



# **Nomophobic Prevalence and Social Intelligence of Higher Secondary Students during COVID-19**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

**Aim:** To identify the nomophobic prevalence and extent of social intelligence among adolescent students and identify the correlation between these variables.

**Study Design:** Descriptive survey method.

**Place and Duration of Study:** Various Higher Secondary schools in Kerala between June 2021 and December 2021.

**Methodology:** 1068 higher secondary students were drawn for the study and the social intelligence and nomophobic prevalence of those students were identified using two standardised tools. The data collected were analysed to identify the level of their social intelligence and nomophobic prevalence, The correlation between these two factors was also studied.

**Results:** The scores achieved by the sample were analysed appropriately and the quartile values on comparison show that the higher secondary students are having a moderate social intelligence and nomophobic prevalence. The correlation studies show that these factors are negatively correlated.

**Conclusion:** Higher secondary students show moderate nomophobic prevalence, It should not be allowed to become an addiction. The negative correlation implicates that nomophobic prevalence decreases the social intelligence of adolescents.

**Keywords:** *Nomophobia; nomophobic prevalence; social intelligence; higher secondary; COVID-19.*

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## ABBREVIATIONS

### Nomophobic Prevalence:

The nomophobic prevalence, that is the extent of smartphone dependency among higher secondary students, is defined in the present study as Nomophobic Rate. Its extent is expressed as high, moderate and low on the nomophobic rating scale, depending on the score achieved by the students.

*NMPRS* - *Nomophobic Rating Scale*

*TSIS* - *Tromso social intelligence scale*

## 1. INTRODUCTION

The trend of using the latest smartphones and social media is quite alarming in the scenario of developing countries like India. A large number of students who are in the adolescent stage are drawn towards these platforms and gadgets, which enable communication, entertainment and education. Consequently, this sets the backbone of the study to probe into the social intelligence and nomophobia of adolescents further. Proper utilisation of social intelligence is crucial in Indian society, which gives more importance to social values and cues. Thus it is crucial to analyse how far social intelligence and nomophobic prevalence of adolescent students are interconnected in the current Indian society, especially when most of the academic activities switched over to online platforms. Since there were no much study conducted among higher secondary students regarding their smartphone addiction as they lack a smartphone. But the pandemic situation compelled them to use a smartphone for their academic purposes.

Nomophobia is a term developed in 2008 from the results of research carried out by the UK post office. The research was contracted by a UK research agency called You Gov. Nomophobia is a portmanteau of no mobile phone phobia. The term became more famous among researchers in 2016 after publishing the study results of Hungarian researchers [1].

It is identified that the rate of nomophobia among people are on the rise every day. It is all due to the rising use of gadgets and their widespread availability to the general public, as well as the creation of new features in the current gadgets. Nomophobia is the kind of anxiety developed due to the feeling of separation of smartphones from

them. The wise usage of smartphones in a social setup is also crucial for an individual, in such cases, the need for social intelligence also arises.

The term social intelligence is highly relevant in the socialisation of an individual. Social intelligence has been defined as "the ability to understand and manage men and women, boys and girls, and to act wisely in human relations" [2]. The level of Social intelligence of an individual, especially of a student, reveals how effectively he can survive in an Indian Society where the social values and norms are more rigid and classic. Thus there is a need to identify the interrelationship between these two terms, social intelligence and nomophobic prevalence among adolescents especially in India where technology is a boon.

Being a citizen of a developing country like India, everyone is well versed with various Internet resources. Because of its quick expansion and numerous tools, working with the internet is a thrilling experience. As indicated by Cabero Almenara (2006), "the Internet has progressively changed from being a depository of information to converting into a social instrument for the elaboration of knowledge" [3]. Because the internet allows us to communicate freely and globally, its adaptability will benefit flexible training that adapts to the educational processes that occur.

It is suggested that the uses of ICT need high cognitive abilities and it will set up in the development of social and emotional intelligence [4]. Studies identified the need for social intelligence in the usage of social media among higher education graduates and how the usage of social intelligence and social media disseminate their academic performance [5]. Blake, C suggested that while using social media and other technologies, there is a great need to improve the social intelligence of students [6]. Yang C, Yen J & Liu J established a study about how social intelligence can be used to solve various social problems arising due to the usage of social media [7].

The present study throws light into the less explored areas of research in the field of social intelligence and nomophobia among higher secondary students. Till the pandemic situation came to the scene, mobile phones were not allowed for the majority of adolescence. But in that condition, too, higher secondary students

were active in social media platforms. Social media usage leads to the addictive nature called nomophobia among adolescents, as per the studies conducted. Usmani, S., Bhatti, K., Jindal, P., Bharti, A. & Bharti, P. (2021) conducted a study among medical students regarding their internet addiction and found that the students are prevalent to internet addiction and it disturbs their sleep quality and quality of life significantly [8]. Studies conducted by Choksi, S. & Patel, N. (2021) shows that 27% of the students are prevalent to nomophobia and it is related positively to stress, sleep quality and depression among them [9].

In the field of social intelligence and nomophobia, there were a few studies that considered the correlation between these factors. Moreover, there were no studies reported on the relationship between social intelligence and nomophobia, especially among higher secondary students.

The teaching-learning process moved to online platforms and this study helped to get an idea about the relation between nomophobic rate and social Intelligence, which will help to make a perfect strategy for the online teaching-learning process in the future; The study will help to identify the level of social intelligence and nomophobic prevalence of higher secondary students and it will be helpful to decision-makers to make proper decisions regarding further actions about the continuation of ensuring the effectiveness of learning through online platforms.

### 1.1 Objectives of the Study

1. To find out the extent of social intelligence among higher secondary students.
2. To find out the level of nomophobic prevalence among higher secondary students.
3. To find out the relationship between social intelligence and nomophobic prevalence among higher secondary students.

### 1.2 Hypotheses of the Study

In line with the objectives, hypotheses are framed. They are:

H<sub>1</sub>: The extent of social intelligence among higher secondary students is high.

H<sub>2</sub>: The nomophobic prevalence of higher secondary students is high.

H<sub>3</sub>: There is no significant relationship between social intelligence and nomophobic prevalence among higher secondary students.

## 2. METHODOLOGY

Considering the objectives and hypotheses of the study, the researchers have chosen the normative survey method for obtaining relevant data for the present study.

The variables selected for the current study are social intelligence and nomophobic prevalence.

### 2.1 Population, Sample and Sampling Design

The population of the study consists of higher secondary students from the state of Kerala. Gender, Locale, Type of institution, Nature of institution, Course Stream, Parenthood and Birth order of the students are the subsamples of the study. 32 schools were selected considering the dimensions of subsamples. From the select schools, 1068 students were selected on a simple random method. So the sampling technique for the current study is stratified random sampling.

### 2.2 Tools for the Study

Tromsø Social Intelligence Scale (TSIS) developed and standardised at the University of Tromsø revalidated by the investigator and Nomophobic Rating Scale (NMPRS) developed and validated by the investigators were used for the current study [10,11].

Mean, Standard Deviation, Quartile and Karl Pearson's coefficient of correlation are the various statistical techniques used in this study.

## 3. RESULTS AND DISCUSSION

The mean and standard deviation of scores samples in TSIS and NMPRS is given in Table 1. Mean and standard deviation value helps to identify the trend of research variables among the sample. After that, the mean values of the sample were compared with the quartile values and trend of variables among samples identified into low, moderate and high groups.

**Table 1. Scores of social intelligence and nomophobic prevalence of higher secondary students**

	Social Intelligence	Nomophobic Prevalence
N	1068.00	1068.00
Mean	68.42	67.79
Median	69.00	69.00
SD	8.87	12.68

### 3.1 The Extent of Social Intelligence and Nomophobic Prevalence among Higher Secondary Students

In order to find out the extent of nomophobic prevalence and social intelligence among higher secondary students, the researchers administered a social intelligence scale and nomophobic rating scale to 1068 higher secondary students. After tabulating the scores, Quartiles, Q1, Q2 and Q3 were calculated. The maximum score obtained for the social intelligence test was 91, and the minimum score was 46. For the nomophobic rating scale, the maximum score obtained was 94, and the minimum score obtained was 34. The variable name, number of students, maximum and minimum scores on the scale, Q1, Q2, Q3 of the scores are presented in Table 2.

The sample was classified into low, moderate and high groups. If the score achieved by the sample is lower than Q1, they are classified into the low group under each variable. The sample that scored between Q1 and Q3 was classified into the moderate group, and the sample that

scored above Q3 was classified into the high group in each variable.

From Table 3, it is clear that the mean value of social intelligence score of higher secondary students was 68.42 with a standard deviation of 8.87 on the Tromsø social intelligence scale. In this rating scale, there are 21 items on a five-point scale. So the minimum score would be 21, and the maximum score would be 105 with a mid-value 63. The mean value of a score lower than 69 (median) but higher than the Q1 value indicates the higher secondary students show moderate social intelligence.

Table 4, with the classification of higher secondary students into low, moderate and high groups with respect to their rate of social intelligence, reveals that 24.3% of the higher secondary students show high social intelligence while 50.1% showed an average score on the social intelligence scale. 25.6% of higher secondary students show low social intelligence. From this, it is clear that most of the higher secondary students show moderate social intelligence. So the hypothesis  $H_1$  is rejected.

**Table 2. The variable name, number of students, maximum and minimum scores on the scale, Q1, Q2, Q3 of the scores**

Variable	Number of students	Minimum score	Maximum score	Q1	Q2 (Median)	Q3
Social intelligence	1068	46	91	62	69	74
Nomophobic Prevalence	1068	34	94	58	69	78

**Table 3. Descriptive analysis of scores of social intelligence of higher secondary students**

	N	Mean	Median	SD
Social intelligence	1068	68.42	69.00	8.87

**Table 4. Frequencies and percentage of samples that belongs to low, moderate and high groups with reference to the extent of social intelligence**

Variable	Extent	Range of scores	Number of students	Percentage
Social intelligence	Low	Below 62	273	25.6
	Moderate	62 – 74	535	50.1
	High	Above 74	260	24.3

From Table 5, it is clear that the mean value of the nomophobic rate of higher secondary students was 67.79, with a standard deviation of 12.68 on the nomophobic rating scale. The nomophobic rating scale is a five-point scale with 24 items. So the minimum score would be 24, and the maximum score would be 120 with a mid-value 72. The mean value (67.79) of a score lower than 69 (median) but higher than Q1 indicates that higher secondary students were moderately prevalent to nomophobia.

Table 6 with the classification of higher secondary students into low, moderate and high groups with respect to their nomophobic rate also supports this fact. Only 22% of the higher secondary students show a high nomophobic rate, while 54.9% show an average score on the nomophobic rating scale. 23.1% of higher

secondary students are less prevalent to nomophobia. So the hypothesis  $H_2$  is rejected.

### 3.2 Correlation between Social Intelligence and Nomophobic Prevalence

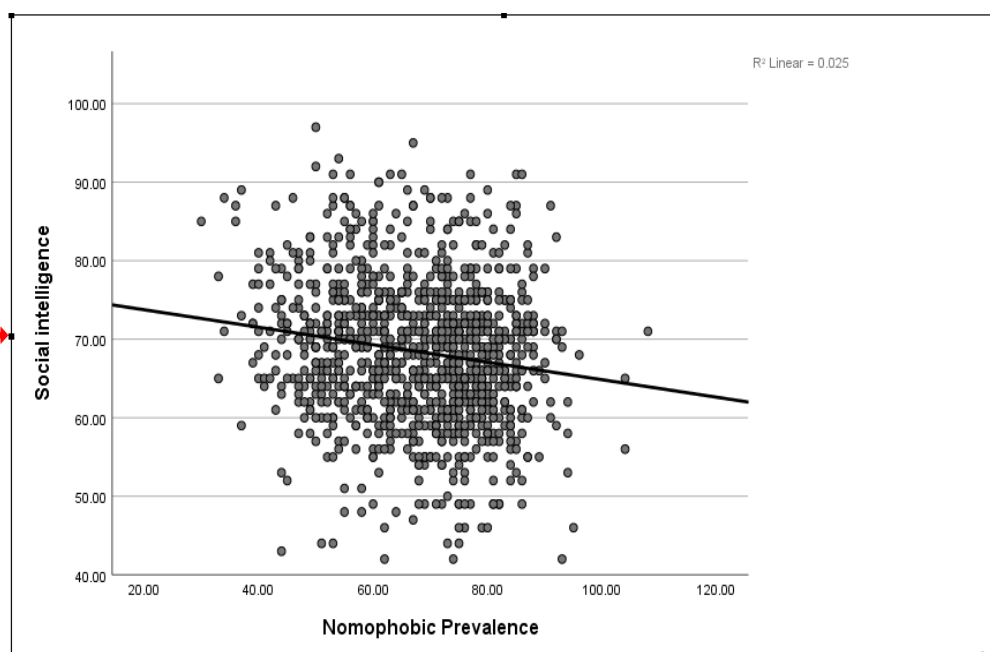
The Pearson correlation between social intelligence and the nomophobic rate was found to be -0.16, which is significant at 0.01 levels. This value is indicating a very weak correlation between the two variables. Thus the obtained negative value indicates a negative correlation. So it can be concluded that there is a very weak negative correlation between the nomophobic rate and social intelligence among higher secondary students. This observation is depicted in Fig. 1.

**Table 5. Descriptive analysis of scores of nomophobic rate of higher secondary students**

	N	Mean	Median	SD
Nomophobic Prevalence	1068	67.79	69.00	12.28

**Table 6. Frequencies and percentage of samples that belongs to low, moderate and high groups with reference to nomophobic rate**

Variable	Extent	Range of scores	Number of students	Percentage
Nomophobic Prevalence	Low	Below 58	247	23.1
	Moderate	58 – 78	586	54.9
	High	Above 78	235	22



**Fig. 1. Correlation between Social Intelligence and Nomophobic Prevalence of Higher Secondary students**

### 3.3 Pharmacological Aspects of the Study

The results show that the nomophobic prevalence is increasing among the students in different aspects. It can be generalised to the whole adolescent. The studies conducted by the members of this investigation team also reveal the same results [11,12]. Nomophobic prevalence also can be considered similar to nosologomania. All these issues need proper interventions with appropriate pharmaceutical treatments like any other psychiatric disorder. So the need for the development of proper medicines and dosage should be explored if the symptoms become more chronic. Further studies should be conducted in pharmacological fields to identify the chemical combination of medicines appropriate to nomophobic prevalence and type of medical interventions for the same.

### 4. CONCLUSION

The current study is an effort to identify the social intelligence and nomophobic prevalence of higher secondary. There were a few studies conducted in this area regarding these variables, especially among higher secondary students. It is observed from the study that the social intelligence of higher secondary students seems to be moderate in the study. As our society is value-based, there are many norms that an individual should follow. To cope with the needs of a realistic societal experience, there is a need for a higher level of social intelligence. Hence, policymakers and teachers should provide needed experiences to inculcate sound social intelligence among the students during their academic process. It will help the students to foster and meet up with the needs of current society. Social intelligence is a key part of a person's overall intellect, and it should be learned through one's community. Students' social intelligence is negatively affected by an increase in social media usage. Student achievement should be augmented by efforts to foster social intelligence during academic activities.

The study reveals that nomophobic prevalence is at a moderate extent among higher secondary students. Several studies conducted in this field also support the same [5,8,9]. They argue that a greater extent of nomophobic prevalence leads to social and psychological problems among adolescents. Thus, the current study gives hope to parents and teachers that the extent of the nomophobic rate is moderate. But they must

keep their wards in the same status by providing students proper guidance and awareness. Various plans and schemes may be developed and executed among higher secondary students to enhance their awareness about the issues of nomophobic prevalence. As the pandemic situation continues, academic administrators and policymakers should take care of the fact that excess usage of smartphones for any purpose may lead to nomophobia, and it affects the students like any other kind of addiction.

### CONSENT

All authors declare that 'written informed consent was obtained from the sample for publication of this report and accompanying images.

### ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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