research study was obtained from the university's Institutional Review Board.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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