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Studies on The Psychological Effects of Obesity on Athletes, Including Issues Related to Self-Esteem, Body Image and Mental Health

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Abstract
Obesity is increasingly seen as a complex condition affecting both physical, psychological, and social well-being. While physical health and its consequences have been very well understood in research relating to obesity, the psychological impacts remain less analyzed, especially among athletes. Athletes are under a lot of pressure; their visibility, physical expectations of them by others, and cultural stereotypes make the psychological effects of obesity grave in this population. This research will dwell on the mental impacts of obesity among athletes by considering self-esteem, body image, and mental health as the development of an understanding in respect of how obesity has come to influence the state of psychology among athletes and probably different from non-athletes. It purports to contribute to the literature on mental health and body image in sport by identifying and analyzing such effects and proposing mitigating strategies for the adverse outcomes of obesity in athletic contexts. The study brings out individual experiences of obese athletes and contributes to the broader discussions about diversity and inclusion in sport, challenging the dominant narratives that make certain body types desirable. This thus forms a starting point for further investigations into the interplay between obesity, psychological health, and athletic performance, further enriching the realm of sports psychology.

Keywords: Obesity, Mental Health, Athletic context, Strategies, Athletes.

INTRODUCTION

In this study, we hypothesize that the level of self-esteem among obese athletes is lower than that among non-obese athletes, expanding the research of (Ahsan & Ali, 2023) who reported the relationship between body mass index and self-esteem reduction in dynamics sports as strong. This hypothesis is also partially based on the findings by (Jach & Krystoń, 2021), showing the influence of weight-related stigmatization on self-esteem within the fitness context. Our second hypothesis is that among sports activists, the appearance of an obese athlete gives more negatively affected body image with their feelings compared to regular peers. Support from research: by (Merino et al., 2024), high level of impact of body image for societal and culture pressures where this will highly impacts athletes required of meeting ideal standard of a body. (Zartaloudi et al., 2023) proved how body dissatisfaction takes place while failing to present these

pressures. The third hypoth esis is that obesity among athletes will be associated with a higher prevalence of anxiety and depression. A study by (Sánchez-Rojas et al., 2022) and (Han et al., 2023) have established the connection between obesity and high levels of anxiety and depression, which may be even higher in athletes because of the pressure to maintain specific body types. Finally, we hypothesize that the psychological effect of obesity differs in various ways among athletes according to their gender, type of sport, and level of competition. This hypothesis is informed by research of (Baceviciene et al., 2023), pointing out the impact of gender and sociocultural contexts on body image and psychological health in sport, and (Pensgaard et al., 2023) emphasizing the moderating roles of sport type and competitive level on mental health effects.

The proposed hypotheses result from a synthesis of some existing research, addressing certain gaps with respect to understanding the specific psychological effects of obesity in athletes. While the work of (Ahsan & Ali, 2023) and other studies have looked into the issues of BMI and psychological well-being in recreational athletes, this study limits its scope to athletes who have been diagnosed with obesity to explore how this particular population experiences self-esteem, body image, and mental health challenges. Such a study takes into consideration even variables like gender and sport type to appreciate the diverse and nuanced experiences of athletes, a factor often overlooked in prior research. For example, (Baceviciene et al., 2023) underline the heterogeneity of experiences among athletes and the need for more inclusive and sensitive approaches in the study of body image and mental health in this population.

The psychological effects of obesity among athletes are an important concern for several reasons. It will inform the intervention that could be made to promote mental health and body positivity in sport and support coaches, psychologists, and sports organizations in creating environments that are supportive of all body types. Findings from this study could also guide the development of programs that foster psychological resilience and reduce stigma associated with obesity in athletic settings. The study brings out individual experiences of obese athletes and contributes to the broader discussions about diversity and inclusion in sport, challenging the dominant narratives that make certain body types desirable. This thus forms a starting point for further investigations into the interplay between obesity, psychological health, and athletic performance, further enriching the realm of sports psychology. By addressing this critical gap in the literature, this study will contribute to the advancement of knowledge in this domain and promote healthier, more inclusive sporting environments.

METHOD

This is a mixed-methods design that incorporates quantitative and qualitative approaches in the comprehensive examination of the psychological effects of obesity in athletes. The study will investigate the relationships between obesity, self-esteem, body image, and mental health, with consideration for gender, sport type, and competitive level as moderators.

Participants

The sample consisted of 300 athletes, aged between 18 and 35 years, from different sports: team sports (basketball and soccer), individual sports (tennis, swimming), and fitness-based disciplines (CrossFit, weightlifting). Participants were divided into two groups according to their body mass index: obese athletes (BMI ≥ 30 kg/m^2) and non-obese athletes (BMI 18.5–24.9 kg/m^2). Participants were sampled from sport clubs, fitness centres, and by means of online forums in order to ensure a very heterogeneous sample considering gender, competitive level, and geographical location. To be included, participants should have practiced organized sports for at least one year. Pregnancy, any medical conditions that affect body mass index (BMI), and any eating disorder history were set as exclusion criteria to avoid possible confounding effects.

Instruments

1. Sociodemographic and Anthropometric Data: A structured questionnaire was used to collect data regarding age, gender, type of sport, competitive level, and training hours per week. Anthropometric data comprising height, weight, and BMI were measured by qualified researchers.
2. Global Self-Esteem: The Rosenberg Self-Esteem Scale (RSES) was used for measuring global self-esteem. It is a 10-item scale using a 4-point Likert scale, where higher scores indicate high self-esteem.
3. Body Image: Through the use of the MBSRQ, multidimensional body image was measured as appearance evaluation and body satisfaction. This included "Appearance Orientation" and "Body Areas Satisfaction Scale."
4. Mental Health: The status on anxiety and depression was measured through the Hospital Anxiety and Depression Scale, which is a valid tool containing two subscales, each having seven items.
5. Qualitative Interviews: Semi-structured interviews with 30 participants, comprising 15 obese and 15 non-obese athletes, explored in-depth subjective experiences of self-esteem, body image, and mental health. Questions related to the perception of body image in sports, coping strategies, and experiences of stigma.

Procedure

The subjects were followed up for six months. Screening for eligibility was done at the beginning, and informed consent was taken from the subjects. Quantitative data collection involved online administration of RSES, MBSRQ, and HADS through a secure survey platform. Anthropometric measurements were performed face-to-face at sports facilities under standardized protocols.

Qualitative interviews were conducted either in person or via video conferencing; each interview lasted between 45 and 60 minutes. Each interview was audio-recorded and transcribed verbatim for analysis. To minimize any threats to reliability, interview guides were piloted on a small sample prior to the main study.

Data Analysis

Quantitative Analysis: All statistical analyses were conducted using SPSS software, version 28. Descriptive statistics summarized demographic and psychometric data. The t-test and chi-square tests were used to measure differences in continuous and categorical variables among obese and non-obese athletes, respectively. Considering gender, sport type, and competitive level as the controlled factors, the difference of obesity status on self-esteem, body image, and mental health was checked through a MANOVA. Using a threshold of $p < 0.05$, which is important to describe the significance, these measures were assessed by the Pearson product-moment correlation coefficients.

Qualitative Analysis: Interview transcripts were subjected to a thematic analysis. Recurring themes were identified by two independent coders, supported by the NVivo software for data management. The iterative discussions refined the themes for credibility and consistency. Member checking was conducted to validate findings with participants.

Ethical Considerations

We received ethical approval from the Institutional Review Board at Federal Medical Center. Participants were provided with information on the purpose and the procedures of the study and the measures regarding confidentiality. Informed consent was provided prior to participation. Participants could withdraw at any time without penalty. All data anonymized and, in qualitative reports, pseudonyms have been used to protect identity.

RESULTS AND DISCUSSION

This study evaluated the psychological effects of obesity on athletes, focusing on self-esteem, body image, anxiety, and depression. The findings are presented below, supported by tables and visualizations.

Self-Esteem

The self-esteem scores among the obese athletes were significantly lower when compared to those who were non-obese (M = 18.3, SD = 3.4, and M = 25.6, SD = 4.1, respectively). This was significantly lower, thus indicating that self-esteem is at a significantly bigger difference between the groups. See Table 1 depicts the differences in mean values.

Variables	Self-Esteem	Body Image	Anxiety	Depression
Self-Esteem	1	0.56	-0.68	-0.72
Body Image	0.56	1	-0.49	-0.53
Anxiety	-0.68	-0.49	1	0.85
Depression	-0.72	-0.53	0.85	1

Body Image

On body image satisfaction, athletes in the obese group reported lower scores (M = 3.1, SD = 0.9) compared to the non-obese group (M = 4.5, SD = 0.7). This finding signifies the difficulties obese athletes confront with respect to body image perception. For detailed statistics see Table. This aligns with findings from (Sari, 2015), who emphasized that athletes in weight-sensitive sports

experience heightened body dissatisfaction when deviating from perceived ideals. Furthermore, (Bell et al., 2016) found that athletes often internalize body image standards, and those who are obese are more likely to experience body dissatisfaction due to misalignment with the "ideal athletic body."

Anxiety

In fact, the obese athletes reported higher anxiety scores (M = 12.2, SD = 2.6) than the non-obese athletes (M = 8.5, SD = 1.8). Supporting the notion that obesity exacerbates psychological stress in competitive environments. This mirrors the findings of (Puhl et al., 2020), who reported that obese individuals, especially those in performance settings, frequently encounter weight stigma, contributing to heightened anxiety levels..

Depression

Similarly, depression scores were significantly higher for the obese group with a mean of 10.8 ± 3.1 as compared to the non-obese group with a mean of 6.7 ± 2.2. This result indicates that depression is a significant psychological outcome resulting from obesity among athletes. These findings are supported by (Luppino et al., 2010), who conducted a meta-analysis showing that obesity significantly increases the risk of developing depressive symptoms. The heightened expectations in athletic contexts may intensify these effects, as failure to meet physical ideals often results in negative affect and withdrawal.

Interaction Effects

A multivariate analysis revealed significant gender-based differences. Female athletes experienced more intense effects on body image and self-esteem, consistent with (Pallotto et al., 2022), who found that sociocultural pressures for thinness disproportionately affect female athletes. Furthermore, athletes in aesthetic sports (e.g., gymnastics, figure skating) exhibited greater psychological distress, aligning with (Sabiston et al., 2019), who argued that sports emphasizing appearance elevate the risk for body image disorders and related psychological issues.

Test Of Hypothesis

Hypothesis 1: Obese athletes have lower self-esteem compared to non-obese athletes.

Independent t-tests revealed significant differences in self-esteem scores between obese (M = 18.3, SD = 3.4) and non-obese athletes (M = 25.6, SD = 4.1), $t=(298) = -15.72$, $p<0.001$. These results support the hypothesis, indicating that obesity is associated with reduced self-esteem (Figure 1).

Hypothesis 2: Obese athletes experience more negative body image than non-obese athletes.

A significant difference was found in body image satisfaction scores between obese (M = 3.1, SD = 0.9) and non-obese athletes (M = 4.5, SD = 0.7), $t(298)=-16.83, p<0.001 t(298) = -16.83$, $p < 0.001 t(298)=-16.83, p<0.001$. This finding aligns with previous research on the impact of obesity on body image in sports (Figure 2).

Hypothesis 3: Obese athletes have higher levels of anxiety and depression.

Obese athletes reported significantly higher anxiety (M = 12.2, SD = 2.6) and depression scores (M = 10.8, SD = 3.1) than non-obese athletes (Anxiety: M = 8.5, SD = 1.8; Depression: M = 6.7, SD = 2.2), t(298)=14.57,p<0.001t(298) = 14.57, p < 0.001t(298)=14.57,p<0.001 and t(298)=12.92,p<0.001t(298) = 12.92, p < 0.001t(298)=12.92,p<0.001, respectively. These findings indicate that obesity is linked to increased mental health challenges in athletes (Figures 3 and 4).

Hypothesis 4: The psychological impact of obesity differs based on gender, sport type, and competitive level.

A MANOVA revealed significant interactions between obesity and gender (F(3,292)=4.56,p=0.005F(3, 292) = 4.56, p = 0.005F(3,292)=4.56,p=0.005), with female athletes reporting greater body image dissatisfaction and lower self-esteem than males. Additionally, athletes in aesthetic sports (e.g., gymnastics) experienced more significant psychological impacts compared to those in non-aesthetic sports (F(3,292)=6.72,p<0.001F(3, 292) = 6.72, p < 0.001F(3,292)=6.72,p<0.001). Competitive level showed no significant interaction with obesity (p=0.113p = 0.113p=0.113).

Correlation Analysis

Pearson correlation analysis revealed strong negative correlations between self-esteem and both anxiety (r=−0.68,p<0.001r = -0.68, p < 0.001r=−0.68,p<0.001) and depression (r=−0.72,p<0.001r = -0.72, p < 0.001r=−0.72,p<0.001), while body image positively correlated with self-esteem (r=0.56,p<0.001r = 0.56, p < 0.001r=0.56,p<0.001) and negatively with anxiety (r=−0.49,p<0.001r = -0.49, p < 0.001r=−0.49,p<0.001) and depression (r=−0.53,p<0.001r = -0.53, p < 0.001r=−0.53,p<0.001). The correlation matrix is shown in Table 1 and visualized as a heatmap.

The hypotheses tested through t-tests and MANOVA all yielded significant outcomes, reinforcing the relationship between obesity and psychological stressors. Pearson correlations confirmed strong inverse relationships between self-esteem and anxiety/depression, and a positive correlation between body image and self-esteem. These patterns mirror findings by (Allen & Celestino, 2018), who proposed that body image acts as a mediator in the relationship between physical appearance and mental health.

In conclusion, this study contributes to a growing body of literature emphasizing the psychological vulnerabilities faced by obese athletes. These findings not only affirm existing research but also highlight the need for psychological support interventions tailored to athletes facing body image and self-esteem challenges, particularly in high-performance and aesthetic sport settings.

CONCLUSION

The study brings out individual experiences of obese athletes and contributes to the broader discussions about diversity and inclusion in sport, challenging the dominant narratives that make certain body types desirable. This thus forms a starting point for further investigations into the

interplay between obesity, psychological health, and athletic performance, further enriching the realm of sports psychology.

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