



BODY DISSATISFACTION, PATHOGENIC WEIGHT CONTROL BEHAVIOUR AND PERFORMANCE AMONG ELITE ATHLETES

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ABSTRACT

Body dissatisfaction and Weight control behaviour among athletes in different types of sports is becoming increasingly pervasive in developing non-Western countries such as India and impacting sport performance. However, there exist a lack of research investigating the relationship between these problems. The current study examined the relationship between body dissatisfaction and weight control behaviour, weight control behaviour and performance as well as gender difference in body dissatisfaction among elite athletes. The study followed the correlational research design. The data was collected from 92 elite athletes (46 males and 46 females) between the ages of 12-22 from India by employing self-report measures of MBSRQ-BASS, EAT-26 and ASPS. The findings of the study suggest that body dissatisfaction was negatively correlated with weight control behaviour. Our results show no correlation between weight control behaviour and decreased performance. Additionally, there was no significant difference between males and females in body dissatisfaction. Educational programs should include strategies to help athletes increase body satisfaction and apply and adopt desirable and appropriate weight control behaviour.

Keywords: body dissatisfaction, elite athletes, performance, weight control behaviour.

1. INTRODUCTION

Each sport has its own set of demands relating to body weight, shape, and size. Sports that promote muscularity, thinness, or a particular physique maybe even more at risk for disordered eating and body dissatisfaction because there may be more appearance, body, or weight-oriented demands and pressures during training and competition (Anderson et al., 2012; Thompson & Sherman, 2015). Body dissatisfaction is characterised as having a negative attitude towards one's own body as a result of a perceived discrepancy between one's actual and ideal body images (Heider et al., 2018). Female competitive swimmers in their adolescent reported much higher levels of body dissatisfaction and claimed that their trainers pushed them to slim down, build up their upper bodies, and aim to resemble a "triangle" (Howells & Grogan, 2018). In the revised sociocultural model of disordered eating, Petrie and Greenleaf (2007) hypothesised that the pressure placed on individuals to maintain a certain body image results in decreased levels of body satisfaction and/or self-reported intentions to restrict their calorie intake and diet. Athletes may become less satisfied with their body as a result of pressure to lose weight and structure their bodies to fit a sport- specific ideal from coaches, teammates, judges, and sociocultural sources. This is because the pressure highlights how inadequate their current bodies are, leading them to engage in weight control behaviour to alter their size and shape. As a result, athletes from all sports may encounter weight pressures and be vulnerable to developing body dissatisfaction and therefore engage in weight control behaviour. However, some sports present an even greater risk because of the increased emphasis placed on appearance as it relates to performance success Professional sports across a broad spectrum recognize weight control behaviour (Dosil & González-Oya, 2012). Several sports require "low body weight and/or low fat/muscle ratio" for more excellent performance (Hagmar et al., 2008). This usually results in issues with pathogenic weight control behaviour. Success and low body weight are directly correlated for many athletes across many sports disciplines, with weight regulation being a key factor (Martinsen et al., 2010). As a result (Dosil & González-Oya, 2012), categorises certain sports as "high risk in conjunction to pathogenic weight control behaviour". Slender appearance is emphasized in sports like artistic gymnastics, ice skating, dance, weight division sports, endurance and low-weight performance sports (Dosil & González-Oya, 2012; Martinsen, 2010). Weight control behaviour can be either pathogenic or non-pathogenic. Pathogenic refers to all undesirable methods of weight control and can be implemented either gradually or rapidly (Sundgot-Borgen & Larsen, 2007). It may involve self-control, selective eating, excessive sweating through sauna in plastic suits to induce dehydration, diuretics, prolonged exercise, vomiting, rubber suits during training or medication like laxatives. Nevertheless, it can spiral out of control and result in eating disorders, in conjunction with the urge to lose weight for greater athletic performance (Stice,1994; Artioli et al., 2010; Greenleaf et al., 2009; Bratland-Sanda & Sundgot-Borgen, 2013). Lean and muscular athletes, endurance athletes, strength athletes, sprinters, and athletes of all ages use weight loss techniques. Athletes have the option of losing weight quickly or gradually. Unquestionably, losing weight has a negative impact on several aspects of one's health. There is a lengthy list of both immediate and long-term health problems connected to weight loss. The employment of pathogenic weight management behaviours can cause hormone imbalance, increase in bone loss, hypohydration, high body temperature, decreased plasma volume, eating disorders, improper energy balance, acute cardiovascular problems, and undernutrition (Degoutte et al., 2006; Reljic et al., 2013; Lakicevic et al., 2020). During a 7-day period of dietary restriction, the judo athletes in the study (Filaire et al., 2001) showed a substantial decline in left arm hand grip strength, and a significant decline in leaping performance during a 30-second jump test. There is evidence that

anaerobic performance is hampered by buffering and glycogen concentration drop and aerobic performance is impaired by decreased plasma volume and glycogen concentration (Franchini et al., 2012). The prevalence of weight control behaviour is relatively high in all sports, despite the well-documented negative consequences of such behaviours. Most athletes who engage in unhealthy weight control behaviour require assistance from healthcare professionals who can guide and educate them about healthy weight control behaviour and the adverse effects of using pathogenic weight control behaviour.

Theoretical Background According to the tripartite influence model, early social variables can have an impact on the emergence and maintenance of disordered eating patterns and negative body image. The three main social factors that are thought to contribute to the subsequent development of eating disorders and body image issues are parents, peers, and media (Thompson & Sherman,2007). Coaches, trainers, and teammates are taken into account as social agents in sports and exercise environments. Via direct and indirect communication, the projection of values and norms, and with the support of stereotypes and idealised body shapes, sizes, and functions, it is believed that these social actors in general promote a heightened focus on the body's appearance and/or functionality. For instance, parents may impose restrictions on nutrition and exercise to manage their child's body size, coaches may make descriptive physical comments about team members, and the media constantly promotes particular body types through text and pictures. These social agents are believed to provide conditions that encourage internalisation of the ideal physique and comparisons of physical appearance and functions. As a result, it is believed that comparisons and the internalisation of ideals are antecedents to body image issues. In Festinger's social comparison hypothesis (1954), it claims that people have an innate need to compare their looks and skills to others, this idea leads to comparisons to others. According to the social comparison hypothesis, people either compare themselves to others who are better off than they are on traits of value (upward social comparison) or to those who are worse off (downward social comparison). Furthermore, the internalisation of body ideals is regarded as a component in determining whether people have a positive or negative body image. A mismatch between a person's actual and "desired" or ideal body results when certain characteristics are neither naturally or practically achievable

Rationale Instead of obvious eating disorders in professional athletes, this research concentrates on body dissatisfaction, weight control behaviour and performance in elite athletes. The study concentrates on the concept of body dissatisfaction for several reasons. First, it's been noticed that people's desire to alter their bodies leads to body dissatisfaction, which drives them to engage in unhealthy weight control behaviour. Athletes' strength, training, performance, and recuperation are all impacted by their weight control behaviour, which is a crucial component. These unhealthy behaviors can eventually have a severe impact on athlete's physical, emotional, and mental health. Second, it has been discovered to be a predictor for the development of eating disorders and occurs in both healthy people and people with various mental problems like social anxiety disorder. Lastly, studies on weight control behaviour, body dissatisfaction and performance are sparse in Indian context. With limited research, it has been determined that false hypothesis (type II error) have been accepted in most studies. This research aims to understand the relationship between body dissatisfaction, weight control behaviour and performance in Indian elite athletes. And contribute more to the dimension of body dissatisfaction and weight control behaviour among athletes in Indian context.

Significance Research studies indicate that body dissatisfaction and weight control behaviour are common among athletes that require low body fat or low body weight or appearance for enhanced performance. Athletes, especially females, are at risk for engaging in weight control behaviour because of sports environment

pressures from various sources regarding weight, appearance, body size, shape and performance. It can be difficult to differentiate between athletic diet and weight control behaviour. Athletic diet is more towards improved- performance by decreasing risk of injury, disease, fatigue and helps enhance training and recover faster. Whereas, weight control behaviour are more focused on altering body weight (Sundgot-Borgen & Larsen, 2007). The present research therefore focused on the relationship between body dissatisfaction, weight control behaviour and performance. These studies have been primarily conducted in in western research centres, creating awareness, providing education and intervention to promote better living standards and lifestyle. Therefore, the findings from our study may help athletes with body dissatisfaction and weight control behaviour towards recovery and interventions. Additionally, it may help athletes acknowledge the harmful effects of pathogenic weight control behaviour and inculcate healthy weight control behaviour. It may guide athletes to create for themselves a healthy life and build a successful career.

OBJECTIVE

1. To determine whether body dissatisfaction is related with weight control behaviour.
2. To determine the relationship between weight control behaviour and performance.
3. To investigate if female athletes with weight control behaviour have higher body dissatisfaction than males

HYPOTHESES

H0: There is no significant relationship between body dissatisfaction, weight control behaviour and performance among athletes.

H1: Body dissatisfaction is related with weight control behaviour. H2: Weight control behaviour is related with decreased performance. H3: Female athletes have higher body dissatisfaction than male.

RESEARCH QUESTIONS

1. How is high body dissatisfaction related with weight control behaviour?
2. Is weight control behaviour related with performance of an athletes?
3. Do female athletes have higher body dissatisfaction than male?

RESEARCH GAP

The study on weight control behaviour like in the west have well-known and well- figured the rapid increase and use. There is a significant knowledge vaccum about body dissatisfaction, weight control behaviour and performance in elite athletes. The use of weight control behaviour in the country have been increasingly recognized in females focusing on pathogenic weight control behaviour, unhealthy weight loss strategies, its causes and consequences and weight-related motives. The term “weight control behaviour” has always been confused with weight loss. Additionally, the questions of reliance come into play as most research have focused on samples from particular sport with a relatively smaller sample size and thus, fails to be the representative of the athlete populations. Various research has also explicitly inculcated female athletes and therefore, it cannot be generalised.

2. METHOD

2.1 Research Design

The study employed the correlational research design in order to find a statistically significant relationship between body dissatisfaction and weight control behaviour, as well as between weight control behaviour and performance. This method does not establish cause- effect relationships however, it has greater generalizability of findings and help establish any relationship between variables. Sample The target population for the study was 46 men and 46

women, between the ages of 15 and 24. This study focuses on this age group for mainly two reasons; first, body dis/satisfaction is frequently shaped at this age and secondly, emerging athletes begin to participate in higher level of competitions starting this age. The study included a total of 92 participants; the forms were circulated to various clubs in India however, due to the national issue that arose during the data collection process, the athletes were abstained from filling the form. A non-probability approach of snowball sampling was used in the study. This sampling strategy was employed as the author is an athlete, which made it quicker and easier to collect samples for a study. All different kinds of elite athletes are included in the sampling, which is not limited to any particular sport. The timeline for the recruitment of participants was from May, 2023 until July, 2023

2.2 Inclusion criteria Participants should be Indian nationals. Elite athletes refer to those actively competing in inter college or inter school level competition and high Participation in competitive events should be within the past 1 year. Participants should be between the age of 15-22

2.3 Exclusion criteria for the study are: Participants with any type of clinical disorder. Participants below 18 years whose informed consent from parents hasn't been consented

2.4 Procedure

The Institutional Review Board-approved process was followed, and participants were given a Letter of Introduction detailing the study and an accompanying consent form to complete before proceeding. For the population below 18, the consent form was given to the participant's guardians. Those participants who had the consent from their guardians were included in the study. The participants were recruited using referrals. As the researcher is an athlete, a small number participants were selected from the authors contact based on their availability, who then helped the researcher to come in contact with other athletes. Data was gathered using online questionnaire (Google Forms) administered via a variety of media platforms. The instruction were included in the questionnaire for the participant to feel well- informed. The questionnaire took about 30 minutes to complete. Incomplete questionnaires were removed from the purview of the current study.

2.5 Ethical considerations

The study adhered to the ethical consideration in the course of study. Prior to the study, the participants were given a letter incorporating the authors name and highlighting the purpose of the study. The participation was completely voluntary. The respondents were notified that they have the freedom to withdraw at any point. They did not receive any payment or credit for their participation. The study involved no use of deception and no harmful psychological effects are expected. The participants with higher body dissatisfaction will be given referrals to protect their safety. Other ethical considerations that were adhered to are confidentiality, anonymity, protection from harm, informed consent, and privacy.

2.6 Tools

Multidimensional Body Self-Relation Questionnaire – Body Areas Satisfaction (MBSRQ-BAS) by Thomas Cash-The Multidimensional Body-Self Relations Questionnaire-Body Area Satisfaction (MBSRQ-BAS) is a commonly used tool for assessing body dissatisfaction. It is a 9-item self-report questionnaire that assesses how satisfied a person is with specific facets of their appearance (Cash, 2000). Use of the MSBSRQ-BAS is intended for both adults and teenagers (above 15). Using Cronbach's Alpha, the MBSRQ's internal consistency was determined(=0.781), showing the questionnaire's reliability. A 5-point scale is used to evaluate satisfaction for each item (1 "Very unhappy" to 5 "Very satisfied").

Eating Attitude Test- 26 (EAT-26) by Garner- A 26-item self-report questionnaire called the EAT-26 is used to evaluate both normal and unhealthy eating behaviour (Garner, 2009). The scale is divided into three sections: Part A (BMI), Part B (concerns about eating and weight), and Part C (behavioural question). For the current study, Part C will only be utilised. However, it does not offer a precise diagnostic for an eating disorder; rather, it is intended to assess and screen a person's risk of having eating disorders. Both clinical and non-clinical populations may use the scale. The EAT-26 scale have high correlations. The reliability (alpha = 0.90) is high. With the EAT-26, test- retest reliability ranged from.84 to.89 (Garner, 1982; Garner et al., 2000).

Athlete’s Subjective Performance Scale (ASPS) by Ohad Nahum- The 6-item Athlete's Subjective Performance Scale (ASPS) (Nahum et al., 2016) measures the athlete's subjective evaluation of his or her performance on the team. The three key components of sports performance—general performance, team contribution, and personal ability—were identified by the scale. The scale's Cronbach alpha coefficient is 0.95 The response format is a 10-point Likert scale, with 1 representing not at all satisfied and 10 representing fully satisfied

2.7 Variables

The study aims to study the relationship between three variables, namely body dissatisfaction, weight control behaviour and performance among athletes. For this purpose, the variables was operationally defined as follows:

Body dissatisfaction: refers to the dissatisfaction with discrete attributes of one’s appearance.\ **Weight control behaviour:** It refers to how frequently unhealthy weight control behaviour are used.

Performance: relates to an athlete’s general performance, their personal ability and team performance.

2.8 Data analysis

The data collected was analysed using the Jamovi software. The test of normality was assessed using the Shapiro p-value. Based on the results of the normality, the hypothesis was further analysed using Spearman’s correlation coefficient. Descriptive statistics was als calculated. And the gender difference was analysed using independent sample t-test.

3. RESULTS

TABLE 1
SCALE RELIABILITY ANALYSIS OF MBSRQ-BASS, EAT-26, ASPS

Scale	Cronbatch’s α
MBSRQ-BASS	0.768
EAT-26	0.676
ASPS	0.951

Note. MBSRQ-BASS = Multidimensional Body Self Relations Questionnaire – Body Area Satisfaction Scale), EAT-26 (Eating Attitude Test – 26) and ASPS (Athlete Subjective Performance Scale).

Table 1 shows the reliability of the scales or questionnaires MBSRQ – BASS (Multidimensional Body Self Relations Questionnaire – Body Area Satisfaction Scale), EAT-26 (Eating Attitude Test – 26) and ASPS (Athlete Subjective Performance Scale). The Cronbach’s alpha for the scale MBSRQ - BASS is 0.768, which indicates that the scale is reliable. Table 2 shows the reliability of the scale or questionnaire EAT - 26. The Cronbach’s alpha for the scale EAT – 26 is 0.676, which indicates that the scale is reliable. The Cronbach’s alpha for the scale ASPS is 0.951, which indicates that the scale is highly reliable..

TABLE 2
DESCRIPTIVE STATISTICS FOR BODY DISSATISFACTION, WEIGHT CONTROL BEHAVIOUR AND PERFORMANCE

Variables	M	SD	W	Shapiro-Wilk		Skewness		Kurtosis	
				P	Skewness	SE	Kurtosis	SE	
Body Dissatisfaction	3.00	0.591	0.925	< .001	1.036	0.251	1.166	0.498	
Weight Control Behaviour	2.35	0.861	< .001	-0.585	0.251	0.253	0.498	2.53	
Performance	39.66	0.936	< .001	-0.890	0.251	0.745	0.498	0.745	

292 *Note. n = 92*

Table 2 shows the data distribution of Body dissatisfaction, Weight control behaviour and Performance. The mean score for Body dissatisfaction (MBSRQ – BASS), Weight control behavior (EAT - 26) and Performance (ASPS) are 3.00, 2.35 and 39.66 respectively. The Shapiro Wilk p-value obtained for Body Dissatisfaction is 0.925 ($p < .001$), weight control behaviour is 0.861 ($p < .001$) and Performance is 0.936 ($p < .001$). This indicates that the data is non-normally distributed and symmetrical based on skewness value as they lie between -1.0 and +1.0 and platykurtic, as they are less than 3.

TABLE 3
CORRELATION MATRIX FOR BODY DISSATISFACTION, WEIGHT CONTROL BEHAVIOUR AND PERFORMANCE

Note. * $p < .05$, ** $p < .01$, * $p < .001$**

The correlation was reviewed between body dissatisfaction, weight control behaviour and performance among elite athletes in order to explore their relationship. Table 3 outline the correlation results from the Spearman correlation between body dissatisfaction, weight control behaviour and performance. The Spearman’s p value for body dissatisfaction and weight control behaviour is 0.045 which suggest that there is a significant relationship between body dissatisfaction and weight control behaviour. Therefore, the hypothesis (H1) is accepted i.e.; body dissatisfaction is related with weight control behaviour. The Spearman’s p value for weight control behaviour and performance is 0.705 which suggest that there is no significant relationship between weight control behaviour and performance. Therefore, the hypothesis (H2) is rejected i.e.; weight control behaviour is related with decreased performance.

TABLE 4
INDEPENDENT SAMPLES T-TEST FOR BODY DISSATISFACTION

DV	N	M	SD	U	p	Cohen's d
Females	46	3.00	0.556			
Males	46	2.92	0.620	854	0.111	0.193

Table 4 shows the independent sample t-test results from the Mann-Whitney U for body dissatisfaction among male and females elite athletes. The independent sample t-test indicate that there is a no significant difference between males and females ($U = 854, p > 0.05$) in body dissatisfaction. Therefore, the hypothesis (H3) is rejected i.e.; females have higher body dissatisfaction as compared to males.

4. DISCUSSION

This study assessed the relationship between elite athletes' body dissatisfaction, weight control behaviour, and performance. The dual pathway approach can be used to examine how weight control behaviour and body dissatisfaction are related. It asserts that body dissatisfaction escalates the likelihood of inappropriate dietary restriction, raising the possibility of weight control behaviour (Stice, 1994). Following Greenleaf et al. (2009), more than half of the athletes (54.4%) were unhappy with their weight. They acknowledged fasting, following a strict diet, using laxatives, vomiting, diuretics, and taking diet pills to lose weight. According to a study (Reina et al., 2019), measuring body dissatisfaction and weight control behaviour, people scoring higher on this metric were more likely to identify as overweight, desire to be smaller, and implement weight management techniques like extreme calorie restriction to shed pounds. The athletes were more driven to exercise to alter their bodies, which was also accompanied by disordered eating. Drive for slenderness, dieting, and disordered eating practices are all linked to body dissatisfaction (Peiling & Lynne, 2005; Goldschmidt et al., 2012).

Previous studies have indicated a positive association between body dissatisfaction and weight control behaviour. However, the findings of this study suggest an intriguing finding that there is a significant negative correlation between body dissatisfaction and weight control behavior among elite athletes. The finding poses concern since it emphasizes the need for interventions that promote body acceptance and satisfaction to avert these behaviors' onset. The health care system fails to acknowledge body dissatisfaction and weight control behaviour in support of several other, more urgent issues. This could result in poor self-esteem, anxiety, sadness, and an increased risk for eating disorders among elite athletes, which is especially problematic for those with poor educational backgrounds or limited access to healthcare (Shander & Petrie, 2021).

Over the past ten years, numerous studies have indicated that elite athletes are more likely to employ weight control behaviour. Along with the typical social pressure to be slim, the idea that a particular weight offers a performance advantage is prevalent in many sports cultures, which encourages professional athletes to employ weight control behaviour. Elite swimmers' testimonies underlined the importance of regulating weight as the source of advancement and the pursuit of distinction, highlighting the impact of the "slim to win" culture on the use of weight control behaviour. Rapid weight reduction negatively impacts physical function, aerobic

capacity, and overall sporting performance (McMahon & Barker- Ruchti, 2017). Athletes who lost weight quickly and continuously had hunger, mineral loss, cramps and twitches from dehydration, physical injuries, and decreased or optimum sports performance (Franchinin et al., 2012; Turocy et al., 2011). However, our findings oppose the studies which concluded that there exists a relationship between the use of weight control behaviour and decreased performance.

Male and female athletes may have varying degrees of body dissatisfaction, which might occur in both aesthetic and non-aesthetic sports. Irrespective of the sport, female participants in the study reported higher levels of dissatisfaction, and they were more likely to identify as somewhat or severely overweight (Reina et al., 2019). Male exercisers reported lower levels of body dissatisfaction than female exercisers despite striving to develop more muscular and boost muscle volume (Melching et al., 2016). Our study found no gender differences in the level of body dissatisfaction among male athletes, despite evidence suggesting that female athletes report more dissatisfaction with their bodies than male athletes.

These could be attributed to the fact that associations between the weight control behaviour and performance and gender differences in body dissatisfaction were found in research with higher sample sizes and participants of diverse ethnic backgrounds in the majority of cases. Due to a national issue involving athletes in India, different clubs prevented the athletes from filling out the questionnaires, which made the study's sample size smaller and its ability to detect a difference insufficient. Additionally, the study's sample of athletes included a diverse range of sports specializations. Body ideals vary depending on race and culture; for instance, in Hispanic culture, the ideal body type is curvy and voluptuous (Reina et al., 2019). Second, self-report measures were used during the study, making it susceptible to errors and self-presentation biases.

Furthermore, there are significant differences in how elite athletes are defined. For instance, a study (Reale et al., 2018) defined elite athletes as those who compete in nationals. Finally, the effects of being exposed to body ideals or practicing weight control behavior are considerably different. This can be viewed as a study's limitation. As such, future research should focus on these challenges and investigate the association between body dissatisfaction, weight control behavior, and performance among athletes.

5. CONCLUSION

In accordance with the research, there is a negative association between body dissatisfaction and weight control behaviour among elite athletes. The fact that some of the athletes are at a risk for initiating and sustaining dangerous weight control measures should be taken seriously as it could have negative implication on an athlete's health. Thus, special care must be taken to create more individualized and effective weight-management plans and eventually perform more effectively. Working with a supporting medical team will ensure success if an athlete needs to reduce weight.

There is a need for studies to include larger sample size, use of interviewing techniques and emphasize on a specific sports. Further studies are necessary to demonstrate the relevant factors, such as media impact, self-esteem, and perfectionism, that may be linked to body dissatisfaction and weight control behaviour in elite athletes.

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CONFLICT OF INTEREST

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