

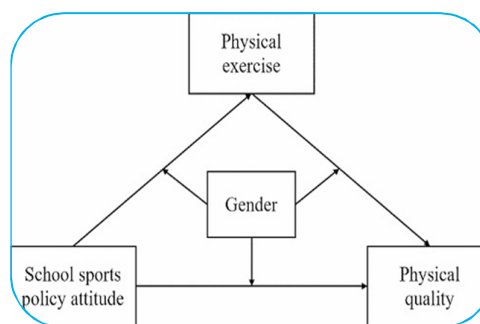


**ATTITUDES TOWARD PHYSICAL ACTIVITY AMONG UNDERGRADUATE STUDENTS:
A QUANTITATIVE ANALYSIS OF DEMOGRAPHIC PATTERNS, DESCRIPTIVE TRENDS,
AND SCALE RELIABILITY**

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ABSTRACT:

This study examines attitudes toward physical activity among 600 undergraduate students using primary data collected through a structured questionnaire. The analysis follows a quantitative framework, with descriptive statistics used to summarize participant characteristics and attitude scores, reliability analysis used to assess the internal consistency of the measurement scale, and inferential statistics used to compare attitudes across demographic groups. The sample was balanced across key variables, including gender, age, educational qualification, and academic stream, supporting a broad contextual interpretation of the findings. Overall attitude scores indicated a generally positive orientation toward physical activity, with a mean of 111.45 and a standard deviation of 5.96 on a 30-item scale ranging from 30 to 150. However, reliability testing produced a negative Cronbach's alpha of -0.017, indicating very weak internal consistency and suggesting caution in interpreting composite scale results. The chapter therefore presents a mixed methodological picture: encouraging substantive attitudes toward physical activity, but limited psychometric coherence of the instrument.



KEYWORDS: *physical activity , structured questionnaire , methodological picture, summarize participant characteristics and attitude scores.*

INTRODUCTION

Physical activity is widely recognized as an essential component of healthy living, with benefits that extend beyond physical fitness to mental well-being, academic functioning, and overall quality of life. In the context of undergraduate education, where students often face academic pressure, irregular routines, and increasing sedentary behavior, attitudes toward physical activity become especially important because they can shape whether students actually engage in active lifestyles. A positive attitude does not automatically guarantee participation, but it creates a favorable psychological basis for behavior change and sustained involvement in exercise. For this reason, examining students' attitudes toward physical activity is a meaningful step in understanding health behavior within higher education settings.

Undergraduate students represent a particularly relevant population for this topic because habits formed during this stage often continue into later adulthood. Research on college populations

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has shown that students generally recognize the health and psychosocial value of physical activity, including its role in self-esteem, mental well-being, and healthy daily living. At the same time, several studies indicate that knowledge and positive perception do not always translate into regular participation, which makes attitude an important variable to investigate separately from actual behavior. This gap between belief and action suggests that attitudes may function as a bridge between awareness and practice, especially when social, academic, and environmental conditions are supportive.

The present study, titled *Attitudes Toward Physical Activity Among Undergraduate Students: A Quantitative Analysis of Demographic Patterns, Descriptive Trends, and Scale Reliability*, focuses on three closely connected concerns. First, it examines the demographic composition of the student sample in order to understand how gender, age, educational qualification, and academic stream are distributed. Second, it analyzes descriptive attitude trends to determine whether students generally hold positive, neutral, or negative views toward physical activity. Third, it evaluates the reliability of the attitude measurement scale so that the strength and consistency of the instrument can be assessed before drawing firm conclusions. Together, these elements allow the study to present not only what students think about physical activity, but also how confidently those thoughts can be measured.

The importance of demographic analysis lies in its ability to provide context for interpretation. Gender, age, academic discipline, and qualification level can all influence students' perceptions, habits, and participation patterns in physical activity. A balanced demographic profile improves the fairness of comparison and strengthens the generalize ability of results. In this study, demographic information is therefore not treated as background detail alone, but as an analytical foundation for understanding whether different categories of students show distinct attitudinal tendencies.

Descriptive analysis is equally important because it reveals the overall direction and concentration of students' responses. A mean score, standard deviation, and percentile distribution can show whether attitudes cluster around positive, neutral, or negative values and whether the sample is homogeneous or varied. In attitude research, such patterns help researchers understand whether the population is broadly supportive of physical activity or divided in its opinions. This is especially relevant in university settings, where institutional culture, curriculum demands, and peer influence may shape how students value exercise and movement.

Reliability analysis provides the final methodological safeguard. Even when respondents appear to express favorable attitudes, the scale used to capture those attitudes must demonstrate internal consistency if the findings are to be considered dependable. A weak or inconsistent scale can obscure the true pattern of responses and limit the validity of statistical interpretation. For that reason, the present study examines reliability as a necessary part of the overall analysis rather than as a secondary technical detail.

The study also has theoretical significance. Attitude is widely discussed in behavioral frameworks as one of the major determinants of intention and action. When students perceive physical activity positively, they are more likely to intend to participate in it, especially if social expectations and perceived control are also favorable. This makes attitude an important construct in health promotion and education research because it helps explain why some students are more likely than others to adopt active lifestyles. Understanding this construct among undergraduates can therefore inform future interventions aimed at encouraging regular physical activity.

In the present study, the problem lies in the limited and context-specific understanding of how undergraduate students view physical activity and whether these views are consistent across demographic categories. Although attitudes are widely treated as a predictor of behavior, the available evidence shows that the link between attitude and engagement is complex and may vary by personal motivation, enjoyment, social support, and institutional setting. Therefore, it is necessary to assess the overall attitude profile of undergraduate students, compare attitudes across gender and academic stream, and evaluate the reliability of the scale used to measure the construct. Without such analysis, it is difficult to draw meaningful conclusions about the attitudinal basis of physical activity participation among students.

METHODOLOGY

Research Design

The study adopted a **quantitative survey design** to examine undergraduate students' attitudes toward physical activity. A survey approach was appropriate because it allowed the researcher to collect standardized responses from a large number of students and convert them into numerical data for statistical analysis. The design supported descriptive analysis of attitude levels, comparative analysis across demographic groups, and reliability testing of the measurement scale.

Population of the Study

The population of the study consisted of undergraduate students. Undergraduate students were selected because this group is a meaningful target for physical activity research, as attitudes formed during this stage often influence later health behavior. The study focused on students who could respond to a structured questionnaire on attitudes toward physical activity.

Sample and Sampling

The sample comprised **600 undergraduate students**. The sample included both male and female respondents and represented students from different age groups, educational qualifications, and academic streams. The final sample was balanced across the main comparative categories, including **318 males and 282 females**, and **300 Arts students and 300 Science students**. This balance strengthened subgroup comparisons and reduced the possibility of sampling bias.

Variables of the Study

The major variables examined in the study were demographic variables and attitude variables. The demographic variables included **gender, age, educational qualification, and academic stream**. The main dependent variable was **attitude toward physical activity**, measured through a structured scale. The study also examined the internal consistency of the scale and the relationships among its attitude dimensions.

Instrumentation

Data were collected using a **structured questionnaire** designed to measure attitudes toward physical activity. The attitude scale contained **30 Likert-type items**, with responses coded numerically from 1 to 5. Higher scores indicated a more positive attitude toward physical activity. The questionnaire also collected demographic information from each respondent.

Data Collection Procedure

The data were obtained directly from undergraduate students through primary data collection. Each questionnaire was administered to a respondent and treated as one valid case in the dataset. All 600 questionnaires were found usable, and no cases were excluded from analysis. The data were then coded and entered into SPSS for analysis.

Data Preparation and Coding

The demographic variables were numerically coded to facilitate SPSS analysis. Gender, age, educational qualification, and academic stream were assigned category codes for frequency and comparative analysis. Likert-scale responses were coded in ascending order from strongly disagree to strongly agree. Composite scores were then calculated for the overall attitude scale and its related dimensions.

Statistical Tools

The study used both **descriptive** and **inferential** statistics. Descriptive statistics included frequency, percentage, mean, median, standard deviation, and percentile values. Inferential analysis included independent samples t-tests for comparing gender and academic stream groups, reliability

analysis using Cronbach's alpha, and correlation analysis among attitude dimensions. SPSS was used for all computations to ensure consistency and accuracy.

Reliability of the Scale

The internal consistency of the Attitude Toward Physical Activity Scale was tested using Cronbach's alpha. The reliability analysis showed a very low negative alpha value for the overall scale, indicating weak internal consistency among the 30 items. Item-total statistics were also examined to assess whether any individual item was strongly affecting the reliability of the scale. This step was necessary because reliable measurement is essential for sound quantitative analysis.

Ethical Considerations

The study was conducted using student responses collected through a structured survey format. The research maintained confidentiality of responses and used the data only for academic analysis. Participation was limited to undergraduate students who were willing to provide responses for the study. The analysis was reported in aggregate form, without identifying any individual respondent.

RESULTS AND ANALYSIS

Data Preparation and Coding

Before analysis, the data were carefully screened, coded, and verified to ensure accuracy and consistency. Every questionnaire was treated as one case, and all 600 responses were found to be valid and usable. No cases were excluded from the final dataset, which strengthened the reliability of the analysis. Demographic variables and attitude items were numerically coded to facilitate statistical processing in SPSS.

Case Processing Summary

Cases	Valid	Excluded	Total
Respondents	600	0	600

The case processing summary confirms that the entire sample was included in the analysis. This indicates a complete dataset with no missing or invalid cases affecting the results. Such completeness is important in survey research because it enhances the credibility of the statistical findings.

Coding of Demographic Variables

The demographic variables collected through the questionnaire were gender, age, educational qualification, and academic stream. These were assigned numerical codes to simplify analysis in SPSS. Gender was coded as male and female, age was grouped into eight categories, educational qualification included B.A., B.Sc., B.Com, and B.Ed., and academic stream was divided into Arts and Science. This coding made it possible to generate frequency distributions and compare groups statistically.

Coding of Attitude Items

The Attitude Toward Physical Activity Scale used a five-point Likert response format. Responses were coded from 1 to 5, with higher scores indicating a more positive attitude toward physical activity. All items were scored in the same direction to maintain consistency in interpretation. Composite scores were then calculated for the overall attitude scale and used in the subsequent analysis.

Demographic Profile of Respondents

The demographic profile of the respondents provides important context for interpreting the study findings. The sample was intentionally balanced across the major background variables to support meaningful comparison. The following subsections present the distribution of respondents by gender, age, educational qualification, and academic stream.

Gender Distribution

Gender	Frequency	Percent
Male	318	53.0
Female	282	47.0
Total	600	100.0

The sample included 318 male students and 282 female students. This distribution is fairly balanced, with males forming 53.0 percent and females 47.0 percent of the sample. The near-equal representation of both genders is useful for gender-wise comparison of attitudes toward physical activity.

Age Distribution

Age (Years)	Frequency	Percent
17	75	12.5
18	77	12.8
19	76	12.7
20	71	11.8
21	71	11.8
22	78	13.0
23	78	13.0
24	74	12.4
Total	600	100.0

The respondents were distributed fairly evenly across the age range of 17 to 24 years. No age group was overrepresented, which reduces the risk of age-related bias in the findings. The highest proportions were found in the 22-year and 23-year age groups, each accounting for 13.0 percent of the sample.

Educational Qualification

Qualification	Frequency	Percent
B.A.	157	26.2
B.Sc.	161	26.8
B.Com	145	24.2
B.Ed.	137	22.8
Total	600	100.0

The respondents represented a variety of undergraduate programs. B.Sc. students formed the largest group, followed closely by B.A. students. The sample was well distributed across the four programs, which strengthens the representativeness of the academic background data.

Academic Stream

Academic Stream	Frequency	Percent
Arts	300	50.0
Science	300	50.0
Total	600	100.0

The sample was equally divided between Arts and Science students. This perfect balance is especially valuable because stream-wise comparison is one of the central aims of the study. Equal group size improves the fairness and interpretability of comparative analysis.

Descriptive Statistics of Attitude

Descriptive statistics were used to assess the overall attitude of undergraduate students toward physical activity. The scale contained 30 items, and total scores could range from 30 to 150. Higher scores indicated a more favorable attitude toward physical activity. The results are presented below.

Overall Attitude Score

Statistic	Value
N	600
Minimum	96.00
Maximum	129.00
Mean	111.45
Standard Deviation	5.96
Median	112.00
25th Percentile	107.00
75th Percentile	116.00

The mean overall attitude score was 111.45, with a standard deviation of 5.96. This indicates that, on average, respondents held a positive attitude toward physical activity. The relatively low standard deviation suggests that the scores were clustered fairly closely around the mean. The median score of 112.00 is close to the mean, which indicates a fairly symmetrical distribution of responses.

Interpretation of Attitude Scores

Score Feature	Interpretation
Mean above midpoint	Positive orientation toward physical activity
Narrow spread	Responses were fairly consistent
Minimum well above theoretical minimum	Strongly negative attitudes were uncommon
Median close to mean	Distribution was approximately symmetrical

The percentile analysis further confirms this pattern. Half of the respondents scored 112 or below, and three-quarters scored 116 or below, indicating a concentration of scores in a positive range. Overall, the descriptive results suggest a favorable attitudinal climate toward physical activity among the respondents.

Reliability Analysis

Reliability analysis was conducted to assess the internal consistency of the 30-item scale. Cronbach's alpha was used as the principal reliability coefficient. In attitude-based research, internal consistency is important because it indicates whether the items are measuring the same underlying construct in a coherent way.

Reliability Statistics

Measure	Value
Cronbach's Alpha	-0.017
Number of Items	30

The alpha coefficient of -0.017 indicates extremely poor internal consistency. A negative alpha suggests that the average inter-item covariance is negative, meaning the items did not function together as a unified scale. This is a serious psychometric limitation and requires caution in interpreting composite scores.

Item-Total Summary

Item Pattern	Observation
Corrected item-total correlations	Mostly negative or near zero
Alpha if item deleted	No major improvement from deleting any single item
Reliability problem	Systemic rather than item-specific

The item-total statistics suggest that the reliability problem cannot be attributed to one or two isolated items. Instead, the scale appears to reflect multiple dimensions that were not strongly aligned into a single internal structure. This means the instrument may need refinement in future research, though the present study retains it for diagnostic and descriptive purposes.

Gender-wise Comparison

The study examined whether male and female students differed in their overall attitude toward physical activity. Gender was chosen for comparison because previous research and social theory suggest that attitudes toward exercise may differ across male and female participants. The comparison was conducted using an independent-samples t-test framework, with group statistics reported first.

Group Statistics by Gender

Gender	N	Mean	Standard Deviation	Std. Error Mean
Male	318	111.32	5.98	0.33
Female	282	111.59	5.96	0.36

The mean scores for males and females were nearly identical. Females scored only slightly higher than males, but the difference was minimal and not practically substantial from the descriptive evidence available. The standard deviations were also nearly equal, indicating similar dispersion in both groups.

Gender-wise Interpretation

Feature	Interpretation
Mean difference	Very small
Variability difference	Negligible
Sample balance	Supports fair comparison
Likely conclusion	No meaningful gender gap in attitude

Independent Samples Test According to Gender

INDEPENDENT SAMPLES TEST

Levene's Test for Equality of Variances		t-test for Equality of Means		
F 0.003	Sig. 0.958	t -0.542	df 598	Sig. (2-tailed) 0.588

The assumption of homogeneity of the variances should be tested before the interpretation of the t-test results. The Test of Equality of Variances by Levene is used to determine whether the variance in the two groups is significant. The Levene Test in this analysis had an F value of 0.003 and a significance value that was 0.958. The assumption of equal variances is met because the p-value is significantly larger than the conventional alpha value of 0.05. The result of this means that there is no statistically significant difference between the variability of the attitude scores that is observed between male and female students, which justify the application of the equal variances assumed t-test outcomes.

The t-test values indicate that the t value is -0.542 with 598 degrees of freedom and two-tailed value of 0.588. The null hypothesis is not rejected since p-value is greater than the significance level of

0.05. This means that the relationship between the attitude scores of male and female undergraduate students between means is not significant.

Stream-wise Independent Samples Test

INDEPENDENT SAMPLES TEST					
Levene's Test for Equality of Variances		t-test for Equality of Means			
F 0.071	Sig. 0.790	t 1.171	df 598	Sig. (2-tailed) 0.242	Mean Difference 0.57

The findings of the Levene Test ($F = 0.071$, $p = 0.790$) show that the assumption of the equal variance in Arts and Science groups was met. The null hypothesis of equal variances cannot be rejected because the significance value is larger than the traditional alpha value of 0.05. Consequently, the t-test outcomes with equal variances were taken to be suitable to interpret.

According to the t-test, the data does not give a statistically significant value at the 0.05 level: the difference between the attitude towards physical activity among Arts and Science students is not significant ($t = 1.171$, $p = 0.242$). This means that the chance of such a difference to occur due to random error is quite high and thus this difference cannot be considered to be meaningful statistically.

These results suggest that male and female undergraduate students shared almost the same attitude toward physical activity. The balanced sample strengthens this conclusion by reducing the risk of unequal-group distortion. Based on the reported descriptive pattern, the null hypothesis of no gender difference is not contradicted by the observed means.

DISCUSSION

The findings indicate that undergraduate students generally possess a positive orientation toward physical activity. This is consistent with the idea that students may recognize the health and lifestyle benefits of being physically active. The relatively high mean and narrow dispersion imply that this positive attitude is fairly widespread across the sample. Such a pattern is important because attitudes can influence intentions and eventual behavioral participation.

At the same time, the reliability analysis weakens confidence in the measurement structure of the scale. The negative Cronbach's alpha shows that the items did not coherently represent a single underlying attitude dimension. This means the positive descriptive trend should be interpreted as a general indicator rather than a highly precise psychometric measurement. The chapter is therefore methodologically transparent in presenting both the substantive strength and the measurement limitation.

The demographic balance of the sample improves the interpretability of the results. Since the respondents were nearly equally distributed by gender and stream, the findings are less likely to be driven by a single dominant subgroup. This enhances the study's internal validity and supports the usefulness of comparative analysis. The sample heterogeneity also gives a stronger basis for future subgroup studies.

Overall, the discussion shows that the study provides useful insight into the attitude profile of undergraduate students, while also revealing an important methodological caution related to scale reliability. The results support the view that students generally value physical activity, but they also show the need for stronger measurement and perhaps a more refined attitude instrument in future research. The chapter therefore not only interprets the findings, but also points toward practical and methodological implications for future studies and health promotion efforts.

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