IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 8, April 2026
Impact Factor: 8.2

A Study of Phantom Vibration Syndrome (PVS) among Students of Rajarshi Chhatrapati Shahu College, Kolhapur

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Abstract: *Smartphones are a part of our lives now especially for students.. Using smartphones too much can cause some psychological problems, like Phantom Vibration Syndrome. This is when you think your phone is vibrating or ringing. It is not. We wanted to see how common Phantom Vibration Syndrome is among students and how it is related to how they use their smartphones how stressed they are and some basic information about them. We collected data from 300 students at Rajarshi Chhatrapati Shahu College, Kolhapur. We used a questionnaire. Google Forms to get the data. We picked the students randomly. We used R software to analyze the data and made bar diagrams and pie charts to visualize it. Since the data was not normal we used some tests like Fishers Exact Test, Kruskal-Wallis Test and Mann-Whitney U Test. Our results show that Phantom Vibration Syndrome is very common among students. We found out that how old you are does not really affect how you use your smartphone.. We did find out that stress levels because of Phantom Vibration Syndrome are different for different age groups. We also found out that there is no difference in stress levels between male and female students. Most students spend 2 to 4 hours a day on their smartphones, which's a lot.Our study shows that being too dependent on smartphones can have a psychological impact on students. Even though Phantom Vibration Syndrome is not a disorder it can cause stress, distraction and make it hard to concentrate. We think it is very important to teach students how to use their smartphones in a way and be aware of the risks of digital technology. Phantom Vibration Syndrome is a problem that we need to pay attention to. We need to promote smartphone usage habits and digital awareness among students to reduce the occurrence of Phantom Vibration Syndrome.*

Keywords: Phantom Vibration Syndrome, Smartphone Usage, Students, Stress, Non-parametric Tests, Mann-Whitney U Test, Kruskal-Wallis Test.

I. INTRODUCTION

In today's digital age, smartphones have become integral to our daily lives influencing communication, education, entertainment, and social interaction. The rapid progress in technology and the widespread accessibility of smartphones have led to a surge in their usage, particularly among young adults and college students. While smartphones provide numerous advantages, their excessive and constant use has raised several psychological and behavioural challenges, one of which is Phantom Vibration Syndrome (PVS). Phantom Vibration Syndrome is the mistaken belief that one's phone is vibrating when it is not. People affected by this syndrome often sense imaginary vibrations in their pockets, bags, or hands, prompting them to check their phones only to find no incoming calls or notifications.

The idea of Phantom Vibration Syndrome emerged with the widespread adoption of pagers and became more common with the advent of smartphones. When individuals keep their phones in close proximity for extended periods, their brains

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become conditioned to anticipate alerts and notifications. Consequently, PVS can be viewed as a sensory misperception stemming from habitual phone use. College students are especially susceptible to Phantom Vibration Syndrome due to their heavy smartphone dependence for academic tasks, social engagement, online learning, and recreational activities. The habit of frequently checking messages, social media updates, and calls fosters a constant state of alertness, which may elevate stress levels, increasing the likelihood of experiencing phantom vibrations. Additionally, academic pressures, tests, and societal expectations contribute to psychological stress.

Although Phantom Vibration Syndrome is not classified as a mental disorder, it serves as an indicator of excessive smartphone usage and possible behavioural addiction. Research indicates that those who keep their phones on silent or vibration mode, or carry them close to the body, are more likely to experience phantom vibrations. While the syndrome itself is not physically harmful, it can impact concentration, productivity, and overall mental health. Frequent false alerts may lead to distractions, decreased attention spans. From a psychological standpoint, Phantom Vibration Syndrome (PVS) highlights the interaction between technology and human cognition. The brain adapts rapidly to repeated stimuli, eventually anticipating signals even when they are absent. This phenomenon illustrates how modern technology can subtly shape perception and behaviour. Understanding Phantom Vibration Syndrome is vital not just for health reasons, but also for offering insights into human-technology interactions in the digital era. This study emphasizes exploring Phantom Vibration Syndrome among college students, a demographic that represents one of the highest smartphone user group. The research aims to assess the prevalence of the syndrome, explore related factors like phone usage patterns and stress levels, and gauge its effects on daily life. By employing suitable statistical tools and data collection technique, the study seeks to provide a comprehensive analysis of Phantom Vibration Syndrome.

II.OBJECTIVES

- To study the prevalence of **Phantom Vibration Syndrome (PVS)** among students.
- To determine how often students experience **phantom vibrations or phantom ringing**.
- To study the relationship between **smartphone usage and PVS symptoms**.
- To analyze the **effect of daily smartphone usage duration on PVS occurrence**.
- To study the **independence between age and smartphone usage.**
- To study the **relationship between age group and stress due to PVS**.
- To study the **difference in stress level due to PVS between male and female students.**

III. METHODOLOGY

For this project primary data was collected with the help of survey technique through questionnaire. Data is collected from students of Rajarshi Chhatrapati Shahu College, Kolhapur and sampling method used here is SRSWOR. The questionnaire were from 300 student of different age groups from Rajarshi Chhatrapati Shahu College, Kolhapur.

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IV. STATISTICAL ANALYSIS

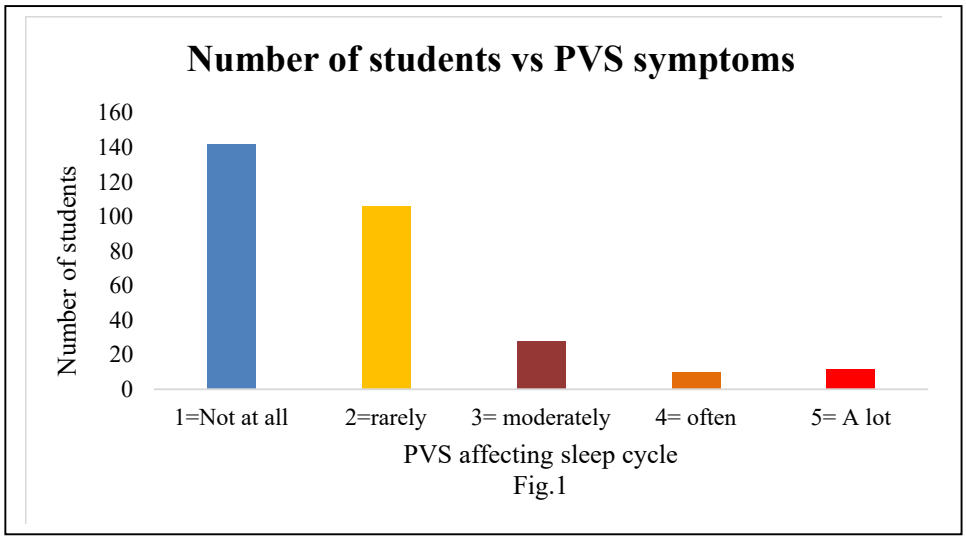

Fig.1: In this bar diagram, it shows that more than 100 peoples sleep cycle does not get affected but about 20 students sleep cycle gets affected due to PVS.

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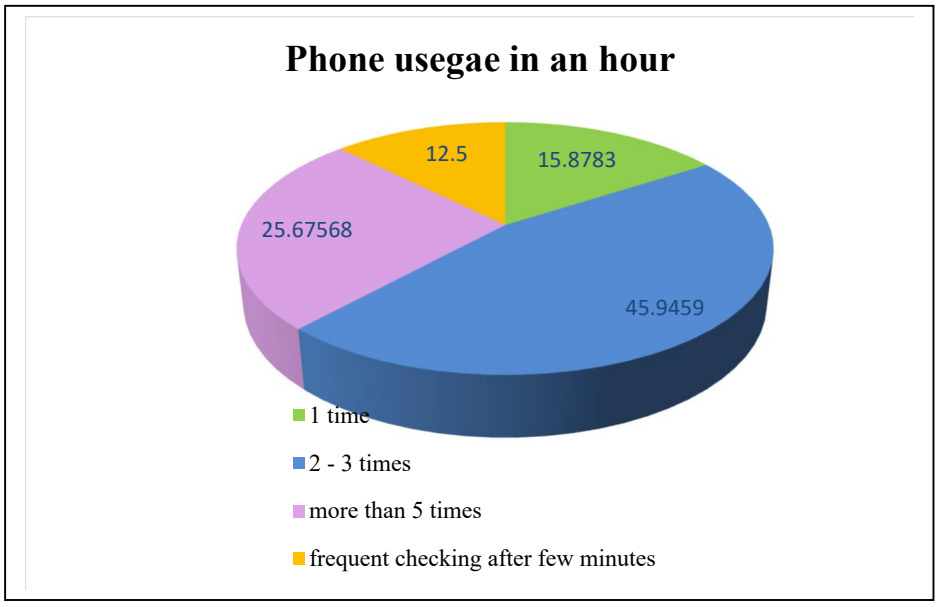

Fig.2: In this pie chart, it shows that 12.5% students frequently check their phone in an hour and only 15.87% students people their phone once in an hour.

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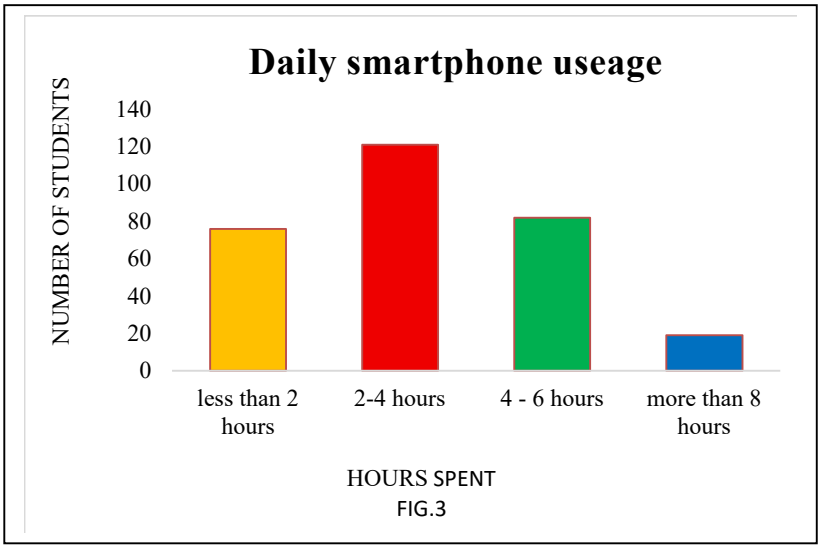

Fig.3:In this diagram it shows that more than 100 students spend 2-4 hours on phone in a day and more than 20 students spend more than 8 hours on phone in a day.

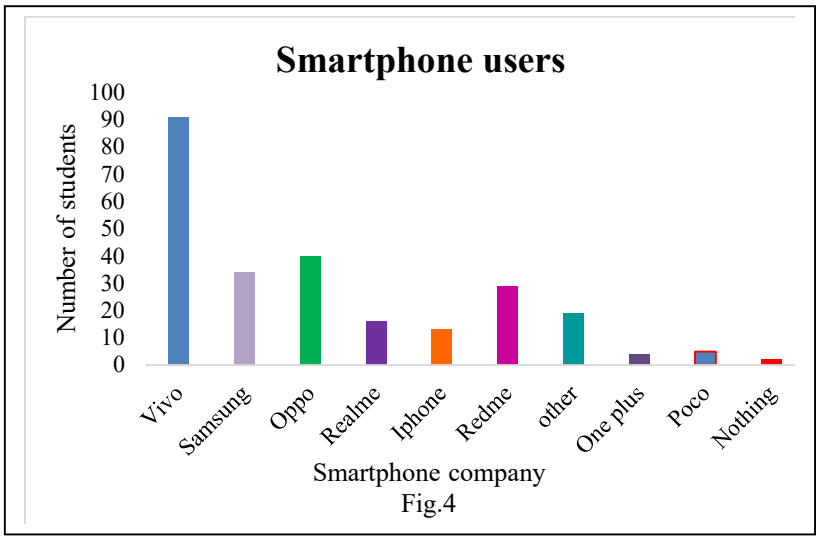

Fig 4:In above bar diagram, it shows that most students are vivo phone users and less students are nothing phone users.

Testing of Hypothesis:
Fisher's Exact Test:
Hypothesis:
H_0: Age does not affect smartphone usage.
H_1: Age affect smartphone usage.
Conclusion:
p value=0.6673, α=0.05
Here p value > 0.05, therefore we accept H_0
Therefore age does not affect smartphone usage.

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Kruskal Wallis Rank Sum Test:

Kruskal-Wallis H Test, a non-parametric statistical method used to determine if there are statistically significant differences between three or more independent groups.

Hypothesis:

H_0: There is no significant difference in stress due to PVS among age groups.

H_1: There is difference in stress due to PVS among age groups.

Result:

Kruskal -wallis $\chi^2 = 18.084$, p value = 0.0004 ,Degree of freedom = 3

Here $p > 0.05$, we reject H_0.Therefore, there is difference in stress due to PVS among age groups.

Mann Whitney U Test :

The Mann-Whitney U test is a non-parametric statistical test. It compares two independent groups to determine significant differences in their distributions.

Hypothesis:

H_0: There is no significant difference in stress level due to PVS between male and female students.

H_1: There is significant difference in stress level due to PVS between male and female students.

Result

p value = 0.6788

Here, p value > 0.05, we accept H_0.

Therefore, there is no significant difference in stress level due to PVS between male and female students.

Chi Square Test:

To determine if there is a significant relationship between two categorical variables.

Hypothesis:

H_0: There is no relation between age and receiving false notification.

H_1: There is relation between age and receiving false notification.

Test Statistic:

Age	**Yes**	**No**	**Maybe**	**Total**
16-20	79	57	73	209
21-25	43	23	25	91
Total	122	80	98	300

$$\chi^2 = \sum_{i=1}^{n} \frac{(Oi-Ei)^2}{Ei}$$

Result:

$\chi^2_{cal} = 2.5669$,$\chi^2_{(0.05,2)} = 0.9753$

$\chi^2_{cal} > \chi^2_{(0.05,2)}$, we reject H_0.

Therefore, there is relation between age and receiving false notification.

V. CONCLUSION

The study on Phantom Vibration Syndrome (PVS) shows that many students experience PVS. The results indicate that age does not significantly affect smartphone usage, and PVS is observed among students of all age groups. However, the stress caused by PVS varies across different age groups. The study also shows that male and female students experience similar levels of stress due to PVS. In addition, most students reported spending 2–4 hours per day on their smartphones. These findings suggest that PVS is common among students and is associated with regular smartphone use.

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