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RELATIONSHIP OF BODY IMAGE AND BODY MASS INDEX OF FEMALE POWERLIFTERS

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Abstract
The present study examined the correlation between Body Image and BMI, among 50 Indian Female powerlifters. Although powerlifting is focused on strength and normally leads to higher BMI due to higher muscle mass, society pushes towards a desire to be thinner, which may cause body dissatisfaction. Investigators utilized the Body-Image Questionnaire (BIQ) and association between BMI and body image was negatively significant ($r = -0.33$, $p = 0.0186$). This indicates that with increasing BMI, more athletes perceive their body image negatively, despite the fact that a higher BMI in athletes is generally associated with muscle mass. However, the average BIQ score showed mainly positive perceptions of self. The research underscores the psychological conflict female athletes may experience between performance-oriented bodies and societal beauty standards. It also demands more supportive sports environments which prioritise strength, function, and health over appearance and advises against placing excessive value on BMI as an indicator of health in athletic populations.

Keywords: Body Mass Index (BMI), Body image, Female Athletes, Powerlifting, Wrestling.

Introduction
Body image is a multi-dimensional psychological construct that represents individual perceptions, thoughts, and feelings regarding one's appearance and function of his/her body. It is important for both men and women to be attractive, however, it has a greater impact on the latter, who are more likely to feel the pressure to conform to the ideal body image set by society (Grogan, 2016). Body image can be particularly complicated in sport, where athletes need to find a balance between how they look and how the demands of the sport make their bodies perform. One segment of society that exemplifies this dichotomy is female powerlifters, who take part in a sport that focuses on strength, performance and physical power rather than traditional standards of beauty. Powerlifting is a strength sport, characterized by high amounts of muscle mass and body mass, with the latter often leading to high Body Mass Index (BMI). BMI is commonly used to categorize individuals in terms of their weight relative to their height. Although BMI is a general measure of body composition, it fails to discriminate fat from lean body mass and can be misleading when applied to an athletic population (Ode et al., 2007). A high BMI in female powerlifters may not necessarily represent a high level of adiposity, but may rather be indicative of increased muscle mass. But, in spite of their ability, strong bodies, and physical skills, a lot of women in sports have the experience of bodily dissatisfaction as a result of social pressure on slimness and femininity (Krentz & Warschburger; 2011). The relationship between body image and BMI in women athletes has produced mixed findings in the literature. There is evidence that strength

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athletes may have more positive body image perceptions relative to their non-athlete counterparts due to their training contributing to a functional body image orientation (Steinfeldt et al., 2013). On the other hand, other studies have suggested that female athletes, including strength athletes, may continue to internalize cultural norms of slimness, and this may be associated with body dissatisfaction despite being high performing and physically competent (Anderson et al., 2012). This tension poses the critical question about the body image of female powerlifters and their relationship with body mass index. In light of growing numbers of women involved in traditionally male-dominated sports, such as powerlifting, it is important to know the effect of the body requirements of the sport and body composition measures on their body satisfaction. This insight may inform coaches, sport psychologists and sporting organisations toward creating the supportive climate that helps female athletes to maintain their mental health and positive body image. This study seeks to extend research on body image and body mass index among female powerlifters. This relationship is important to the desire to nurture psychological resilience, body satisfaction, and well-being in female powerlifting, a rapidly developing but under-researched athletic group.

Methodology

A total of 50 female powerlifters participated in the study. Participants were from Madhya Pradesh, ensuring a diverse sample in terms of age, experience, and competitive level. The particpants Height in meters, Weight in Kilograms, and the Body-Image Questionnaire (BIQ): An Extension were utilized to assess participants' body image score and body mass index. Participants completed the requested data and BIQ in a controlled environment, with researchers available to answer questions. Data were collected anonymously to ensure confidentiality.

Data Analysis

SPSS was employed for data analysis, and Pearson's correlation was utilised to determine the relationships between Body Image and Body Mass Index.

TABLE NO. 01
DESCRIPTIVE ANALYSIS OF BODY IMAGE OF WOMEN POWERLIFTERS

S. No	Descriptive Parameter	Powerlifters
01	Mean	67.25
02	Standard Error	1.35
03	Median	67
04	Mode	71.2
05	Standard Deviation	9.58
06	Sample Variance	91.73
07	Kurtosis	-0.34
08	Skewness	0.15
09	Range	39.4
10	Minimum	50.6
11	Maximum	90

The descriptive analysis of the body image of women powerlifters provides insight into how these athletes perceive their bodies. The mean body image score is 67.25, with a median of 67 and a mode of 71.2, suggesting that the majority of participants report moderately positive body image, with a slight lean toward higher satisfaction. The close values of the mean and median indicate a relatively symmetrical distribution, while the higher mode points to a concentration of responses at a more positive level. Variability in the data is reflected in the standard deviation of 9.58 and a range of 39.4, with scores spanning from 50.6 to 90. This demonstrates a wide spread of experiences, suggesting that while some lifters have lower body image perceptions, others feel very

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positive about their bodies. The standard error is 1.35, indicating that the mean is an accurate measure of the sample. The kurtosis of -0.34 suggests a slightly flattened distribution (i.e., responses are more evenly distributed around the mean as opposed to being heavily concentrated on the mean). The positive skewness of 0.15 suggests that there are few participants with very high body image scores. Women powerlifters, as a whole, indicated overall positive and diverse body image. The sport's emphasis on muscle, rather than aesthetics, may contribute to a healthier body image, that of strength and empowerment, in which powerlifters have all found acceptance across the lifting community.

TABLE No. 02
DESCRIPTIVE ANALYSIS OF BODY MASS INDEX OF WOMEN POWERLIFTERS

S. No	Descriptive Parameter	Powerlifters
01	Mean	29.1
02	Standard Error	0.25
03	Median	28.9
04	Mode	28.8
05	Standard Deviation	1.79
06	Sample Variance	3.22
07	Kurtosis	0.76
08	Skewness	-0.34
09	Range	9.1
10	Minimum	23.5
11	Maximum	32.6

The descriptive analysis of Body Mass Index (BMI) of women powerlifters is reasonably similar to the general population distribution of values. The average BMI in the group is 29.1, with a median and modal BMI of 28.9 and 28.8, respectively, suggesting that most athletes are relatively closely grouped around the mean. These values indicate that powerlifters tend to have BMIs in the higher range of "overweight", which is normal for strength athletes in whom muscle mass overwhelms body fat. The low standard deviation 1.79 and standard error 0.25 values confirm that this is a study of low variability and high precision. The 9.1 range (BMIs 23.5 to 32.6) is moderately diverse in physical dimensions, but plausible of athletic volume.

The kurtosis of 0.76 suggests a peaked distribution with more values close to the mean, while the skewness of -0.34 indicates a slight tendency toward lower BMI scores. Overall, the BMI data portrays women powerlifters as a largely homogeneous group with consistent body composition. The higher average BMI reflects muscular development common in strength sports, emphasizing the need to interpret BMI carefully in athletic populations, where it may not accurately reflect health or fitness.

TABLE NO. 03
RELATIONSHIP BETWEEN BIQ AND BMI OF WOMEN POWERLIFTERS

Variables	'r'	Sig.
BIQ BMI	-0.33	0.0186

* Significant at 0.05 level of significance, $r_{(0.05)(98)} = 0.193$

The relationship between Body Image Questionnaire (BIQ) scores and Body Mass Index (BMI) among women powerlifters, as presented in Table 03, reveals a statistically significant negative correlation. The correlation coefficient (r) is -0.33, with a significance value (p) of 0.0186. This value is less than the threshold for significance at the 0.05 level (r = 0.19 for df = 98), indicating that the correlation is statistically meaningful. A negative correlation implies that as BMI increases, the BIQ score tends to decrease, and vice versa. In this context, lower BIQ scores may suggest more concerns or dissatisfaction with body image, while higher scores could indicate a more positive body image perception. The results imply that higher BMI values might

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contribute to more negative body image perceptions among female powerlifters. This relationship is of interest given that powerlifters may carry elevated levels of muscle mass and body weight due to the nature of their sport compared to social standards for body image. These findings bring attention to the psychological and perceptual issues that female athletes may confront about body image, even among strong athletes. The strong negative correlation underlines the importance of creating environments that can foster positive body image attitudes, especially in strength-focused sports, where body composition standards may not be congruent with dominant cultures.

Discussion of Findings

The investigation indicates a statistically and practically meaningful relationship between Body Mass Index and Body Image perceptions in female powerlifters. A negative coefficient value (r = -0.33), which is significant (0.0186), shows that, for growing BMI, the BIQ values decrease. This negative relationship indicates that the body of women powerlifters with higher BMI scores may have a worse appearance than those with lower BMI, even though possessing higher BMI in this population was associated with a larger amount of muscle mass rather than body fat. This investigation is consistent with similar previous findings, which indicate that female strength athletes are also susceptible to the ideals associated with body appearance, even if stereotypes suggest they are not. Despite their strength and functionality, these athletes may internalize culturally promoted ideals of thinness and femininity (Anderson et al., 2012), leading to dissatisfaction with body image. The contradiction between their athletic physique, characterized by greater muscle mass and higher body weight, and prevailing beauty standards may contribute to this negative perception.

However, the descriptive statistics indicate that most of the participants maintain a moderately positive view of their bodies. The average BIQ score was 67.25, and the distribution was fairly symmetrical, suggesting a balanced perception overall. Yet, the range of scores (from 50.6 to 90) and the presence of negative skew in BMI distribution (-0.34) indicate some variability, with certain individuals experiencing lower body image satisfaction. It is essential to acknowledge that BMI, as a measurement, has limitations, particularly when applied to athletes. BMI does not distinguish between lean muscle and fat mass (Ode et al., 2007). In strength sports like powerlifting, a high BMI may reflect superior muscle development. Nevertheless, because BMI remains a widely accepted and referenced health indicator in society, even well-conditioned athletes may internalize its implications negatively, which can impact their self-image. The findings also echo Krentz and Warschburger's (2011) observation that athletes, especially women, often face a dual pressure: achieving peak physical performance while adhering to societal beauty ideals. In contrast, Steinfeldt et al. (2013) reported that strength athletes may adopt a more functional view of their bodies, which contributes to improved body satisfaction. The present study demonstrates that this functional mindset may not entirely protect female powerlifters from body dissatisfaction, particularly when higher BMI values are present. In conclusion, while female powerlifters generally report moderate to high body image scores, there remains a statistically significant inverse relationship

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between BMI and body image. These findings underscore the need for sports programs and coaching strategies that support body positivity and educate athletes about the limitations of BMI as a measure of health or appearance. Encouraging athletes to focus on strength, functionality, and performance rather than appearance may help mitigate body image concerns and promote psychological well-being in strength sports.

Conclusion

This study examined the relationship between Body Image and Body Mass Index (BMI) among 50 Indian female powerlifters, revealing a significant negative correlation ($r = -0.33$, $p = 0.0186$). The findings suggest that as BMI increases, body image scores tend to decrease, indicating that athletes with higher BMI, despite their muscularity, may experience greater body dissatisfaction. This reflects the broader issue of societal pressures that favour thinness over strength, creating psychological conflict for women in strength sports. Although powerlifters generally possess higher muscle mass contributing to elevated BMI, this measure does not distinguish between fat and muscle, often misrepresenting the health and body composition of athletes. The average BMI was 29.1 (categorized as overweight), and the average Body Image Questionnaire (BIQ) score was 67.25, indicating a moderately positive self-perception overall. However, variability in BIQ scores shows that body image concerns still persist for some athletes. The study emphasizes the need to reevaluate the use of BMI in athletic contexts and to shift the narrative in sports culture. Rather than emphasizing weight or appearance, training environments should promote strength, functionality, and performance. Doing so can help female powerlifters foster more positive body image and psychological well-being.

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