# Body Dissatisfaction and MEB

Subjects: Nursing

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The present study aimed to quantify the relationship between body dissatisfaction and morbid exercise behaviour (MEB).

problematic exercise | exercise dependence | exercise addiction | body image | body shape | body dissatisfaction

## 1. Introduction

Exercise is defined as a planned, structured, and repetitive sub-form of physical activity aimed at improving fitness and health [1]. However, research has shown that for a minority of individuals, exercise may turn into a non-necessarily healthy and even problematic behaviour [2]. For instance, when exercising interferes with individuals' social relationships or professional obligations, or when the impossibility of engaging in exercise results in increased depression and/or anxiety symptoms [3][4]. Irrespective of the multiplicity of terms used to refer to this kind of behaviour (e.g., compulsive exercise, exercise dependence, exercise addiction, etc.) [5], the common element underlying the phenomenon under consideration (which in the present study will be generically referred to as morbid exercise behaviour; MEB) [6][7] is that exercise becomes increasingly uncontrollable, therefore becoming a source of physical and/or psychological harm [2]. In view of these considerations, it is necessary to clarify the mechanisms involved in the emergence of this unhealthy form of exercise.

According to psychological models, MEB may be explained by individual differences in the goals and expectations associated with engaging in the behaviour [4], such as those concerning the improvement of body attributes [8][9][10]. This is not surprising given that body dissatisfaction (i.e., evaluating one's own body negatively) [11] is a very common experience across different populations [5][12], as well as the potential that exercise has to modify body features [13].

Two different mechanisms may be involved in the process whereby experiencing body dissatisfaction may lead to MEB [4]. Firstly, there is a negative reinforcement mechanism, which in this context implies that exercising is fuelled to avoid negative body-related consequences that may emerge as a result of not engaging in the behaviour (e.g., feeling guilty about missing an exercise session and losing an opportunity to compensate for caloric intake), an action that may subsequently translate into increased body fat. Secondly, there is a positive reinforcement mechanism, which implies exercising in the hope of obtaining a body-related pleasurable reward (e.g., increased muscle tone) [2].

To date, numerous studies have examined the association between body dissatisfaction and MEB [14][15][16][17]. Overall, findings from these studies suggest that body dissatisfaction and MEB are positively associated. However, estimates of the association between these two variables have been found to vary widely across studies [18][19][20], without the reasons for these differences having been examined by employing meta-analytic techniques. Gaining deeper insight into the relationship between body dissatisfaction and MEB, and further considering the factors that may account for such a relationship, could contribute to guide professional practice of exercise and health practitioners. Additionally, identifying possible gaps in the extant literature may inform future research concerning the aetiology of MEB.

# 2. Discussion

The present study is the first to provide evidence on the relationship between body dissatisfaction and MEB using meta-analytic techniques. Results derived from 41 effect sizes from 33 studies consisting of 8,747 participants showed a small but near to moderate positive relationship between body dissatisfaction and MEB. Additionally, the relationship under consideration was not found to differ across male and female individuals, nor to depend on variables such as BMI, age, % of Whites in the sample, study quality, or MEB measure. Conversely, the results showed that the relationship between body dissatisfaction and MEB tends to be stronger in published and more recently conducted studies. These findings extend current knowledge on MEB by quantifying the relationship between this unhealthy form of exercise and one of its potential antecedents. The main implications drawn from the results obtained are discussed below.

## 2.1. Overall Effects

Consistent with psychological models of MEB [4], the results here reinforce the notion that the body improvement-related goals and expectations underlying body dissatisfaction experiences may play an important contributory role on the emergence of MEB [8][9][10]. Findings from the present study also extend the number of possible pathology-related outcomes of body dissatisfaction for which there is evidence at the meta-analytical level. In particular, by suggesting that body dissatisfaction is a maladaptive cognitive procedure not just in terms of leading to the emergence of eating disorders [21] and mood disorders [22] but, additionally, for its likely contribution to the onset and maintenance of another potentially dysfunctional outcome such as MEB.

However, it should be noted that the pathological nature of MEB may not been in not on a par with that of mood disorders and eating disorders. In particular, because it has been suggested that healthy exercise and MEB (at least as operationalised in the currently available assessment instruments) may share some of their attributes [23][24]. Indeed, this circumstance has led some authors to suggest the need to control by exercise volume or even by perceived health status when examining the relationship between MEB and its potential antecedents [24][25][26]. However, it should be noted that these two factors were not taken into account when computing the original effect sizes retrieved in the present meta-analysis. Consequently, the possibility exists that the magnitude of the relationship between body dissatisfaction and truly MEB would be effectively weaker.

The magnitude of the relationship between body dissatisfaction and MEB found in the present study appears to be slightly lower than the one reported in the only meta-analysis to date that has investigated the relationship between other body-related variables and MEB [27]. This circumstance could be due to differences between the body-related construct (i.e., drive for muscularity) considered in the study whose results are being used for comparison [27] and body dissatisfaction. Firstly, experiencing a drive for muscularity does not necessarily imply individuals as being globally dissatisfied with their bodies but is the desire of having a more muscular physique [28]. Similarly, it has been suggested that muscular development is perceived as a more easily attainable feature than others that, such as thinness, may be involved in global experiences of the body [29].

Following the assumption that positive reinforcement mechanisms are present in the development of MEB [4], the possibility therefore exists that the differences favouring drive for muscularity versus body dissatisfaction may be due to the easily attainable nature of the gains inherent to the former experience. These differences may also be explained by the fact that drive for muscularity construct involves a behavioural component (i.e., acting upon the desire of having a more muscular physique) not present in body dissatisfaction [28], in particular, if considering the primarily behavioural nature of MEB [2][4]. The aforementioned explanation may be even more feasible if it is considered that, unlike the present study, the population in the study examining the relationship between drive for muscularity and MEB used here for comparison purposes comprised male individuals [27], who have been reported to pursue muscularity and engagement concerning strategies aimed at achieving this goal to a greater extent than their female counterparts [30]. In view of these considerations, further research is needed that provide a better understanding of the role that the very precise nature of the different body-related experiences may have concerning the aetiology of MEB.

## 2.2. Moderators of the Relationship between Body Dissatisfaction and MEB

The fact that neither gender, BMI, age, nor ethnicity (expressed as % of Whites) emerged as significant moderators of the relationship between body dissatisfaction and MEB, suggest that such a relationship may be largely consistent across individuals with different sociodemographic characteristics. The fact that no significant differences in the relationship under consideration were found according to the instrument employed for the assessment of MEB suggests that experiencing body dissatisfaction is consistently associated with the different sets of components involved in each of these measures irrespective of the ones adapted from the clinical criteria for substance dependence [31] or those proposed as maintenance factors for excessive exercise within the ED domain [32]. These two groups of findings are noteworthy if it is assumed that body dissatisfaction may preclude MEB in time. In particular, because this would imply that focusing on managing body dissatisfaction may be a largely universal effective strategy to prevent the emergence of MEB in its different forms. For its part, the fact that the magnitude of the relationship between body dissatisfaction and MEB increased linearly with time suggests that exercise may be increasingly employed as a form of coping with body modification. However, this is proposed as just one possible interpretation of the finding here, and whose empirical validity should be tested in further studies. Finally, a plausible explanation for the weaker relationship found between body dissatisfaction and MEB when the former is assessed with the MBAS may be due to the distinctive characteristics of this instrument. In particular, it should be noted that one of the characteristics present in the MBAS (i.e., height) does not appear to be susceptible

to improvement through physical exercise. In absence of this potential for improving, it appears plausible to assume that the positive reinforcement obtained from exercising could be tempered.

## 2.3. Practical Implications

The results of the present study suggest that exercise professionals such as personal trainers or fitness instructors should be aware of the risk that experiencing high levels of body dissatisfaction would represent in terms of developing MEB. Consequently, exercise professionals (e.g., exercise managers and fitness instructors) and primary healthcare providers may be encouraged to respectively move away from using exercise primarily as a body shape change or weight loss tool [13][33]. The results presented here also open the door to explore the possibility that implementing intervention programmes of a psycho-educational nature aimed at decreasing body dissatisfaction [34] among recreational exercisers may contribute to the prevention of the occurrence of MEB and, by extension, to enhance the potential health-inducing character of exercise.

## 2.4. Limitations

Findings from the present meta-analysis should be interpreted in the light of several limitations. Firstly, it is likely that variables not examined in the present study due to the unavailability of data could operate as moderators of the relationship under consideration. A clear example would be the clinical nature of the sample in terms of eating disorders. In particular, since associations between MEB and variables involving a negative evaluation of the body have been found to be weaker among individuals at high-risk relative to those at low-risk of developing eating disorders [25]. Therefore, further research aimed at examining the relationship between body dissatisfaction and MEB among individuals at high-risk of eating disorders appears warranted.

Secondly, the lack of reporting on scores for the different factors included in the instruments assessing MEB prevented the authors from examining the extent to which these may be differentially associated with body dissatisfaction. This limitation is of particular relevance in the light of evidence suggesting that (i) instruments assessing MEB may be better operationalised from a multi-dimensional perspective [20][35], and (ii) the strength of the associations between MEB and its potential antecedents may largely vary across the specific components of the former [6][36]. In view of these implications, researchers in this field are encouraged to examine the associations and links between body dissatisfaction and MEB considering the latter not just as a global phenomenon but also according to its specific components. Moreover, there is a need to examine the relationship between body dissatisfaction and MEB that considers the individual components of MEB. This is necessary because some of the MEB components may reflect exercise motives related to body dissatisfaction (e.g., exercising to control weight) [6].

Finally, the fact that the retrieved data were largely cross-sectional does not allow the drawing of firm conclusions regarding causality based solely in the present study's findings. In view of this limitation, and given the theoretical plausibility of considering body dissatisfaction as a potential antecedent of MEB [2][4], research featuring longitudinal designs are needed that provide further insight into the hypothetical causal nature of the relationship between body dissatisfaction and MEB. A feasible possibility in this respect would be examining the extent to which

repeated acute exercise-induced changes in state-level of body dissatisfaction assessed may lead to long-term changes in the levels of MEB.

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