



## Research Paper

# The Relationship Between Physical Activity, Life Satisfaction and Well-being of College-going Students: A Cross-sectional Study



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## ABSTRACT

**Background and Objectives:** Physical health is a state of lack of illness and disease. The psychological well-being of college-going students is closely related to physical activity and life satisfaction. It can lead to low life satisfaction, mental disorders, and overall low quality of life (QoL). The present study aims to evaluate the relationship between physical activity, life satisfaction, and mental well-being of students.

**Methods:** A cross-sectional study was conducted among college-going students to evaluate the relationship between physical activity, life satisfaction, and mental well-being of college students. Data were collected with online Google Forms, using the convenience sampling method to achieve the required sample size of 279 students. Follow-up data was entered into an Excel sheet and evaluated with SPSS software, version 20.

**Results:** After data collection using online Google Forms, data were evaluated using the SPSS software, and the results showed that physical activity is significantly correlated with mental well-being with a P of 0.004. Life satisfaction is correlated with physical activity according to a P of 0.038 and mental well-being is also correlated with life satisfaction with a P of 0.032.

**Conclusion:** The study concluded that physical activity, life satisfaction, and mental well-being in college-going students are significantly correlated with each other.

**Keywords:** Physical activity, Mental health, Well-being, Life satisfaction, Students



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↑ *What is “already known” in this topic:*

*According to literature young adults covers a major part of population and they are not much satisfied with their lifestyle, more confuse and prone for mental disturbance. Physical activity is one of the sources which helps to improve the mental well-being but its effect on life satisfaction and on young population was not well understood till now. Many studies are done which is showing that physical activity improves the mental health status but its effect on life satisfaction and on young college going students was not assessed till now in India. It was necessary to understand the relation and importance of all these components together and to find out the solution so present study was conducted.*

→ *What this article adds:*

*Present study is considering the young student population and trying to find out the effect of physical activity on life satisfaction and mental well-being on college going students. The study helps to understand that physical activity is very important to maintain the life satisfaction and well-being of students as the student population is very high in present time and are more prone to mental health problems. It is very important to understand the mental status of students. The study showed the importance of being physically active and its effect on the quality of life (QoL). Physical activity helps improve the satisfaction towards life and mental well-being. Students are not much physically active nowadays and are mentally disturbed. Therefore, necessary steps should be taken to encourage students to have physical activity to improve their life satisfaction.*

## Introduction

**P**hysical health is the most crucial component of human life [1]. The term “physical health” describes the status of the body as a whole, encompassing physical fitness, appetite, and the lack of disease or illness [1, 2]. The psychological well-being of children and adolescents is positively correlated with physical exercise, while sedentary time negatively corresponds with mood disorders, which affects the mental well-being of the individual [2].

According to [World Health Organization \(WHO\)](#), “mental health is a state of well-being in which an individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and can contribute to his or her community” [3]. A prospective study shows that prolonged psychological stress in college students leads to symptoms of insomnia [4] and decreases the stress tolerance level of students [5] and affects their physical and mental health [6-8].

A person’s subjective evaluation of their overall or particular areas of quality of life (QoL) is known as life satisfaction [9]. The basis for measuring life satisfaction is the comparison of people’s assessments of the degree of satisfaction they offer, the present situation, and the standards (that are not imposed from the outside) that

each person has set for himself. It reflects a conceptual assessment or judgment of the person’s own life and how well one feels about the quality of their existence [9, 10].

In specific age groups, feelings and emotions are essential for the affective component of life satisfaction. Students go through a range of emotions, including joy, melancholy, anxiety, and happiness [11]. A person’s whole happiness and sense of contentment are measured by life satisfaction, which considers both cognitive and affective elements [12].

College students’ resilience, self-efficacy, and life satisfaction are all positively impacted by physical activity [13]. Physical health enhanced bodily fitness, reduced chance of disease, and higher functional capacity. Numerous studies have demonstrated that regular physical activity positively affects emotions and life satisfaction in addition to its psychological benefits [11, 14]. Numerous studies concluded sedentary behavior among college students and the notable decline in physical activity (PA), results in a lower QoL, insomnia, and a lower level of life satisfaction. It is also linked to an increase in depression and other psychiatric disorders. College students’ overall life satisfaction is closely linked to mental Components risks, and their mental health has declined globally [11, 12, 15].

**Table 1.** Characteristics of participants

Components		No.	Mean±SD
Age (y)	18-30	279	20.03±2.073
Gender	Male	116	1.58±0.494
	Female	163	
Satisfaction with life scale	Extremely satisfied	161	2.83±1.265
	Satisfied	65	
	Neutral	13	
	Slightly dissatisfied	26	
	Dissatisfied	7	
	Extremely dissatisfied	7	
IPAQ-short form	Low-physical activity	134	1.60±0.637
	Moderate physical activity	122	
	High physical activity	23	
Warwick-Edinburgh mental well-being scale	Good well- being	270	1.03±0.177
	Bad well- being	9	

IPAQ: International physical activity questionnaire

According to evidence all the components are related but evaluation is not done till now so its showing the objective of study. After adjusting, necessary steps can be taken to improve students' physical and mental well-being.

## Materials and Methods

### Study design and sample size

The study was conducted after the approval of the Institutional Review Board Committee. Data were collected from the students of the university through the online [Google Form](#). The cross-sectional study was conducted to evaluate the relationship between physical activity, life satisfaction, and mental well-being of college students. The sample size was calculated with Epi Info software, version 7 with a power of 95.0%, 50 % of expected frequency, and a 5% confidence limit) and the total sample size was 278 on 1000 population. A non-probability, convenience sampling method was used to recruit the participants in the study.

### Selection criteria

The inclusion criteria included college-going students aged between 18-30 years. The exclusion criteria included students above 30 years of age who not regularly go to college.

### Data collection and analysis

Data were collected with the help of online [Google Form](#), using three questionnaires. To find out the physical activity level, the international physical activity questionnaire-short form (IPAQ-SF) was used, satisfaction with life scale was used to evaluate life satisfaction and Warwick-Edinburgh mental well-being scale (WEMWBS) was used to evaluate the well-being of participants. All questionnaires were self-administrative. A prior description was given to all the participants after circulating the [Google Form](#). All the voluntary students were part of the study. Prior written consent was taken from all the participants through the [Google Form](#) to participate in the study. After one week of circulating, the [Google Form](#) a follow-up reminder was given to all the participants to fill the form.

## Outcome measures

### IPAQ-SF

The development of an international measure for physical activity commenced in Geneva in 1998. IPAQ tool focused on finding out about the level of physical activity (vigorous, moderate, and normal) that participants have done in their last 7 days. It consists of a set of 7 questions that can provide data which in return may be used to collect data on health-related physical activity on a global scale.

### Satisfaction with life scale

Diener et al. developed a 5-item measure of life satisfaction, which was used in this study to assess participants' overall life satisfaction. Participants assessed their approval or disapproval with each assertion rated from 1 to 7, where 1 shows strongly disagree and 7 indicates strongly agree [11, 12].

### WEMWBS

WEMWBS was developed by researchers at the universities of Warwick and Edinburgh. It is a 14-item scale of mental well-being covering subjective well-being and psychological functioning. The scale is scored by summing responses to each item answered on a 1 to 5 Likert scale. The minimum scale score is 14 and the maximum is 70. Validation involved both student and population samples and focus groups [11].

### Statically analysis

Categorical variables were presented by frequency and percentages and continuous variables with mean and standard deviation. All data were first entered into an Excel sheet followed by the SPSS software, version 20. Data were analyzed for all the participants by converting all the responses into numerical values by assigning values in SPSS software, version 20. A normality test was performed to evaluate the data distribution and it was found that data was normally distributed.

**Table 2.** Correlation between variables

Components	Pearson Correlation Coefficient	P
WEMWBS with IPAQ -short form	0.78	0.004
IPAQ -short form with life satisfaction	0.59	0.038
WEMWBS with Satisfaction with life	0.68	0.032

## Results

No missing data were found in the study and 279 students participated in the study out of them, 116 were males and 163 were female with a mean value of  $1.58 \pm 0.494$ . The age of participants was between 18-30 years with the mean value of  $20.03 \pm 2.073$ . The life satisfaction level of participants was different, some participants were extremely satisfied (161) with their life and some were not satisfied with their lives (40). Out of 279 participants, 134 students were engaged in mild physical activity, 122 students were moderately active in physical activity and 23 students were engaged in high physical activity. A total of 270 students had good mental well-being and 9 students were not satisfied with their well-being as shown in Table 1.

### Correlation

A normality test was performed to evaluate the data distribution and it was found that data was normally distributed with a P of 0.000, therefore, Pearson's correlation test was used to evaluate the data. The results of this study showed that the mental well-being of students highly correlated with physical activity with a correlation coefficient value of 0.78 and with P of 0.004, showing a significant correlation between variables. Along with that satisfaction with life is moderately to highly correlated with physical activity and mental well-being of students with correlation coefficient values of 0.59 and 0.68 and with P of 0.038, and 0.032, which is less than 0.05 and shows a significant correlation between variables as shown in Table 2.

## Discussion

The present study was conducted to evaluate the relationship between physical activity, life satisfaction, and mental well-being of college-going students and it was found that all the components were significantly correlated with each other.

**Table 3.** Correlation between life satisfaction and physical activity

Life Satisfaction	Low Physical Activity	Moderate Physical Activity	High Physical Activity
Extremely satisfied	70	81	10
Slightly satisfied	37	18	10
Neutral	6	8	0
Slightly dissatisfied	13	10	3
Dissatisfied	6	1	0
Extremely dissatisfied	2	5	0

### Physical activity and life satisfaction

According to evidence, life satisfaction is closely related to the QoL and subjects who were engaged in physical activity were less prone to develop depression and anxiety. It was found the subjects who were more physically active were more satisfied with life and those who were less physically active were less satisfied with life [16, 17].

Physical activity helps to improve cardiovascular endurance, functional capacity, physical, and mental health, and self-efficacy of subjects moreover makes the subjects feel happy. College-going students who suffering from various kinds of academic as well as non-academic stress that have a significant effect on their life satisfaction as well as on their QoL can be associated with severe mental and physical disorders, such as depression, anxiety, sleep disturbance and suicidal tendencies. Physical activity helps to overcome all these conditions and helps to improve satisfaction with life [18, 19]. As the student's population cannot be satisfied with the life as they will be carrier-oriented and have academic pressure but according to evidence, more active people will be more satisfied with life [20]. The literature findings are similar to the present study, according to the present study findings, physically active students were more satisfied with life as the student population was not very active in physical activity, and physically inactive students were excluded from the study but most study participants were engaged in physically active and satisfied with the life as shown in Table 3.

**Table 4.** Correlation between physical activity and mental well-being

Mental Well-being	Low Physical Activity	Moderate Physical Activity	High Physical Activity
Good health	132	117	21
Poor health	2	5	2

### Physical activity and mental well-being

According to the present study's results, students who were engaged in physical activity were more mentally healthy. And the correlation between both the components was significant. According to evidence, regular physical activity reduces cortisol secretion and helps to reduce stress, and anxiety in individuals. Evidence suggested that physical activity provides better outcomes for mental disease and it is associated with various psychological effects, such as mood swings, QoL, depression, anxiety. It helps to improve mood, self-esteem and decrease stress tendencies. Regular exercise helps to get a better mind frame [19-21].

Physical exercise also helps to manage cravings for substances when other forms of therapy are not feasible or acceptable, for example, alcohol dependence syndrome. The physical activity shows beneficial effects on mental health, relieves stress, and provides an enjoyable replacement for such kinds of substances [22]. Sleep is a crucial part to regulate the mental well-being to individuals. Sleep deprivation has negative impacts on immune system function, mood, glucose metabolism, and cognitive ability. Twelve weeks of physical training is beneficial to improve sleep quality [22]. The present study's results are supported by evidence and it's proved that physical activity is beneficial to improve the mental well of subjects as shown in Table 4.

**Table 5.** Correlation between mental well-being and life satisfaction

Life Satisfaction	Good Well-being	Poor Well-being
Extremely satisfied	156	5
Slightly satisfied	62	3
Neutral	13	0
Slightly dissatisfied	26	0
Dissatisfied	7	0
Extremely dissatisfied	6	1

### Well-being with life satisfaction

According to the present study's results, mental well-being is closely related to life satisfaction of participants. According to evidence, mental health problems were associated with low life satisfaction of individuals. These findings were associated with major depression, anxiety disorder, suicidality, alcohol dependence, leading to low life satisfaction [23]. Two studies assessed the relationship between subjective mental health and life satisfaction. Both used a "not good days, mental health" question and the results show that mental health is associated with the life satisfaction of participants [24-26].

The results of the present study are associated with previously conducted studies but in present study, associated conditions or symptoms of participants were not assessed as shown in Table 5.

The study concluded that physical activity, life satisfaction, and mental well-being are associated with each other. There was a lack of evidence on the correlation of all three components on college students among the Indian population, therefore, the present study fills the research gap but the limitation of the study shows that no associated symptoms were identified in the present study and physically inactive students were excluded from the study.

### Conclusion

The study concludes that physical activity, life satisfaction, and mental well-being are significantly correlated with each other. Physical activity should be promoted among students; therefore, they can cope with stress and other psychological issues. Moreover, student counseling should be done; therefore, they will be able to improve their mental health and QoL.

### Limitations

In the present study, no associated symptoms were identified among participants, and along with that, physically inactive students were excluded from the study.

### Recommendations

Further studies can be conducted in different zones and countries to evaluate various participants. An intervention study can be conducted to check the effectiveness of physical activity on the mental, and life satisfaction on college-going students.

### Ethical Considerations

#### Compliance with ethical guidelines

The present study was approved by the Ethical Committee of NIMS University (Code: NIMS/PTOT/Feb/2024/52).

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#### Authors' contributions

Conceptualization: Dharmita Yogeshwar; Methodology: Ajeet Kumar Saharan and Janvhi Singh; Investigation and writing: Sheenam Popli and Saikiran G Mundinamani; Review and editing: All authors.

#### Conflict of interest

The authors declared no conflict of interest.

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