

# Correlation Between Smartphone Addiction and Physical Activity Among College Students Across Ahmedabad City

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## ABSTRACT

**INTRODUCTION:** Smartphone has become an important device in current day living. It affects our physical activity levels. Excessive usage of smartphone may give impact on day-to-day physical activity. The more time spent on using the smartphones the least time for doing any kind of physical activity. In current time young adults spent their most of the time in using phone which decreases their physical activities.

**AIM:** The current study is aimed to evaluate correlation between smartphone addiction and physical activity among college students across Ahmedabad city.

**METHOD:** An observational study was conducted on college students across Ahmedabad city. International Physical Activity Questionnaire (IPAQ) and Smartphone Addiction Scale – Short Version (SAS-SV) was filled by 106 individuals studying in college and submitted through google form. ethical clearance has been taken.

**RESULT:** Data was analysed using SPSS software version 29. The normality of data was checked by the Kolmogorov-Smirnov test and Data was not normally distributed, spearman's correlation test was applied to find out the correlation between smartphone addition and physical activity. A strong significant negative correlation found between smart phone addiction and physical activity. ( $r=-0.805$ )

**CONCLUSION:** The present study showed that physical activity was significantly lower among smartphone addicts and therefore found a relationship between smartphone addiction and physical activity among students. A person who spends more time on the phone spends less time for physical activity.

**Keywords:** College students, physical activity level, IPAQ, smartphone addiction, smartphone addiction scale – short version.

## INTRODUCTION

The smartphone has taken on significant importance in modern life. Smartphones differ from traditional phones in that they have advanced functions such as internet access, social networking, games, and many more, in addition to voice calling. [1] A mobile phone addiction rate of 23.3% among children and young people worldwide is also adverse. [2] The term "physical activity" refers to any skeletal

muscle-driven movement that involves the use of energy. [3] Researchers and practitioners have long been interested in the advantages of physical activity. Numerous studies have shown that exercise not only lowers the risk of cancer, diabetes, hypertension, cardiovascular, and cerebrovascular illnesses, but also other mental and behavioral issues. [4]

By decreasing the amount of time spent engaging in physical activity like walking, smart phone addiction among university students may have a negative impact on physical health.<sup>[5]</sup> The suggested ways to encourage physical exercise in higher education institutions may be hindered by college students' excessive smart phone use.<sup>[6]</sup> Because such passive behavior has a low energy expenditure, it is linked to a number of health issues, such as obesity or metabolic syndrome.<sup>[7]</sup> Despite the fact that using Internet-based applications is a main feature of smartphones, many people take them around with them at all times due to their portability and ability to install programmers' that are specific to their needs and lifestyles.<sup>[8]</sup> This decrease in physical activity should be considered because exercise has a number of positive effects on both physical and mental health, as well as a lower risk of morbidity and all-cause death.<sup>[9]</sup> Despite the obvious advantages of smartphone use, empirical evidence indicates that people may become addicted to or inappropriately dependent on them, which could have a negative impact on their health. Every technological advancement has both advantages and disadvantages, as demonstrated.<sup>[10]</sup>

According to academics, a person who has a strong desire to utilize the applications on their mobile phones, such as making phone calls, texting, watching online movies, and updating their status online, is said to be a mobile addict.<sup>[11]</sup> High frequency smartphone users can discourage exercise and encourage sedentary activities like watching television and using computers, which lowers cardiorespiratory fitness.<sup>[12]</sup> There are some studies to evaluate the impacts of the internet and cell phones abuse on different aspects of life and social interactions among different age groups and genders yet there is not a study to examine the relationship and the impact of smart phone addiction and the level of physical activity among the young adults. Hence, we decided to assess the impact of this common

addiction on physical activity in this group of people across Ahmedabad city

## **MATERIALS & METHODS**

In Ahmedabad, Gujarat, a cross-sectional observational study was undertaken among college students. The study recruited those who were willing to participate and between the ages of 18 and 25 who used their phone more than 4 hours each day. All students who were using less time and engaging in frequent, strenuous physical activity or frequenting the gym were removed. A self-administered survey with a total of 106 participants was distributed via WhatsApp as a Google Forms link. All the students were explained about the study and consent was taken for those who were asked to fill the Questionnaire for smartphone addiction and physical activity, which was a valid and responsive instrument that can serve as a diagnostic tool to determine the smartphone addiction and physical activity level. The International Physical Activity Questionnaire (IPAQ) for physical activity and Smartphone Addiction Scale – Short Version (SAS-SV) for smartphone addiction.

Smartphone addiction scale short version (SAS-SV) consists of 10 items that measure various aspects of smartphone addiction. The scale covers both behavioral and psychological components associated with smartphone addiction. The SAS-SV items scored on a likert-type scale, usually ranging from 1 to 6 with higher scores indicating a higher level of smartphone addiction. The scale helps to identify individuals who may be at risk of experiencing negative consequences due to excessive smartphone use. The SAS-SV had good reliability with Cronbach' alpha of 0.836.<sup>[13]</sup>

The International Physical Activity Questionnaire is a seven-item self-report tool that evaluates physical activity across four different domains during the past seven days. International physical activity questionnaire has a intra-class reliability of 0.80<sup>[9]</sup>. The frequency and duration of

vigorous activity, moderate activity, and walking are assessed. Participants also report the quantity of time they spend sitting during the course of a week, but this information is not analyzed as part of physical exercise. By combining the stated frequency and length of each type of activity, the amount of time spent each week on strolling, moderate exercise, and intense activity is calculated. By adding the three categories of above-mentioned tasks, the total amount of physical exercise per week is determined.

## RESULT

Data was analyzed using SPSS software version 29. The normality of the data was assessed using the Kolmogorov-Smirnov test. Since the data was found to be not

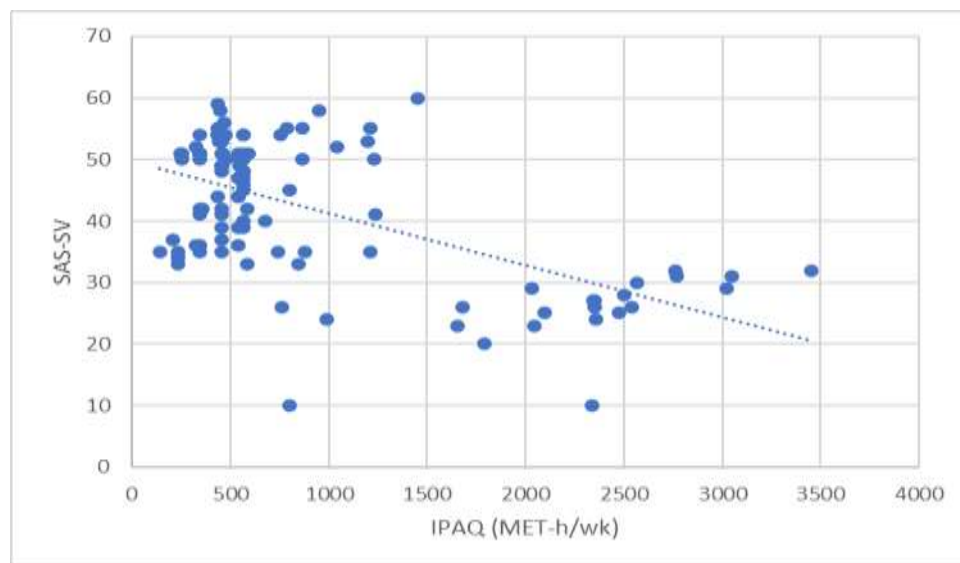
normally distributed, it is appropriate to use non-parametric tests.

To determine the correlation between smartphone addiction and physical activity levels, Spearman's correlation test was applied. A strong significant negative correlation found between smart phone addiction and physical activity. (r value = -0.805, p value =0.001) The chosen significance level for the study was set at  $p < 0.05$ . This indicates that a correlation coefficient with a p-value below 0.05 would be considered statistically significant.

## Nonparametric Correlations:

Spearman's correlation	MEAN±SD	r- value	p-value
Smartphone addiction	41.99±1.096	1.000	0.001
Physical activity	912.14±76.54	-0.805	0.001

Table I: - Mean and r value of correlation between Smartphone addiction with physical activity



Graph 1: - Correlation of Smartphone addiction with physical activity

## DISCUSSION

The present study's findings indicate that significant negative relationship found between smartphone addiction and physical activity levels among students. study showed that physical activity was significantly lower among smartphone addicts and. The findings of this study can have significant implications for public health interventions and educational programs aimed at promoting healthier smartphone habits and increasing physical activity levels among young adults in India.

Davey S et al conducted a study in 2014 reported that Increase in the use of smartphones in societies, has raised concern about social and psychological effects of excessive use of smartphone's especially among Indian adolescents. Smartphone's have made mobile connectivity so accessible that today's Indian generations are abusing their Smartphone.<sup>[14]</sup>

In another study by Kheradmand A et al they conducted the prevalence of Internet addiction in Iran, where the overall prevalence of Internet addiction in Iran was

20%. The Internet addiction examined between the age 15-18 years old the rate was 12%, and age group between 18-23 years old with the rate was 40% and in the age group of 15-23 years was 35%.<sup>[15]</sup>

The Physical level activity was considerably low in the addicted people to internet and also smart phones study assessment was done by fayazbakhsh et al and they found also the half of the participants had a bad lifestyle and 70% of the people confessed that internet cause a prominent decrease in physical activity.<sup>[16]</sup>

A study conducted by Kim J et al a cross-analysis assess that moderate physical activity, vigorous physical activity, strength exercise, and regular physical activity all significantly differ according to the risk of smartphone addiction. Moreover, the risk of smartphone addiction increased by 1.429 times in the potential risk group and 1.478 times in the high-risk group based on adolescents who performed moderate PA for more than 5 days a week.<sup>[17]</sup>

## CONCLUSION

The present study showed that physical activity was significantly lower among smartphone addicts and therefore found a relationship between smartphone addiction and physical activity among students. Study has found a strong negative relationship between smartphone addiction and physical activity. It is widely recognized that excessive smartphone use can lead to sedentary behavior and reduced engagement in physical activities. Spending more time on smartphones can limit the time available for exercise or other forms of physical activity, leading to a more sedentary lifestyle. This study has some limitations that the research is done across Ahmedabad city Further study can be done in larger area can be taken, Gender wise prevalence can be taken. Future research could explore the underlying factors that contribute to smartphone addiction among college students.

## Declaration by Authors

**Ethical Approval:** Approved

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**Conflict of Interest:** The authors declare no conflict of interest.

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