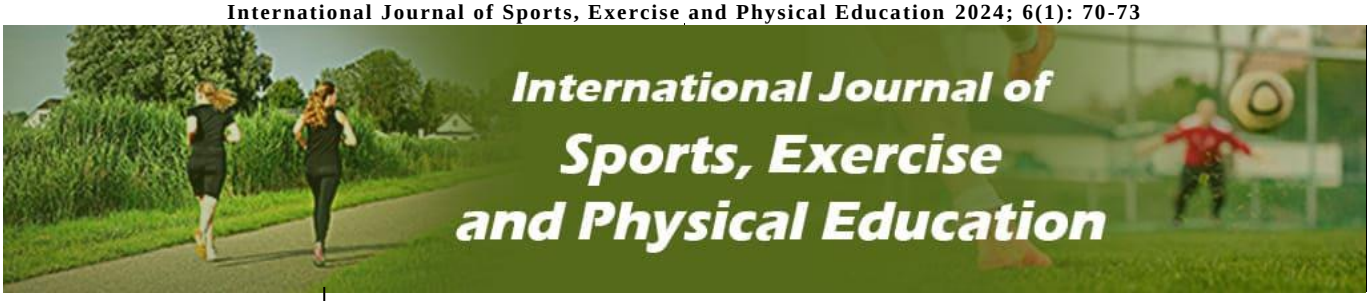

ISSN Print: 2664-7281
ISSN Online: 2664-729X
Impact Factor: RJIF 8
IJSEPE 2024; 6(1): 70-73
www.sportsjournals.net
Received: 04-12-2023
Accepted: 03-01-2024

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Exploring the relationship between sedentary behaviour and disordered eating attitude among male university students

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DOI: https://doi.org/10.33545/26647281.2024.v6.i1b.76

Abstract
Background: Relation between Sedentary behavior and disordered eating attitudes among young adults need to be addressed to fill a critical gap in public health research.
Aim: Investigating associations between sitting time and disordered eating attitudes in a sample of 101 university students (aged 18-30) using Spearman's correlation and descriptive statistics.
Methods: Sedentary behavior assessed through the Global Physical Activity Questionnaire (GPAQ), and eating behaviors evaluated using the Disordered Eating Attitude Scale. The study employs a convenience sampling approach and analyzes data with non-parametric statistical procedures.
Results: Moderate negative correlation found between sitting time and disordered eating attitudes. Descriptive statistics highlight central tendencies and variabilities, emphasizing the nuanced relationship between sedentary behavior and eating attitudes.
Conclusion: The study provides valuable insights into the complex dynamics of sedentary behavior and disordered eating attitudes among young adults. The observed negative correlation suggests a potential role of sedentary behavior in shaping attitudes toward food. Findings underscore the need for targeted health interventions considering distinct aspects of eating attitudes in the context of sedentary behavior, contributing to the broader discourse on promoting healthier lifestyles among diverse populations.

Keywords: GPAQ, sedentary behavior, disordered eating attitudes, spearman's correlation, university students

Introduction
The complex relationship between sedentary behavior and disordered eating attitudes among young adults has emerged as a critical focus within the realm of public health and behavioral sciences. Disordered eating attitudes, characterized by concerns about shape and weight, unnatural weight management methods, and binge eating, have been extensively linked to various psychological and physical health concerns in the literature. Prior research indicates associations with depressive symptoms, anxiety, low self-esteem, and even drug abuse, emphasizing the multifaceted nature of disordered eating (Weinberg & Gould, 2011; Croll *et al*., 2002) [2, 3].
Overweight individuals, particularly young people, often grapple with heightened shape and weight concerns, potentially exacerbating disordered eating attitudes. The intricate relationship between binge eating, unnatural weight management, and increased body fat underscores the complexity of these behaviors and their potential impact on overall health (Bonci *et al*., 2008; Wolff *et al*., 2011; Del-Valle *et al*., 2014) [5, 6, 7]. These disordered eating attitudes, when present in overweight adolescents, pose challenges to weight management programs, hindering physical activity and potentially contributing to the perpetuation of overweight conditions.
Understanding the layered relationship between sedentary behavior and disordered eating attitudes is crucial, especially considering the potential confounding effects on weight management efforts. Body-related distress and societal stigmatization can deter physical activity among overweight adolescents, further exacerbating the challenges associated with sedentary behavior. Moreover, the use of weight control measures and dieting, often initiated in response to disordered eating attitudes, may inadvertently lead to increased weight gain.

While existing literature has explored the impact of various factors on eating behaviors and weight management, there remains a noTable gap in understanding the specific relationship between sedentary behavior and disordered eating attitudes among young adults. This study aims to address this gap by systematically investigating the associations between sedentary behavior, as measured by sitting time, and various dimensions of disordered eating attitudes. The findings of this research have the potential to inform targeted interventions aimed at promoting healthier lifestyles and mitigating the adverse consequences of both sedentary behavior and disordered eating attitudes among young adults.

In the subsequent sections, we present a detailed methodology, insightful results, and a comprehensive discussion, providing valuable insights into the complex dynamics of sedentary behavior and disordered eating attitudes, thus contributing to the broader discourse on health promotion strategies within young adult populations.

Methodology

Sample

The study included 101 university students from Guru Nanak Dev University, Amritsar, aged between 18 to 30 years. Participants were selected from various academic departments using a convenience sampling approach by ensuring representation.

Sedentary Behavior Assessment

Sedentary behavior was assessed using the Global Physical Activity Questionnaire (GPAQ) instrument. GPAQ is a validated tool for evaluating physical activity patterns, including sedentary behavior. Participants responded to questions related to their sedentary activities, providing insights into the extent of sedentary behavior.

Disordered eating attitude assessment

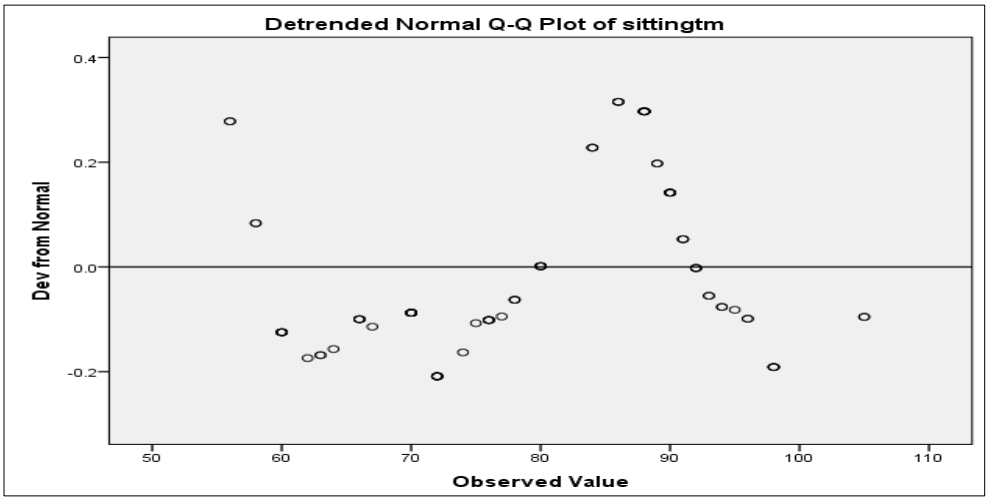
The Disordered Eating Attitude Scale, designed by Alvarenga *et al*. (2010) [17], served as the instrument to evaluate the eating behaviors of the participants. This comprehensive scale covers various parameters related to attitudes toward eating. Participants responded to a series of questions, each scored on a scale ranging from 1 to 5. The scale considered aspects such as frequency of disordered eating behaviors, emotional relationships with food, concerns about food and weight gain, restrictive and compensatory practices, feelings toward eating, and perceptions of normal eating.

Each question was assigned a numerical value, contributing to an overall score that reflects the participant's eating attitude. Higher scores on the scale indicated a more unfavorable or disordered eating attitude. This structured approach ensured a thorough analysis of eating behaviors, capturing the complexity of disordered eating attitudes within the university student population.

Statistical Procedure

Descriptive statistics, such as mean and standard deviation, were utilized to present demographic data. The normality of data distribution was examined through histograms. Given the non-normal distribution, non-parametric Spearman's rank-order correlation analysis was applied to explore relationships between demographic variables and sedentary behavior. The significance level was set at 0.05, indicating statistical significance.

Results



* "Sittingtm" indicates Sitting Time/day

Fig 1: Normality plot of sitting time per day

Table 1: Descriptive Statistics of variables

Variable	Mean	Std. Deviation
Sitting time	79.38	12.304
Relationship with food	30.73	7.225
Concerns about food and weight gain	10.09	3.265
Restrictive and compensatory practices	10.05	3.090
Feeling toward eating	9.66	2.566
Idea of normal eating	29.98	6.986
Disordered eating attitude	91.17	11.406

Table 1 presents the descriptive statistics for the key study variables, shedding light on the central tendencies and variabilities within the dataset. The mean sitting time is approximately 79.38 minutes per day, with a standard deviation of 12.304, indicating a moderate degree of variability in sedentary behavior among participants. In terms of eating behaviors and attitudes, participants, on average, report a mean score of 30.73 for the relationship with food, suggesting a moderate level of positive association. Concerns about food and weight gain exhibit a mean of 10.09, indicative of a moderate level of concern, while restrictive and compensatory practices have a mean of 10.05, suggesting a moderate engagement in such behaviors. The mean score for feeling toward eating is 9.66, indicating a moderate level of emotional response to eating experiences. Participants, on average, report a mean score of 29.98 for the idea of normal eating, reflecting a moderate endorsement of normal eating patterns. Lastly, the mean score for disordered eating attitude is 91.17, indicating a relatively high level of disordered eating attitudes among the study participants.

Table 2: Show Sitting Time (Minutes) and Spearman's rho

Variable	Sitting Time (Minutes)	
	Spearman's rho	Sig.
Relationship with food	-.295**	.003
Concerns about food and weight gain	-.066	.512
Restrictive and compensatory practices	-.152	.129
Feeling toward eating	.110	.273
Idea of normal eating	-.118	.242
Disordered eating attitude	-.227*	.022

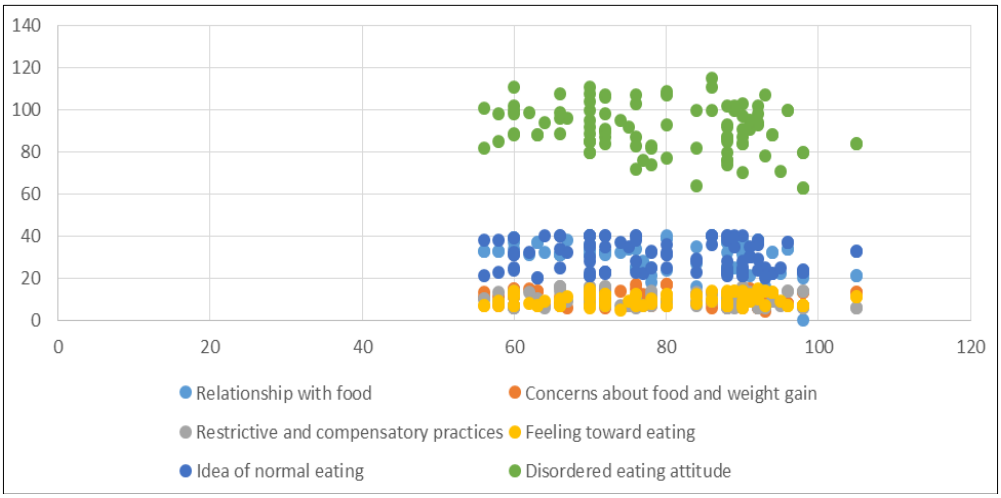


Fig 2: Scatterplot of the sitting time parameters of disordered eating attitude

As shown in Table 2, the Spearman's rank correlation coefficients were computed to assess the relationship between "Sitting Time (Minutes)" and various variables related to eating behaviors and attitudes. The results reveal a moderate negative correlation between sitting time and the relationship with food (rho=-.295, P=0.003), suggesting that as sitting time increases, there is a tendency for a decrease in positive relationships with food. Although there is a weak negative correlation with concerns about food and weight gain (rho=-.066, P=0.512), this association is not statistically significant, indicating that sitting time may not strongly influence such concerns. Additionally, a weak negative correlation with restrictive and compensatory practices (rho=-.152, P=0.129) suggests a trend toward decreased engagement in these practices with increased sitting time, although not reaching statistical significance. Feeling toward eating shows a weak positive correlation (rho= 0.110, P=0.273), but it is not statistically significant. Similarly, the weak negative correlation between sitting time and the idea of normal eating (rho=-.118, P=0.242) is not statistically significant. However, a moderate negative correlation with disordered eating attitude is significant (rho=-.227*, P=0.022), indicating that increased sitting time is associated with a tendency towards fewer disordered eating attitudes.

Overall, the findings suggest nuanced associations between sitting time and various eating behaviors, emphasizing the importance of considering distinct aspects of eating attitudes in the context of sedentary behavior.

Discussion

The current investigation probes into the complex relationship between sedentary behavior, represented by sitting time, and various facets of eating behaviors and attitudes. Notably, the mean sitting time of approximately 79.38 minutes suggests a moderate level of sedentary behavior among the study participants, providing a baseline for further exploration. The observed mean scores for variables related to eating behaviors unveil interesting patterns within the sample.

In examining the association between sitting time and disordered eating attitudes, the findings reveal a moderate negative correlation (rho=-.227*, P=0.022), signifying that increased sitting time is linked to a tendency toward fewer disordered eating attitudes. This aligns with previous research indicating a complex interplay between sedentary behavior and eating attitudes (Torres-McGehee *et al*., 2009;

Goldschmidt *et al*., 2008) [13, 14]. The weak negative correlation between sitting time and the idea of normal eating (rho=-.118, P=0.242) suggests a potential influence on perceptions of normal eating, albeit not statistically significant.

Furthermore, the descriptive statistics provide valuable insights into participants' mean scores across different domains of eating behaviors. The mean scores for relationship with food, concerns about food and weight gain, restrictive and compensatory practices, feeling toward eating, and idea of normal eating fall within the moderate range, indicating a diverse range of attitudes and behaviors within the study population.

It is essential to interpret these results within the context of previous research and acknowledge the nuanced nature of the relationship between sedentary behavior and eating attitudes. While our findings resonate with studies demonstrating associations between sedentary behavior and disordered eating attitudes in specific populations, such as dancers or those at risk for eating disorders, it's crucial to recognize the multifaceted factors influencing these associations. Additionally, the current study adds to the existing literature by examining these relationships in a broader context, emphasizing the need for comprehensive interventions considering both sedentary behavior and eating attitudes among diverse populations.

Limitations

However, it is imperative to recognize the limitations of this study, including the reliance on self-reported sitting time and eating behaviors, which may introduce biases. Future research could benefit from more objective measures and exploring potential moderating variables to enhance the understanding of this complex interplay.

Conclusion

In conclusion, this study contributes valuable insights into the associations between sitting time and eating behaviors, highlighting the need for nuanced considerations in health interventions. The observed negative correlation with disordered eating attitudes suggests that sedentary behavior may play a role in shaping attitudes toward food. As the field progresses, continued research will be crucial in refining our understanding of these relationships and informing targeted interventions aimed at promoting healthier lifestyles among diverse populations.

Conflict of Interest: None

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