

ORIGINAL ARTICLE

## Impact of Mobile Phone Addiction and Academic Procrastination on Academic Achievement among Students of Health Sciences in a selected University

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### ABSTRACT

*In today's global scenario, there is an increasing usage of mobile phone among medical students which causes academic procrastination and ultimately leading to poor academic performance. To explore the influence of demographic factors on mobile phone addiction, academic procrastination, and academic achievement among health science students in a selected university. A descriptive cross sectional research design was adopted among 275 undergraduate health science students using stratified random sampling technique. Standardized questionnaires were used to assess the level of Mobile Phone Addiction, Academic Procrastination and Academic Achievement. Descriptive (mean, standard deviation) statistics and Inferential statistics (Karl Pearson correlation and chi-square test) were used. The results reveals 55.11 % students had high level of mobile phone addiction, 90.15% shows moderate level of academic procrastination 81.75% shows moderate level of academic achievement. The study also proves that there is a significant positive correlation between Mobile Phone Addiction and Academic Procrastination ( $r= 0.30, P=0.001$ ) and negative correlation found between Mobile Phone Addiction and Academic achievement ( $r=-0.27, P=0.001$ ) also between Academic Procrastination and achievement score ( $r= - 0.34 P=0.001$ ). The study concludes that the problems of mobile phone addiction and academic procrastination are prevalent among health sciences students, and these negatively influence their academic achievement.*

**Key Words:** Health science students, Mobile phone addiction, academic procrastination, academic achievement.

Received 19.02.2023

Revised 16.03.2023

Accepted 18.05.2023

### How to cite this article:

Helen Shaji JC, Sujatha T, Ganga P, Kalyani A, Kaviya P, Kiran B V. Impact of Mobile Phone Addiction and Academic Procrastination on Academic Achievement among Students of Health Sciences in a selected University. Adv. Biores. Vol 14 [3] May 2023. 257-265

### INTRODUCTION

Mobile phone usage among medical students becomes a popular medium of communication that has found enthusiastic and nearly universal adoption globally in both developed and developing nations. India is the second highest mobile connections in the world after China, with more than 90 connections per 100 people [1]. The problem of mobile phone addiction and academic procrastination among medical students has been widely acknowledged. In today's global scenario, there is an increasing usage of mobile phone among medical students which affects the academic performance and leading to academic procrastination and develop behaviors that impair students learning habits [2].

Mobile phones have proven useful for medical students as practical learning tools that enable them to "learn anywhere [3]. Moreover, mobile phones have a wide range of functionality in elevating the accessibility of learning and realizing equal opportunities for education. However, excessive and problematic use has caused adverse effects on the learning behavior of Health science students<sup>4</sup>. Mobile phone addiction is defined as the uncontrolled use of mobile phones in inappropriate or harmful situations [5] and is common among contemporary college students [6].

Studies suggest that academic achievement is associated with learning strategies, outcome expectations, thinking skills, learning styles, lifestyle self-esteem [7], family support [8] and social and psychological factors [9]. Conversely, academic procrastination is a psychological factor, which is negatively correlated

with academic achievement among college students as reported by a study done on Turkish medical students. Moreover, with the rapid development of the Internet, mobile phone addiction has emerged as an important factor affecting students' academic achievement. Considering cross-cultural differences, continuous attention should be given to academic achievement and its influencing factors among medical students in various countries.

Procrastination is a common phenomenon, often occurring in a pragmatic and technologically advanced society [10], causing poor mental health, diminished success, increased stress, and reduced well-being [11, 12]. Academic procrastination is a type of situational procrastination [13], and is defined as an initiative delay in the learning process and intended course. Although many studies have explored academic procrastination in different educational settings, the university context has been the most common. For example, the prevalence of academic procrastination was 68% among college students in Iran [14] and between 70 and 80% in Sweden [15]. Recent research has focused on academic procrastination and academic achievement among college students, finding a negative correlation between them [16]. Moreover, Health science students are more prone to academic procrastination than college students [17]. Medical students must manage course schedules, teaching content, and academic tasks; thus, they are subjected to longer schooling, containing multiple courses and academic tasks. They therefore experience heavy academic burdens, and high pressure [18], resulting in negative emotions and academic procrastination [19]. In China, academic procrastination occurs more among medical than non-medical college students, and academic procrastination is further influenced by gender, life satisfaction, and anxiety among this population [20].

Medical students must manage course schedules, teaching content, and academic tasks; thus, they are subjected to longer schooling, containing multiple courses and academic tasks. They therefore experience heavy academic burdens, and high pressure [21, 22], resulting in negative emotions and academic procrastination [23].

A Study on Relationship between Procrastination and Academic Performance Among a Group of Undergraduate Dental Students in India [24] assessed the relationship between procrastination and academic performance. It showed a negative correlation of -0.63 with a significance level of  $p < 0.01$  (two-tailed test). It was found that in India, there is very less studies related to this. Therefore, this study aimed to explore the influence of demographic factors on mobile phone addiction, academic procrastination, and academic achievement among medical students. We further like to explore the association between mobile phone addiction, academic procrastination, and academic achievement.

Therefore, this study aimed to explore the influence of demographic factors on mobile phone addiction, academic procrastination, and academic achievement among Students of health sciences in a selected University.

## **MATERIAL AND METHODS**

A cross-sectional study was conducted among undergraduate Health science (MBBS, Allied health science, BSc Nursing students at a prominent medical college of Chennai, India. Students aged  $\geq 17$  years were included. Based on a previous study, the burden of mobile phone addiction was expected to be 50% [24]. The sample size at 95% confidence levels and 5% margin of error was calculated to be 250. The final sample size is estimated to be 275 after considering an anticipated 15% no response and rounding off.

Stratified Random Sampling technique was used to draw the samples from each strata randomly from different disciplines by using proportional allocation method. Students who are in the 2<sup>nd</sup>, 3<sup>rd</sup> & 4<sup>th</sup> year of study and those above 17 years were participated in the study.

A pretested self-administered questionnaire was used to inquire regarding academic achievement which consists of learning performance (6 items), relationship facilitation (7 items), and learning dedication (6 items), totalling to 19 items. The pretesting was conducted in 25 students who were not a part of the final study. Content validity was assessed by a group of professionals, and modifications were made to the questionnaire.

Mobile phone addiction was measured by using the standardized short scale of Mobile Phone Problem Use (MPPUS-10) [25]. The MPPUS-10 is a 10-item scale consisting of five dimensions: craving (1 item), negative life consequences (2 items), peer acceptance (1 item), withdrawal (3 items), and loss of control (3 items). The response to each of the MPPUS items were recorded as per a 5-point Likert scale with options being 1 (strongly disagree), 2 (disagree), 3 (Neither agree Nor disagree), 4 (agree), and 5 (strongly agree) with higher scores indicating higher mobile phone addiction.

The Academic Procrastination Scale-Short (APS-S) was used to measure the severity of the effect of procrastination on students' academic tasks [26]. It has a total of 25 items, with each item examining the

respondent's learning experience. Responses were rated on a 5-point Likert scale (1 = *totally agree* and 5 = *totally*). Higher scores indicated a greater tendency to procrastinate on academic tasks.  $R = 0.94$

Ethical approval for conducting the study was granted by the Institutional Ethics Committee of the medical college. Permission was obtained from the respective Principal/Dean of Medical, Allied health and Nursing college. Students were explained the reasons for conducting the study, written informed consent was taken from them, and no personally identifiable information was collected during the study. On selection of the subject, a self-introduction was given. Survey questionnaire was posted in online platform accessible through any device with internet connection. Using the Institutional mailing list, questionnaire was posted using Email id and what's App network. On average it takes 15 minutes for an individual to complete the online tool.

**Statistical Analysis:** Data were analyzed using SPSS Version 22. Categorical data were reported in frequency and proportions and quantitative data as mean and standard deviation. Karl Pearson Correlation was used to assess the relation between the level of Mobile Phone Addiction and Academic Procrastination on Academic Achievement among Students of Health Sciences. Chi-square test was used to find associations between categorical variables.  $P < 0.05$  was considered as statistically significant. Cronbach's alpha and the Spearman-Brown split-half reliability coefficient was calculated to assess the reliability of Academic achievement scale.

## RESULTS

A total of 275 students participated in the study. The study sample comprised of 50(18.25%) belong to Allied Health Sciences, 38(13.50%) belong to BSc Nursing and 187(68.25%) belong to MBBS, 155(56.20%) of the students belong to age group of 19-20 years, 37(49.64%) is belong to Male students and 138(50.36%) belong to female students,

238(86.50%) having one mobile and 37(13.50%) of students having two mobiles, 190(69.34%) of students having Android mobile, 155(56.20%) having one sim card, 155(41.97%) of students having two sim card, and 5(1.83%) having more than two sim cards. 7(9.85%) of students use the mobile less than 3 hours daily, 76(27.74%) of students use 8-9 hours daily, 85(35.04%) of students use 6-7 hours daily, 56(20.44%) of students 4-5 hours daily and 19(6.93%) of students use 10 hours or more., Among them, Majority of 127(45.99%) of students use mobile for education purpose at least for 1-2 hours and 84(30.66%) for Social medias for 3-4 hours., 127(45.99%) use for 1-2 hours for watching films or games.

### Level of Mobile Phone Addiction

The fig.1. reveals that among 275 samples, 4.01% of them are having low level of mobile addiction, 40.88% of them are having moderate level of addiction and majority 55.11% of them having high level of addiction.

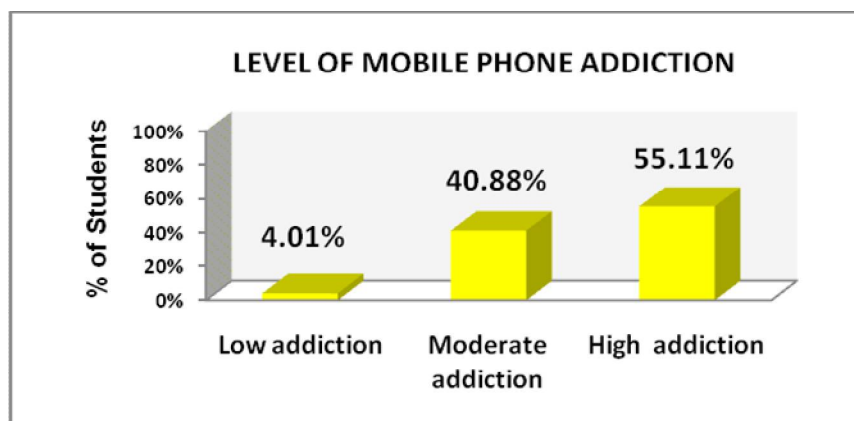


Fig.1 Level of Mobile Phone addiction

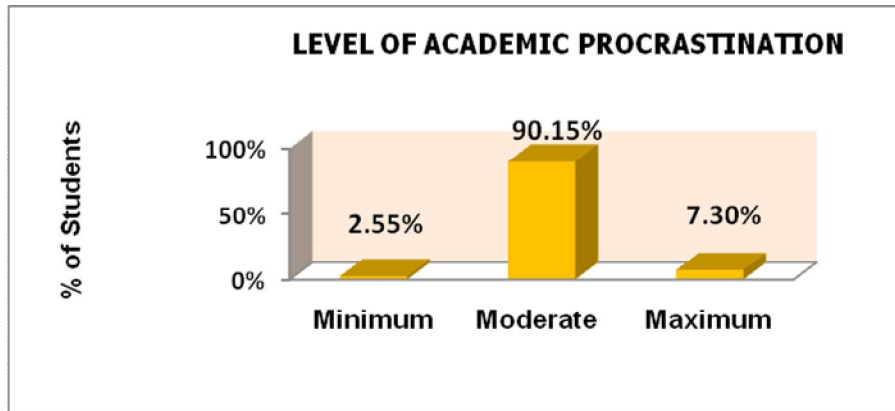


Fig.2 Level of Academic Procrastination

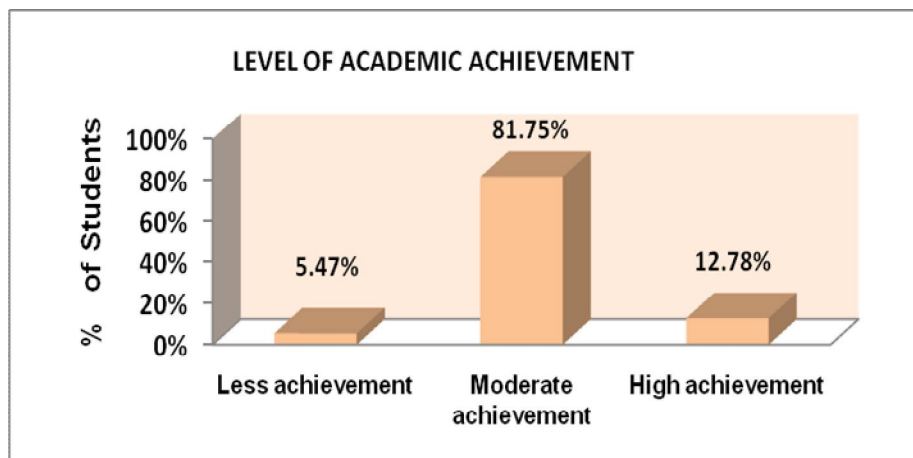


Fig.3 Level of Academic Achievement

**Level of Academic Procrastination**

The fig.2. shows the level of Academic Procrastination score among students. In general, 2.55% of them are having less level of Procrastination, majority 90.15% of them are having moderate level of academic Procrastination and 7.30% of them having high level of Procrastination.

**Level of Academic Achievement**

Majority of the students (81.75%) depicts moderate level of achievement score, whereas 5.47% of them have low level of academic achievement and 12.78% of them having high level of achievement score(fig.3).

**Correlation between the level of Mobile Phone Addiction, Academic Procrastination and Academic Achievement among Students of Health Sciences**

**Table.1 Karl Pearson Correlation between Mobile Phone Addiction, Academic achievement and Academic Procrastination among Students of Health Sciences**

N=275

Correlation between	Mean gain score Mean±SD	Karl pearson Correlation Coefficients
Mobile Phone Addiction Vs Academic Procrastination	34.06±7.36 62.85±8.37	r= 0.30 P=0.001*** <b>Positive correlation</b>
Mobile Phone Addiction Vs Academic achievement	34.06±7.36 65.19±8.82	r= - 0.34 P=0.001*** <b>Negative correlation</b>
Academic Procrastination's Academic achievement	62.85±8.37 65.19±8.82	r= -0.27 P=0.001*** <b>Negative correlation</b>

**Mobile Phone Addiction Vs Academic Procrastination**

The study results (Tab.1) shows that there is a significant positive correlation between Mobile Phone Addiction and Academic Procrastination ( $r= 0.30$   $P=0.001$ ). Hence it proves that high Mobile Phone addiction increases the Academic Procrastination among students.

#### Mobile Phone Addiction Vs Academic Achievement

From Tab 1. It is evident that there is a negative correlation found between Mobile Phone Addiction and Academic achievement ( $r=-0.34$   $P=0.001$ ). It indicates that Mobile Phone addiction decreases the Academic achievement of the students.

#### Academic Procrastination Vs Academic achievement

There is a significant negative correlation ( $r= -0.27,P=0.001$ ) (Tab.1) between academic Procrastination and achievement score. It proves that Academic Procrastination decreases their Academic achievement.

**Association between the level of mobile phone addiction, academic procrastination and academic achievement among students of health sciences with their selected demographic variables.**

**Table 2 Association between the level of Mobile Phone Addiction and demographic variables**

Demographic variables		Level of Addiction				n	Chi square test
		Low/Moderate		High addiction			
		n	%	n	%		
Course	AHS	26	52.00%	24	48.00%	50	$\chi^2=7.62$ $p=0.02$
	BSc Nursing	24	62.16%	14	37.84%	38	
	<b>MBBS</b>	<b>74</b>	<b>39.57%</b>	<b>113</b>	<b>60.43%</b>	<b>187</b>	
Number of hours mobile usage per day	Less than 3 hours	24	88.89%	3	11.11%	27	$\chi^2=33.27$ $p=0.001$
	3 - 5 hours	32	57.14%	24	42.86%	76	
	6 - 7 hours	36	37.50%	60	62.50%	96	
	<b>8 - 9 hours</b>	<b>24</b>	<b>30.26%</b>	<b>53</b>	<b>69.74%</b>	<b>77</b>	
	10 hours or more	8	42.11%	11	57.89%	19	
Money spent for monthly data pack	Less than Rs.299	49	82.76%	10	17.24%	59	$\chi^2=62.83$ $p=0.001$
	Rs.300 - Rs.499	8	61.54%	5	38.46%	13	
	Rs.500 – Rs.699	33	53.23%	29	46.77%	62	
	Rs.700 – Rs.999	23	28.40%	58	71.60%	81	
	<b>Rs.1000 and above</b>	<b>11</b>	<b>18.33%</b>	<b>49</b>	<b>81.67%</b>	<b>60</b>	
Family monthly income	Less than Rs.10,000	27	65.85%	14	34.15%	41	$\chi^2=15.65$ $p=0.001$
	Rs.10,000 - Rs.50,000	43	53.09%	38	46.91%	81	
	<b>Above Rs.50,000</b>	<b>54</b>	<b>34.87%</b>	<b>99</b>	<b>65.13%</b>	<b>153</b>	

Significant association was found among MBBS students ( $\chi^2=7.62$   $p=0.02$ ), (Tab.2) using mobile 8-9 hours per day ( $\chi^2=33.27$   $p=0.001$ ), Rs.1000 and above money spent for monthly data pack ( $\chi^2=62.83$   $p=0.001$ ) and students with family monthly income above Rs.50,000 ( $\chi^2=15.65$   $p=0.001$ ) are having more mobile addiction than others whereas other variables were not found significant association. Statistical significance was calculated using chi square test.

**Table 3 Association between the level of Academic Procrastination and demographic variables**

Demographic variables		Level of Procrastination				n	Chi square test
		Minimum/Moderate		Maximum			
		n	%	n	%		
Purpose of mobile usage (in hours)	<b>Social Medias</b>						$\chi^2=12.54$ $p=0.01$
	1-2Hrs	81	96.43%	3	3.57%	84	
	2-3Hrs	84	96.51%	3	3.49%	87	
	3-4Hrs	55	90.16%	6	9.84%	61	
	<b>4-5Hrs</b>	<b>32</b>	<b>82.05%</b>	<b>7</b>	<b>17.95%</b>	<b>39</b>	
Money spent for monthly data pack	Less than Rs.299	56	94.83%	3	5.17%	59	$\chi^2=9.84$ $p=0.05$
	Rs.300 - Rs.499	13	100.00%	0	0.00%	13	
	Rs.500 – Rs.699	61	98.39%	1	1.61%	62	
	Rs.700 – Rs.999	74	91.36%	7	8.64%	81	
	<b>Rs.1000 and above</b>	<b>51</b>	<b>85.00%</b>	<b>9</b>	<b>15.00%</b>	<b>60</b>	
Family monthly income	Less than Rs.10,000	41	100.00%	0	0.00%	41	$\chi^2=8.16$ $p=0.05$
	Rs.10,000 - Rs.50,000	78	96.30%	3	3.70%	81	
	<b>Above Rs.50,000</b>	<b>136</b>	<b>88.81%</b>	<b>17</b>	<b>11.19%</b>	<b>153</b>	



The table.3 shows the association between the level of academic Procrastination and students demographic variables. Significant association was found among the students who are using mobiles for Social media 4 to 5 hours daily ( $\chi^2=12.54$   $p=0.01$ ), who spent Rs.1000 and above for monthly data pack( $\chi^2=9.84$   $p=0.05$ )and whose family monthly income is above Rs.50,000 ( $\chi^2=8.16$   $p=0.05$ ) are having maximum level of academic Procrastination than others. Statistical significance was calculated using chi square test.

## DISCUSSION

The present study found most students used smartphones in medical college setting consisting of adolescent and youth population. The utilization of mobile Internet facility for education purpose, accessing social networking and engaging in group communication was also reported by most students. Mobile phone addiction was observed in nearly 55% of the participants from health science students, in a university. It is also evident that 81% of students shows moderate academic procrastination which inturn lowers their academic achievement (90%).

The findings are consistent with the studies conducted in India [27] on reduced academic performance due to overuse of the mobile phone and in Pakistan [28] on smartphone addiction decreases academic performance of the students as they lower their focus on academic learning and get addicted to Smartphone's for cyber loafing.

### Impact of Mobile Phone Addiction on Academic Procrastination

The study findings shows that Mobile Phone Addiction has a significant positive influence on academic procrastination. This is consistent with the findings of previous study [29] that revealed a statistically significant positive relationship between academic procrastination and Smartphone addiction . Procrastination is a negative defense mechanism that is characterized by escaping or postponing learning tasks. smartphone addiction negatively affects students' physical and mental health, with consequences such as interpersonal communication problems and academic failure. Usage time partially mediated the relationship between smartphone addiction and procrastination.

### Impact of Mobile Phone Addiction on Academic Achievement

In this study, academic achievement was divided in to three dimensions: learning performance, relationship facilitation and learning dedication Learning performance examined students' completion of learning; relationship facilitation assessed students' interpersonal communication ability and learning dedication focused on students' enthusiasm.

The three dimensions of academic achievement are considered to accurately assess students' learning consequences, learning attitude, and learning behaviors under medical education. Our results revealed that mobile phone addiction has a negative impact on learning dedication, learning performance, and relationship facilitation. One study posited that a relationship exists between mobilephone use and academic achievement among university students [30]. Another study involving college students in Hainan showed a 40.5% mobile phone addiction rate [31]. This may be because mobile phones are regarded as study tools that are used to access course materials, search for library catalogs, discuss course assignments with peers, take notes, and so on. Moreover, as the use of mobile phones is often closely related to college studies, students may believe that there is little or no correlation between mobile phone use and academic achievement [32].

### Impact of Academic Procrastination on Academic achievement

Our results also confirm that academic procrastination has a significant negative influence on academic achievement. This is consistent with the findings of previous studies [33]. During the process of studying, procrastination may lead to academic failure, and chronic procrastination can cause negative emotions such as tiredness, anxiety, guilt, among others. Therefore, once medical students show signs of procrastination, it may directly, or passively impact their learning dedication and learning performance. However, procrastinators suffer from persistent anxiety about completing tasks, which can lead to other negative emotional reactions; thus, relationship facilitation is affected to some extent. Consequently, educators and teachers should focus on the negative effects of medical students' academic procrastination [34].

### Association between the level of Mobile Phone Addiction, Academic Procrastination and academic achievement with demographic variables

This study investigated the association between academic procrastination, mobile phone addiction, and academic achievement among Indian Health science students. Mobile phone addiction is found more significant with MBBS students ( $\chi^2=7.62$   $p=0.02$ ), those who are using mobile 8-9 hours per day ( $\chi^2=33.27$   $p=0.001$ ), spending excess money for mobile data pack of above Rs.1000 ( $\chi^2=62.83$   $p=0.001$ )

and students with high family monthly income above Rs.50,000 ( $\chi^2=15.65$   $p=0.001$ ) are found more mobile addiction which affects their academic performance gradually.

Further the level of academic Procrastination was found significant with students those who spent more time in Social media using mobiles ( $\chi^2=12.54$   $p=0.01$ ), those who spend more amount of Rs.1000 and above for monthly data pack ( $\chi^2=9.84$   $p=0.05$ ) and for the students whose family monthly income is above Rs.50,000 ( $\chi^2=8.16$   $p=0.05$ ) are having maximum level of academic Procrastination

Further, the scores for academic procrastination and academic achievement were higher than those reported by previous studies examining dental college students in Delhi [24]. These differences may be attributed to different survey tools and variations in target populations, such as medical, Allied health science and Nursing students. Moreover, the score for mobile phone addiction was higher than that reported among students aged 18–34 years using MPPUS-10 in a Lebanese study [35]. Health science students are influenced by professional and environmental factors and are faced with immense academic pressure and strict standards; thus, they are prone to social anxiety and are vulnerable to mobile phone addiction [36]. These findings suggest that academic procrastination and mobile phone addiction levels among students are above the average and should be given more attention.

Therefore, they need to have better academic achievement and thereby have a low level of academic procrastination [37]. Understanding the influence of demographics on mobile phone addiction, academic procrastination, and academic achievement can inform interventions and policies aimed at health students to reduce their mobile phone addiction and academic procrastination, thereby their Academic achievement can be improved.

## CONCLUSION

This study revealed that the problems of mobile phone addiction and academic procrastination are prevalent among Health science students, and these negatively influences their academic achievement. Based on these results, we offer guidance for reducing the negative effects of mobile phone addiction and academic procrastination on academic achievement. Future studies are required to identify the factors associated with mobile phone addiction and academic procrastination thereby their academic achievement can be improved.

## LIMITATIONS

- Only limited literature were available from the Indian context
- The investigator felt difficult to collect information from the health sciences students who were not cooperative during the data collection.
- Several scales were developed for use among Western cohorts, requiring additional academic attention in the Indian context.
- Finally, this study reveals the relationship between mobile phone addiction, academic procrastination, and academic achievement at one point, but does not explain the causal relationship between the variables.

## ACKNOWLEDGMENT

The authors are indebted and thankful to the management of Shri Sathya Sai Medical college and research institute and College of Nursing permitting to conduct this study.

## FINANCIAL SUPPORT AND SPONSORSHIP

Nil.

## CONFLICTS OF INTEREST

There are no conflicts of interest.

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