

Abstract

Background: Smoking is a major health-related behaviour that contributes to health disparities, with over a billion people worldwide using tobacco, often through smoking. Exposure to environmental tobacco smoke (ETS), including second-hand smoke, introduces harmful substances like irritants and carcinogens into the environment, especially in poorly ventilated spaces. Both active and passive smoking negatively affect cardiovascular health, as indicated by elevated heart rate (HR) and systolic blood pressure (SBP), which are key components of VO₂ max and markers of fitness. Smokers typically show reduced exercise capacity. This study examined how habitual smoking impacts cardiorespiratory responses during submaximal exercise. The 6-minute walk test was highlighted as a reliable and practical tool for assessing functional capacity.

Objectives: To investigate and compare the functional capacity of university students based on their smoking status, examining the relationship between active smoking, passive smoking exposure by Six-Minutes Walk Test among the college-aged population.

Material and method: A cross-sectional study was conducted with 60 participants aged 18–25, selected via convenience sampling based on specific inclusion and exclusion criteria. Participants included active smokers, passive smokers, and nonsmokers. The primary outcome measure was the 6-minute walk test (6MWT), assessing heart rate, oxygen saturation, systolic and diastolic blood pressure. Pre-test and post-test vitals were recorded using standard equipment. Data were analysed using a paired and unpaired t-test, with significance set at $p < 0.05$.

Result: The study involved 60 university students, including 20 active smokers and 40 passive smokers. Results showed that both groups were affected by smoking, but passive smokers had a higher heart rate after the 6-minute walk test. Active smokers showed increased systolic and diastolic blood pressure post-test. No significant difference in oxygen saturation levels was found between the two groups.

Conclusion: We conclude that the passive smokers possess a better functional capacity than the active Smokers, we also conclude that there is a significant difference with higher pre test and post test levels of Heart rate, Blood Pressure levels in the active Smokers.

Keywords: Active-smokers, Passive-smokers, Functional capacity, Six-minute Walk test

Table of Contents

SL. No	Content	Page No.
1.	Introduction	1-4
2.	Literature Review	5-9
3.	Aims And Objective	10-11
4.	Materials And Methods	12-15
5.	Result	16-23
6.	Discussion	24-26
7.	Conclusion	27-28
8.	Future Scope	29-30
9.	References	31-34
10.	Annexure	35-39