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CONNECTING THE DOTS: SLEEP, STRESS, BODY MASS INDEX IN A COMPREHENSIVE STUDY ON COLLEGE GOING STUDENTS

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ABSTRACT

This research paper explores the link between lifestyle choices, Body Mass Index (BMI), and general health status among college students by analyzing primary data collected from over 150 participants. As the student population constitutes a significant segment of the young adult demographic, investigating the factors influencing their health outcomes is of paramount importance. This study aims to shed light on the impact of various lifestyle choices on BMI and overall health, offering valuable insights for promoting a healthier lifestyle among college students. The results reveal a strong correlation between lifestyle choices and BMI among college students, supported by the robustness of the primary data collected. Unhealthy dietary habits, sedentary behavior, irregular sleep patterns, and high stress levels have been associated with elevated BMI and a decline in general health status within this specific sample. Conversely, adopting a balanced diet, regular physical activity, adequate sleep, and stress management had positive effects on BMI and overall health. This research underscores the importance of promoting healthier habits through targeted interventions and education to empower college students in cultivating better lifestyles during this critical phase of life. Out of all the factors tested for their effect on BMI, stress has significant impact. Gender and BMI and did not show any relation. Study also proved that stress and sleep are two intertwined lifestyle factors. physical activity, outside food and stress showed a significant relationship between them, proving college students should have a check on their food choices and must be physically active to combat stress.

Keywords: *Lifestyle Choices, BMI, Sedentary Lifestyle, General Health Status, Correlation.*

Introduction

The health and well-being of college students are of significant concern, given that this young adult population forms a substantial demographic within society. During their college years, students often experience profound lifestyle changes, including alterations in dietary habits, sleep patterns, physical activity levels, and stress management. Such lifestyle choices can significantly impact their overall health status and may be reflected in their Body Mass Index (BMI) – a widely used indicator of body composition and potential health risks. Understanding the interplay between lifestyle choices, BMI, and general health status among college students is crucial for promoting healthier behaviors and fostering positive health outcomes during this critical life phase. Conversely, adopting healthier lifestyle practices, such as consuming a balanced diet, engaging in regular physical activity, maintaining consistent sleep patterns, and effectively managing stress, has been linked to improved general health status and optimal BMI in college students. These positive lifestyle choices not only contribute to maintaining a healthy weight but also enhance overall physical and mental well-being, promoting academic performance, and fostering a positive college experience. While existing literature provides valuable insights into these associations, gaps remain in comprehensively understanding the specific links between lifestyle choices, BMI, and general health status in the unique context of college life. Furthermore, the potential impact of demographic and environmental factors, peer influence, and the availability of health resources on these relationships requires further investigation.

Therefore, the primary objective of this research paper is to analyze primary data collected from a diverse sample of over 150 college students to gain a deeper understanding of the interconnections between lifestyle choices, BMI, and general health status. By addressing these gaps, this study aims to

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contribute to the body of knowledge that informs targeted interventions and educational programs aimed at promoting healthier habits and enhancing the overall health and well-being of college students. In the following sections, we will present the methodology employed to collect and analyze the data, discuss the findings, and explore the implications of this research. Ultimately, this study aspires to provide evidence-based insights that can assist educators, policymakers, and health professionals in developing tailored strategies to empower college students in making informed choices and cultivating healthier lifestyles, fostering a healthier and thriving college community.

Need for Study

The study exploring the link between lifestyle choices, BMI, and general health status among college students is of paramount importance due to several compelling reasons.

- **Health Concerns Among College Students:** College life often marks a critical transitional period when young adults undergo significant lifestyle changes. Unhealthy habits, such as poor dietary choices, sedentary behavior, and irregular sleep patterns, can become prevalent during this time, leading to potential health risks. Understanding the impact of these lifestyle choices on college students' BMI and general health status is crucial to address the growing health concerns in this population.
- **Rising Rates of Obesity and Chronic Diseases:** In recent years, there has been a disturbing trend of increasing obesity rates and related chronic diseases among college students. Investigating the relationship between lifestyle choices, BMI, and health outcomes can shed light on the factors contributing to these concerning health trends, enabling targeted interventions to curb the rise of obesity and associated health risks.
- **Academic Performance and Well-being:** Health and academic performance are closely intertwined. Unhealthy lifestyle choices can lead to decreased energy levels, impaired cognitive function, and reduced academic performance. By identifying the impact of lifestyle on BMI and general health status, educators and administrators can implement measures to support students' well-being and enhance their academic success.
- **Public Health Implications:** The health of college students has broader public health implications, as they are future leaders and contributors to society. By prioritizing healthier lifestyles during their college years, these young adults are more likely to adopt such habits throughout their lives, positively impacting public health in the long term.

Review of Literature

Madhuwala Chaturvedi (2014)A study of nutritional status and life style associated risk factors for noncommunicable disease in adolescent girls was undertaken with the purpose to assess nutritional status and highlight the health and lifestyle related issues in adolescent girls and recommended possible ways to deal with them so as to promote a healthier lifestyle in this population which may ultimately prevent or delay the onset of non-communicable disease. Bade, Anil Kisan(2021) conducted a study and concluded that There is no drug in current or prospective use that holds as much promise for sustained health as a lifetime program of physical exercise Making a good living will not help you unless you live a weakness lifestyle that will allow you to enjoy what you have. Your lifestyle is the most important factor affecting your personal well-being but most people don't know how to make the right choices to live their best life. During the last three decades the benefits of physical activity have been substantiated by scientific evidence linking increased physical activity and positive lifestyle habits to better health and improved quality of life. JACOBO MINTZER and colleagues conducted a study on lifestyle choices and brain health and concluded that lifestyle choices like mental well-being, exercise, cognitively stimulating activities, sleep, nutrition, positively impact brain health. Shaojie and colleagues studied Longitudinal Relationship Between Health-Promoting Lifestyles, and Health-Related Quality of Life Among College Students, and concluded that the effect is bidirectional. Chitra Tomy, Farah Naaz Fathima, Savan Sara Mathew, Avita Rose Johnson study focused to identify barriers to healthy lifestyle among college-going students in Bengaluru Urban District and concluded that Barriers to healthy lifestyle are common among adolescents and youth. The topmost barriers identified were stress- and diet-related barriers. Wan-Chen Hsu, and Chia-Hsun Chiang, conducted a study on Effect of BMI and Perceived Importance of Health on the Health Behavior of College Students: Cross-Sectional Study. Their study establishes, for the first time, the interaction of BMI and the perceived importance of health on health behaviors. The perception of health was found to have a significant effect on exercise behaviors. Thus, the perception of health plays a significant role in the exercise behaviors of college students.

Methodology

- **Study Design**

This study employs a cross-sectional study design to examine the link between lifestyle choices, BMI, and general health status among college students. A cross-sectional approach allows for the simultaneous collection of data from a diverse sample of participants, providing a snapshot of their current lifestyle practices, BMI measurements, and self-reported health status.

- **Participants**

The study targets college students from various academic disciplines and campuses. A diverse sample of over 150 participants will be recruited to ensure representation from different demographic backgrounds, such as age, gender, ethnicity, and socioeconomic status. Inclusion criteria will require participants to be currently enrolled as full-time students in the participating institutions.

- **Data Collection**

Primary data is collected through a combination of self-administered questionnaires and objective measurements. The self-administered questionnaires capture information on lifestyle choices, including dietary habits, physical activity levels, sleep patterns, stress management practices.

- **Lifestyle Choices Assessment**

The questionnaire consisted of validated instruments to assess various lifestyle factors. For dietary habits, a food frequency questionnaire was used to capture information on the frequency and types of foods consumed. Physical activity levels assessed using validated physical activity questionnaires, while sleep patterns will be evaluated using sleep quality and duration scales. Stress management practices assessed through standardized self-report measures.

- **BMI Calculation**

BMI were calculated by dividing weight (in kilograms) by height (in meters) squared. BMI categories, such as underweight, normal weight, overweight, and obesity, were determined based on standard cutoff points.

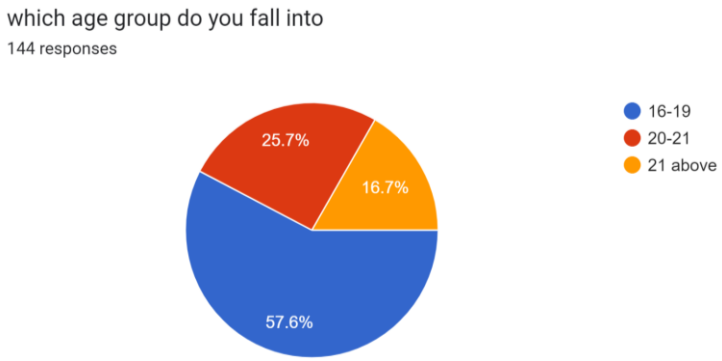
- **Data Analysis**

Descriptive statistics was used to summarize the participants' demographic characteristics, lifestyle choices, BMI, and general health status. Bivariate analyses, such as correlation coefficients and t-tests, were employed to explore the relationships between lifestyle factors, BMI, and health outcomes. Multiple regression analysis was conducted to identify significant predictors of BMI and general health status, controlling for potential confounding variables.

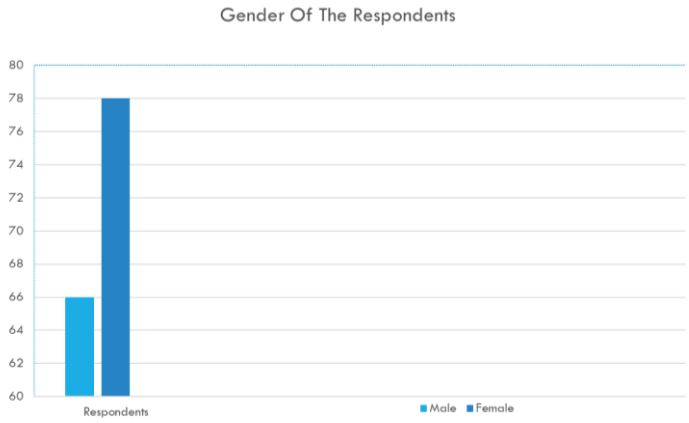
Objectives of the Study

- Examine the relationship between lifestyle choices and BMI among college students.
- Assess the impact of lifestyle choices on the general health status of college students.
- Contribute to the existing body of knowledge on college student health.

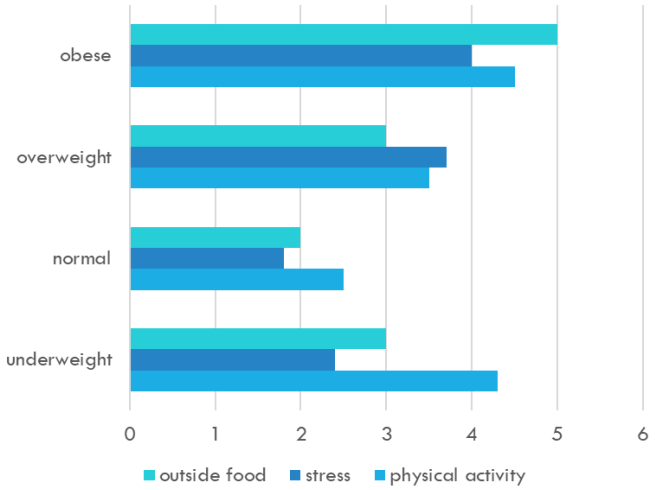
Analysis and Interpretation



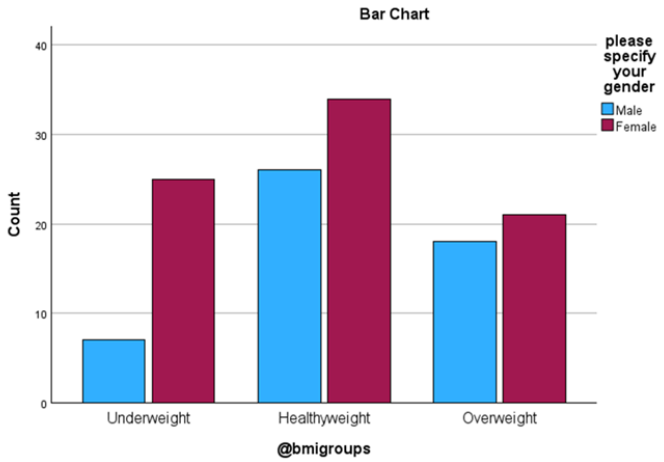
Out of 144 responses 57.6% students were from 16-19 years age group, 25.7% students fell under 20-21 years age group, 16.7% under the group of 21 above.



Out of 144 respondents, 78 (54.13%) were female students, whereas 66(45.83%) male students contributed to the study by responding.



People whose frequency of physical activity is less to nill and have high consumption of outside food fall under the category of obese/overweight/underweight with high stress levels. Contrary is evident for people under normal BMI.



There is no relationship between gender of the student and BMI category.

ANOVA

Problem

To identify if there is significant association between stress and BMI in college students.

Hypothesis

H_1: There insignificant association between stress and BMI.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
stress	Between Groups	8.716	2	4.358	4.210	.017
	Within Groups	132.506	128	1.035		
	Total	141.221	130			

ANOVA was performed to examine the connection between BMI and stress across three BMI groups. With a significance level of 0.017, the null hypothesis of no difference in stress across BMI categories is rejected in favor of the alternative hypothesis. The analysis underscores a noteworthy relationship between BMI and stress levels, highlighting the need for further investigation into underlying mechanisms. These findings have implications for understanding physiological contributors to stress and informing health interventions.

Chi-Square Test

Problem to check if there is any relationship between BMI category and gender

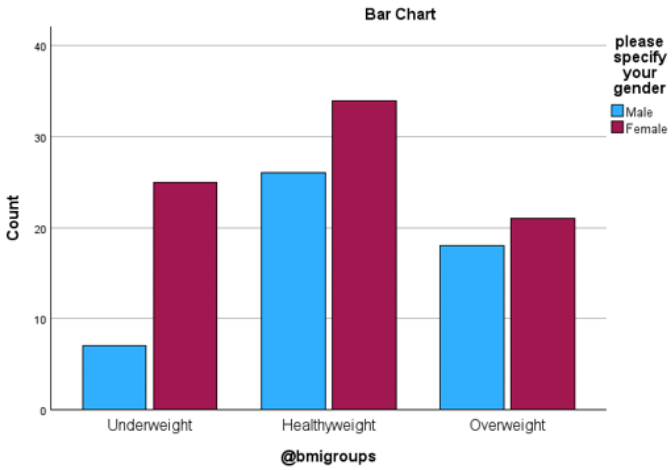
Hypothesis

H_o: There is no relationship between gender and BMI

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.260[a]	2	.072
Likelihood Ratio	5.568	2	.062
Linear-by-Linear Association	4.047	1	.044
N of Valid Cases	131		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.46.



In this research study, a Chi-Square analysis was employed to investigate the potential association between gender and BMI across three distinct BMI groups. The obtained p-value of 0.072 led to the acceptance of the null hypothesis, indicating that no significant association exists between gender and BMI in the studied population. These findings contribute to the ongoing discourse on the relationship between gender and BMI and highlight the importance of considering various factors that may influence this association. Further research is recommended to explore this relationship in different populations and contexts.

Correlation

Problem to find if there exists any correlation between stress and sleep.

Correlations[a]

		sleep	stress
sleep	Pearson Correlation	--	
stress	Pearson Correlation	-.6704	--
	Sig. (2-tailed)	.038	

The correlation between sleep patterns and stress levels. The calculated Pearson correlation coefficient of 0.6704 indicates a moderate positive relationship between these variables. This finding highlights the significance of addressing sleep quality as a potential avenue for managing stress. Further studies could explore the underlying mechanisms and potential interventions to enhance both sleep quality and stress management, ultimately contributing to improved holistic health outcomes.

ANOVA

Problem to check if there is association of factors like physical activity and outside food consumption on BMI.

Hypothesis

H_1: There is significant relationship between physical activity and outside food consumption on BMI.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Physical activity		12.296	4	3.074	3.153	.016
		126.741	130	.975		
		139.037	134			
Outsidefood		7.326	4	1.831	2.609	.039
		91.267	130	.702		
		98.593	134			

The statistical analysis yielded significant results for both physical activity and outside food consumption variables. The p-value obtained for physical activity was 0.016, indicating a statistically significant relationship with BMI. This led to the rejection of the null hypothesis, which postulated no significant connection between physical activity and BMI. Similarly, the p-value for outside food consumption was calculated as 0.039, signifying a statistically significant link with BMI. Consequently, the null hypothesis suggesting no significant relationship between outside food consumption and BMI was also rejected.

Limitations of Study

Some limitations of this study include self-report bias in the questionnaires, potential selection bias, and the cross-sectional design, which limits the ability to establish causal relationships. However, by carefully addressing these limitations and conducting a robust analysis, the study aims to contribute valuable insights into the link between lifestyle choices, BMI, and general health status among college students.

Conclusion

In conclusion, this study highlights the significant impact of lifestyle choices on the BMI and general health status of college students. Unhealthy habits, such as poor diet, sedentary behavior, irregular sleep, and high stress levels, contribute to elevated BMI and compromised health. Conversely, adopting balanced lifestyles with better eating habits, regular exercise, adequate sleep, and stress management positively influence BMI and overall health. The findings emphasize the need for targeted interventions and holistic approaches to student well-being. By designing evidence-based health promotion programs and addressing potential mediating factors, we can empower college students to cultivate healthier habits and lead more fulfilling lives. This research adds to the body of knowledge on college student health, providing valuable insights for policymakers, educators, and health professionals. Promoting healthier choices during college years can have lasting effects on students' overall health, fostering a healthier and more resilient young generation.

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