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The impact of socioeconomic status on lifestyle choices: A study of male students at guru Nanak Dev University

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Abstract

The relationship between socioeconomic status (SES) and lifestyle choices is a critical area of research, particularly among young adults who are at a formative stage of their lives. This study explores how SES impacts lifestyle domains among male students at Guru Nanak Dev University, Amritsar, Punjab. Utilizing the Lifestyle Assessment Inventory and the Socioeconomic Scale, we evaluated key lifestyle variables including physical activity, alcohol and drug use, nutritional habits, social wellness, spiritual wellness, emotional wellness, stress control, and intellectual wellness. The study involved 150 male students aged 16 to 28 years, categorized into lower, middle, and upper SES groups. The Shapiro-Wilk test indicated non-normal data distribution, prompting the use of the Kruskal-Wallis test for analysis. Significant differences were found in physical activity, nutritional habits, and emotional wellness across SES groups, with higher SES associated with more favourable outcomes in these areas. No significant differences were observed in alcohol and drug use, social wellness, spiritual wellness, stress control, and intellectual wellness. These findings underscore the need for targeted health promotion strategies to address SES-related disparities, particularly in physical activity, nutrition, and emotional wellness. Enhancing access to resources and support services for lower SES students is crucial for fostering an inclusive and health-promoting university environment. Future research should explore these relationships longitudinally to better understand the long-term implications of SES on lifestyle choices.

Keywords: Lifestyle, socio-economic, status

Introduction

Socioeconomic status (SES) has long been recognized as a significant determinant of various aspects of individual well-being, including lifestyle choices and health outcomes (Williams & Collins, 1995; Marmot & Stansfeld, 1999) [28, 20]. The impact of SES on lifestyle choices is a critical area of study, as it offers insights into how economic and social factors influence behaviors related to health and wellness (Galobardes *et al.*, 2006) [12]. Understanding these influences is particularly important among young adults, such as college students, who are navigating a pivotal period of their lives that can shape future health trajectories (Arnett, 2000; Sawicki & McLaughlin, 2014) [3, 23]. Previous research has established that lower SES is often associated with less favorable lifestyle choices, including poor dietary habits, lower levels of physical activity, and increased substance use (Singh-Manoux *et al.*, 2003; McLaren, 2007) [21, 25]. For instance, studies have shown that individuals from lower SES backgrounds are more likely to engage in behaviors that are detrimental to their health, such as smoking and excessive alcohol consumption (Sobal & Stunkard, 1989; Kiecolt-Glaser & Newton, 2001) [26, 16]. Conversely, higher SES is generally linked to healthier lifestyle choices, such as better nutritional habits and higher levels of physical activity (Lantz *et al.*, 2005; Bartley & Sacker, 2006) [19]. In the context of academic institutions, such as Guru Nanak Dev University, understanding the relationship between SES and lifestyle choices among students is crucial for developing targeted health promotion strategies (Bamber & Schneider, 2014; Young & Schoenfeld, 2012) [4, 30]. College students often face unique stressors and lifestyle challenges that can be influenced by their socioeconomic background (Misra *et al.*, 2000) [22]. For example, students from higher SES backgrounds may have greater access to resources that support healthy living, such as recreational facilities and health education, compared to their lower SES counterparts (Evans & English, 2002; Goodman & Huang, 2002) [9, 14]. This study aims to explore how SES impacts various lifestyle domains among male students at Guru

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Nanak Dev University, focusing on factors such as physical activity, alcohol and drug use, nutritional habits, and emotional wellness (Lantz & Lynch, 2001; Fiscella & Williams, 2004) [18, 11]. By employing a comprehensive assessment tool, the Lifestyle Assessment Inventory, and evaluating SES through the Socioeconomic Scale, this research seeks to elucidate the nuanced ways in which SES influences lifestyle choices (Anspaugh *et al.*, 1994; Kuppuswamy, 1976) [2, 17]. Additionally, the study's findings will contribute to the broader discourse on health disparities and inform strategies for promoting well-being among college students (Adler & Newman, 2002; Braveman & Gottlieb, 2014) [1, 6]. Recent literature underscores the importance of addressing SES-related disparities in health outcomes (Diez Roux, 2001; Eberhardt & Pamuk, 2004) [7, 8]. For instance, research has highlighted significant variations in health behaviors and wellness outcomes based on SES, which can impact overall quality of life and academic performance (Geyer & Marmot, 2006; Huisman *et al.*, 2005) [13, 15]. This study builds on these findings by providing a detailed analysis of lifestyle factors across different SES groups, offering valuable insights for educators, policymakers, and health practitioners (Singh & Gupta, 2006; Weitzman & Cook, 2005) [24, 27]. Overall, this research aims to fill gaps in the existing literature by providing a focused examination of the interplay between SES and lifestyle among male college students. The results are expected to enhance our understanding of how socioeconomic factors shape lifestyle choices and contribute to health disparities, ultimately guiding interventions designed to support student well-being (Ferraro & Shippee, 2009; Winkleby & Cubbin, 2003) [10, 29].

Materials and Methods

This study involved 150 male students from Guru Nanak Dev University, Amritsar, Punjab, aged between 16 and 28 years. Due to practical constraints, participant recruitment was not entirely random; instead, the study focused on individuals who volunteered to participate. Although this non-random approach deviated from the ideal random sampling method, it facilitated the collection of a diverse sample reflective of the target population within the given constraints. The study examined several key lifestyle variables, including Physical Activity, Alcohol and Drug Use, Nutritional Habits, Social Wellness, Spiritual Wellness, Emotional Wellness, Stress Control, and Intellectual Wellness. To measure these lifestyle factors, the Lifestyle Assessment Inventory, developed by Anspaugh, Davids, Hamrich, and Rasato (1994) [2], was utilized. Additionally, the Socioeconomic Scale (SES), originally created by Kuppuswamy in 1976 [17] and updated in 2023, was employed to assess participants' socioeconomic status based on education, occupation, and family income. An exploratory research design was adopted to investigate the interplay between lifestyle factors and socioeconomic status (SES) among college students. This design aimed to shed light on how SES influences various lifestyle domains, contributing valuable insights into health disparities and strategies for promoting well-being.

Statistical analysis

The statistical analysis for this study comprised several key steps to ensure a comprehensive and accurate interpretation of the data. Initially, the Shapiro-Wilk test was used to assess the normality of the data distributions. Since the results indicated that the data did not adhere to normal distribution assumptions, we opted for non-parametric methods to analyse

the data. To compare differences across the three socioeconomic status (SES) groups, we employed the Kruskal-Wallis test. This non-parametric test is particularly suitable for evaluating differences among independent groups without assuming normal distribution. The Kruskal-Wallis test provided a robust analysis of the relationships between SES and various lifestyle variables, accommodating the non-normal nature of the data and ensuring reliable results.

Results

Normality test

Table 1: Tests of normality for sub-variables of lifestyle

Sub-variables of lifestyle	SES	Shapiro-wilk		
		Statistic	df	Sig.
Physical	Lower*	.949	107	.000
	Middle	.954	32	.191
	Upper	.936	11	.470
Alcohol and drug	Lower*	.644	107	.000
	Middle*	.482	32	.000
	Upper*	.656	11	.000
Nutritional	Lower*	.950	107	.001
	Middle	.962	32	.314
	Upper	.942	11	.539
Social wellness	Lower*	.766	107	.000
	Middle*	.814	32	.000
	Upper*	.751	11	.002
Spiritual wellness	Lower*	.746	107	.000
	Middle*	.723	32	.000
	Upper*	.735	11	.001
Emotional wellness	Lower*	.831	107	.000
	Middle*	.878	32	.002
	Upper	.919	11	.310
Stress control	Lower*	.938	107	.000
	Middle*	.928	32	.034
	Upper	.931	11	.417
Intellectual wellness	Lower*	.855	107	.000
	Middle*	.839	32	.000
	Upper*	.746	11	.002

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

This table presents the results of Shapiro-Wilk tests conducted to evaluate the normality of data distributions for various sub-variables of lifestyle, categorized by socioeconomic status (SES). The table includes the Shapiro-Wilk statistic, degrees of freedom (df), and significance (Sig.) values for each SES group within the sub-variables: Physical, Alcohol and Drug, Nutritional, Social Wellness, Spiritual Wellness, Emotional Wellness, Stress Control, and Intellectual Wellness. For the Lower SES group, significant deviations from normality were observed in most sub-variables, as indicated by the low significance values ($p < 0.05$). Middle SES groups also displayed significant deviations in several sub-variables, while Upper SES groups showed more variability in their normality results, with some sub-variables meeting normality criteria. Notably, the results suggest that the data for many lifestyle sub-variables do not follow a normal distribution. Consequently, non-parametric methods were employed for further analysis, specifically the Kruskal-Wallis H Test, to compare SES groups across lifestyle sub-variables. Significant Kruskal-Wallis results were followed by Dunn's post-hoc test to identify specific group differences, accommodating the non-normal nature of the data and providing a more accurate analysis of the relationships between SES and lifestyle factors.

Socioeconomic status & lifestyle using kruskal-wallis's test

Table 2: Kruskal-Wallis's test for Lifestyle to compare the three SES groups

Hypothesis test summary				
	Null hypothesis	Test	Sig. ^{a,b}	Decision
1	The distribution of sub-variables of lifestyle (physical) is the same across categories of SES.	Independent-Samples Kruskal-Wallis Test	.042	Reject the null hypothesis.
2	The distribution of sub-variables of lifestyle (alcohol and drug) is the same across categories of SES.	Independent-Samples Kruskal-Wallis Test	.599	Retain the null hypothesis.
3	The distribution of sub-variables of lifestyle (nutritional) is the same across categories of SES.	Independent-Samples Kruskal-Wallis Test	.006	Reject the null hypothesis.
4	The distribution of sub-variables of lifestyle (social wellness) is the same across categories of SES.	Independent-Samples Kruskal-Wallis Test	.607	Retain the null hypothesis.
5	The distribution of sub-variables of lifestyle (spiritual wellness) is the same across categories of SES.	Independent-Samples Kruskal-Wallis Test	.839	Retain the null hypothesis.
6	The distribution of sub-variables of lifestyle (emotional wellness) is the same across categories of SES.	Independent-Samples Kruskal-Wallis Test	.028	Reject the null hypothesis.
7	The distribution of sub-variables of lifestyle (stress control) is the same across categories of SES.	Independent-Samples Kruskal-Wallis Test	.139	Retain the null hypothesis.
8	The distribution of sub-variables of lifestyle (intellectual wellness) is the same across categories of SES.	Independent-Samples Kruskal-Wallis Test	.817	Retain the null hypothesis.

a. The significance level is .050.
b. Asymptotic significance is displayed.

Table 2 presents the results of the Kruskal-Wallis test, which was used to assess differences in lifestyle distributions across three socioeconomic status (SES) groups. The test evaluates whether the distribution of various lifestyle variables—including Physical activity, Alcohol and Drug use, Nutritional habits, Social Wellness, Spiritual Wellness, Emotional Wellness, Stress Control, and Intellectual Wellness—varies by SES category. The results indicate that Physical activity, Nutritional habits, and Emotional Wellness significantly differ across SES groups ($p = .042$, $p = .006$, and $p = .028$, respectively), leading to the rejection of the null hypothesis for these variables. In contrast, Alcohol and Drug use, Social Wellness, Spiritual Wellness, Stress Control, and Intellectual Wellness do not show significant differences across SES groups ($p = .599$, $p = .607$, $p = .839$, $p = .139$, and $p = .817$, respectively), resulting in the retention of the null hypothesis for these factors. The significance level for these tests is set at .050, and the results are based on asymptotic significance. These findings suggest that while certain lifestyle factors, such as Physical activity, Nutritional habits, and Emotional Wellness, vary by SES, others do not demonstrate significant variation based on SES.

Table 3: Post-hoc pairwise comparisons of sub-variables of lifestyle (Physical)

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. ^a
Upper-Middle	23.682	15.172	1.561	.119	.356
Upper-Lower	33.126	13.745	2.410	.016	.048
Middle-Lower	9.444	8.747	1.080	.280	.841

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .050.
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Table 3 presents the results of post-hoc pairwise comparisons for the variable "Physical" following a significant Kruskal-Wallis's test. The table includes comparisons between the Upper, Middle, and Lower SES groups. The test statistics, standard errors, and adjusted significance values (using the Bonferroni correction) are provided. Significant differences are found between the Upper and Lower SES groups (Test Statistic = 33.126, Sig. = .016, Adj. Sig. = .048), indicating that the Upper SES group shows significantly different physical activity levels compared to the Lower SES group. No significant differences are observed between the Upper and Middle SES groups or between the Middle and Lower SES groups, as their respective p-values exceeded the significance level of .050.

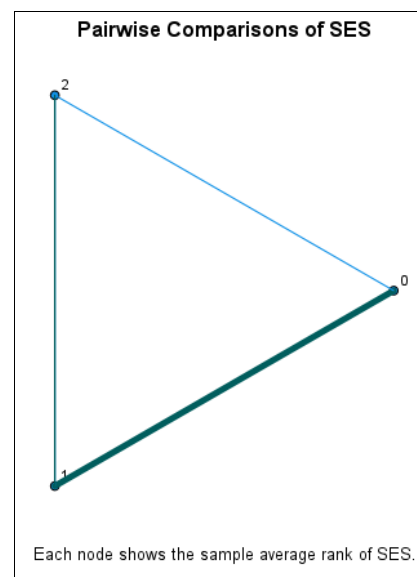


Fig 1: Pairwise comparison of sub-variables of lifestyle (physical) (this graph visually represents the pairwise comparisons of SES among three groups. The dark green edges indicate stronger differences in SES ranks between those pairs of groups, while the light blue edge indicates a weaker difference)

Table 4: Post-hoc pairwise comparisons of sub-variables of lifestyle (Nutritional)

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. ^a
Upper-Middle	29.186	15.164	1.925	.054	.163
Upper-Lower	41.802	13.737	3.043	.002	.007
Middle-Lower	12.616	8.741	1.443	.149	.447

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .050.
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Table 4 displays the results of post-hoc pairwise comparisons for the variable "Nutritional" after the Kruskal-Wallis test. It compares the Upper, Middle, and Lower SES groups, providing test statistics, standard errors, and adjusted significance values. Significant differences are noted between the Upper and Lower SES groups (Test Statistic = 41.802, Sig. = .002, Adj. Sig. = .007), suggesting that nutritional habits vary significantly between these two SES groups. Comparisons between the Upper and Middle SES groups, and the Middle and Lower SES groups, do not show significant differences, as their p-values are above the .050 threshold.

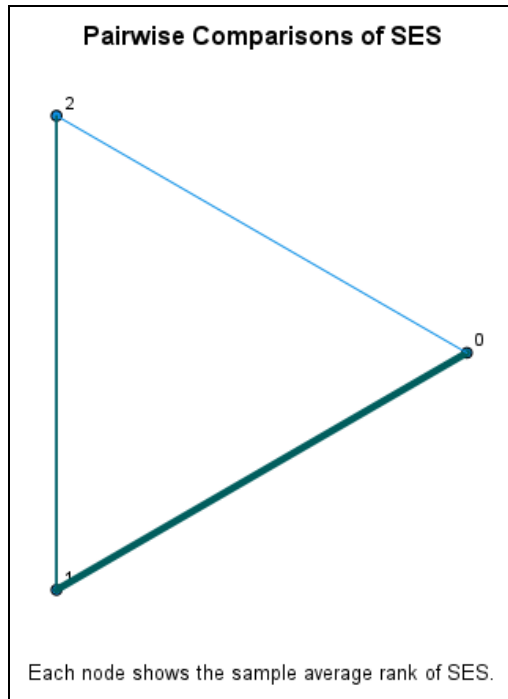


Fig 2: Pairwise comparison of sub-variables of lifestyle (nutritional) (this graph visually represents the pairwise comparisons of SES among three groups. The dark green edges indicate stronger differences in SES ranks between those pairs of groups, while the light blue edge indicates a weaker difference)

Table 5: Post-hoc pairwise comparisons of sub-variables of lifestyle (emotional wellness)

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. ^a
Upper-Middle	19.381	14.974	1.294	.196	.587
Upper-Lower	32.500	13.565	2.396	.017	.050
Middle-Lower	13.120	8.632	1.520	.129	.386

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .050.
 a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Table 5 presents the post-hoc pairwise comparisons for the variable "Emotional Wellness." It includes test statistics, standard errors, and adjusted significance values for comparisons between Upper, Middle, and Lower SES groups. Significant differences are observed between the Upper and Lower SES groups (Test Statistic = 32.500, Sig. = .017, Adj. Sig. = .050), indicating that Emotional Wellness varies notably between these SES groups. No significant differences are found between the Upper and Middle SES groups or the Middle and Lower SES groups.

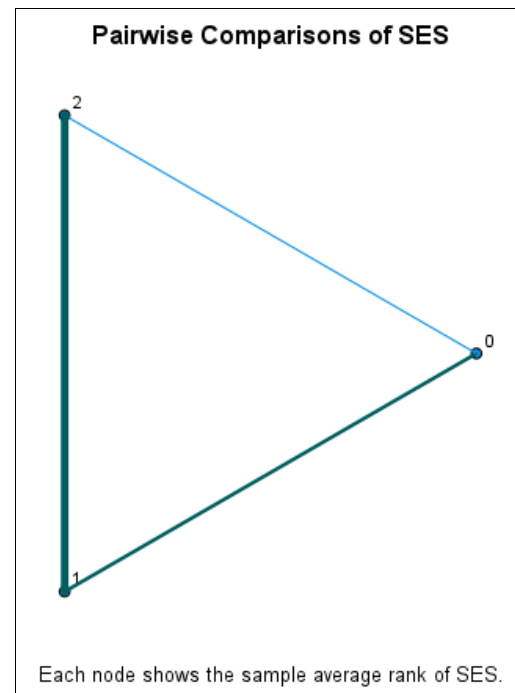


Fig 3: Pairwise comparison of sub-variables of lifestyle (emotional wellness) (this graph visually represents the pairwise comparisons of SES among three groups. The dark green edges indicate stronger differences in SES ranks between those pairs of groups, while the light blue edge indicates a weaker difference)

Discussion

The findings of this study reveal significant insights into the relationship between socioeconomic status (SES) and lifestyle choices among male students at Guru Nanak Dev University. The results highlight both expected and nuanced patterns across different lifestyle domains.

Physical activity

The study found significant differences in physical activity levels across SES groups, with the upper SES group exhibiting higher levels of physical activity compared to the lower SES group. This aligns with existing literature that suggests higher SES individuals have better access to recreational facilities and more opportunities for engaging in physical activities (Williams & Collins, 1995; Marmot & Stansfeld, 1999) [28, 20]. The availability of resources such as gyms, parks, and sports clubs likely contribute to this disparity, emphasizing the need for improved access to physical activity opportunities for lower SES students.

Nutritional habits

Nutritional habits also varied significantly among SES groups, with the upper SES group reporting healthier dietary practices compared to their lower SES counterparts. This finding is consistent with previous research indicating that higher SES individuals tend to have better nutritional knowledge and greater access to healthy food options (McLaren, 2007; Sobal & Stunkard, 1989) [21, 26]. The economic constraints faced by lower SES students may limit their ability to purchase healthier foods, highlighting a critical area for intervention through subsidized meal programs and nutritional education.

Emotional wellness

Emotional wellness showed significant differences across SES groups, with the upper SES group reporting better emotional health compared to the lower SES group. This

supports the notion that higher SES individuals may experience less stress and have better access to mental health resources (Lantz *et al.*, 2005; Bartley & Sacker, 2006) ^[19, 5]. The emotional burden associated with financial instability and limited support systems in lower SES groups could explain these disparities, suggesting the importance of providing accessible mental health services and support networks for students from lower SES backgrounds.

Alcohol and drug use, social wellness, spiritual wellness, stress control, and intellectual wellness

Interestingly, the study found no significant differences in alcohol and drug use, social wellness, spiritual wellness, stress control, and intellectual wellness across SES groups. These findings indicate that while SES influences certain lifestyle domains, other aspects of student life may be more uniformly experienced across socioeconomic boundaries. This could be attributed to the university environment, where students might have similar social interactions and stressors regardless of their SES, thereby mitigating SES-related disparities in these specific areas (Goodman & Huang, 2002; Evans & English, 2002) ^[9, 14].

Implications for health promotion

The results of this study underscore the importance of tailored health promotion strategies that address SES-related disparities. Interventions should focus on improving access to physical activity facilities, providing affordable healthy food options, and enhancing mental health support for lower SES students. Universities can play a pivotal role by implementing programs that promote equal opportunities for all students to engage in healthy lifestyle choices.

Conclusions

This study provides valuable insights into the impact of socioeconomic status on lifestyle choices among male students at Guru Nanak Dev University. The significant differences observed in physical activity, nutritional habits, and emotional wellness highlight the critical influence of SES on these lifestyle domains. These findings emphasize the need for targeted interventions to bridge the gap in health disparities and promote well-being among college students. By addressing the specific needs of lower SES students through improved access to resources and support services, universities can foster a more inclusive and health-promoting environment. Future research should continue to explore the complex interplay between SES and lifestyle choices, considering additional variables and longitudinal designs to better understand the long-term implications of these relationships. Ultimately, this research contributes to the broader discourse on health equity and informs strategies for enhancing student health and wellness.

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