Nomophobic Prevalence and Social Intelligence of Higher Secondary Students

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ABSTRACT Adolescent smartphone usage is a boon, especially after the pandemic, when social media usage and blended mode of learning became common in academia. While people become more engrossed in their smartphones and social media profiles, they distance themselves from the real social system, which has an impact on their level of social intelligence because social intelligence can only be developed through real-life social interactions. In the current study, a structured survey was administered to 1068 higher secondary students from various schools in Kerala to determine their level of nomophobic prevalence and social intelligence, as well as the significance of differences between these variables with respect to gender, locale, and school type, using the Nomophobic rating scale and Tromsø social intelligence scale. According to the findings of the study, the majority of higher secondary students have a moderate level of social intelligence and nomophobic prevalence. Gender and locale have no effect on the variables, whereas the type of school has an effect on the level of variables. The correlational analysis of the variables revealed a negative correlation between them, which serves as a warning to parents and teachers to keep an eye on their children.

INTRODUCTION

Following the widespread propagation of the COVID 19 pandemic, the world's routine has changed noticeably (Günaydin 2021). Analogously, educational activities and academic processes reflected the same. The pandemic situation had a significant impact on the teaching learning community, and they were forced to shift to online platforms for their academic needs (Wright and Gunderman 2021). A large number of adolescent students did not have a personal phone because the use of mobile phones and similar gadgets was not permitted on campus, and the students spent the majority of their time on campus (Elias et al. 2021b). However, the pandemic situation changed everything. During the lockdown periods, the learning process was com-

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pletely shifted to online platforms, and once the restrictions were lifted and students began to return to campus, the practise of blended learning increased. As a result, to cope with the current situation, most academic institutions used a combination of online and offline learning methods (Shaik et al. 2020).

Every individual should have a smart phone or similar device with internet connectivity during the online learning process, and this situation compelled parents to make a smartphone available for their wards for academic purposes (Shaik et al. 2020). However, students use their devices for both academic and recreational purposes, with the majority of them using social media under the guise of academic use. Adolescents were active in social media even before the pandemic era, and the shift in learning processes catalysed their use of social media, giving them opportunities to use smartphones under the pretext of the academic process (Gezgin et al. 2018). The majority of academic activities and communication between learners and teachers took place on social media platforms, both in the online and blended modes (Rastogi and

Hegde 2020; Subrahmaniam 2021). As a result, students are more likely to use social media and usage of smartphones increased among them. A large number of studies have revealed that social media and smartphone usage are positively linked, so it is understandable that smart phone usage among adolescents has increased and developed into a condition of addiction (Elias et al. 2021a; Gezgin et al. 2018; Rastogi and Hegde 2020). During the blended learning, the most common social media platforms used for communication by academia were WhatsApp, Facebook, and YouTube (Rastogi and Hegde 2020).

India's social and cultural environment is vastly different from the rest of the world. India places emphasis on social values and norms (Surie 2020). Individuals should be able to live according to the norms and rules of their society, and failing to do so will cause them unnecessary problems. The traditional educational system places a greater emphasis on social skills, values, and norms (Ozturk et al. 2017). The traditional educational system makes an individual adaptable to social norms and conditions to some extent. However, blending the learning process or shifting the academic process into an online mode gives learners fewer opportunities to interact with their peers and live a practical social life while pursuing their academic goals (Smith 2021). As a social animal, everyone should be able to demonstrate social intelligence in their daily lives in order to achieve their goals and fulfil their roles (Turaev 2021). As previously stated, living in India is difficult if we are unable to conform to social norms. As a result, the importance of social intelligence cannot be overstated, and proper measures to develop social intelligence should be incorporated into educational activities, whether online or offline (Elias and Mirunalini 2017; Renzulli 2021).

The prevalence of nomophobia among adolescents increased as the educational process shifted to a blended mode (Vaishnavi 2021). Nomophobia is a type of materialistic addiction in which a person is afraid of losing contact with their smartphone, and this fear causes a slew of problems in their social lives, particularly among adolescents (Prasad et al. 2017). A person with a nomophobic predisposition may exhibit all of the signs and symptoms of addiction, including tobacco and alcohol use (Torrejón 2020). When a person is not connected to his smartphone, he may experience withdrawal symptoms. As the use of smartphones among adolescents grows, it is becoming increasingly important to understand the relationship between social intelligence and nomophobia.

Objectives of the Study

The primary aim of the current study is to understand better and discover the extent of higher secondary students' social intelligence and nomophobia. It is also hoped to discover a connection between social intelligence and nomophobia among the adolescent. To be more specific, the study's goals are to determine the impact of gender, locale and school type on students' social intelligence and nomophobia prevalence at the higher secondary level.

Hypotheses of the Study

The following hypotheses were formulated according to the objectives of the study.
H_1 Higher secondary students have a high level of social intelligence.
H_2 The prevalence of nomophobia among higher secondary students is high.
H_3 Higher secondary students do not show any correlation between their social intelligence and nomophobic prevalence.

METHODOLOGY

Research Design

The current study was conducted through a survey of second-year higher secondary students in Kerala. The study included 1068 students from 32 different schools. The students were chosen through a two-stage sampling method. In the first stage, 32 schools were chosen at random. The lottery method is used for randomization. In the second stage, 32 schools were divided into three categories: government, aided, and unaided and 1068 students were chosen at random, with representation from each stratum. A structured survey was administered to the students in order to collect data, and the collected data was statistically interpreted.

Population and Sampling

The study's target population consists of approximately eight lakh higher secondary students from Kerala. The current study included 1068 students from various schools in their second year of schooling.

Tools

The Tromsø Social Intelligence Scale (TSIS) and the Nomophobic Rating Scale (NMPRS) were used in this study. The investigators revalidated the Tromsø Social Intelligence Scale (TSIS), which was developed and validated at the University of Tromsø (Silvera et al. 2001), and the Nomophobic Rating Scale (NMPRS), which was developed and validated by Elias and Mirunalini (2021). TSIS has 21 statements on a five-point Likert scale in three dimensions, while NMPRS has 24 items on a five-point Likert scale. Materialistic, emotional, social, academic and commercial dimensions are included in NMPRS while TSIS includes Social Information Processing, Social Skills and Social Awareness dimensions. The scales' reliability was established by Cronbach's alpha coefficient values of 0.841 for TSIS and 0.812 for NMPRS.

Data Collection and Data Analysis

The TSIS and NMPRS scales were encoded by the investigators and distributed them to the sample students. Based on the scoring key for each scale, the collected responses were converted into scores. The scoring procedure and the various types of items are shown in Table 1.

Table 1: Response and scores for different items in NMPRS and TSIS

Response	Score	
	Positive item	Negative item
Strongly Agree (SA)	5	1
Agree (A)	4	2
Undecided (U)	3	3
Disagree (D)	2	4
Strongly Disagree (SD)	1	5

Source: Authors

Mean, Standard Deviation, t test, ANOVA, Quartile and correlation analysis are utilised in this study for the statistical analysis of data.

RESULTS

Social intelligence score of higher secondary students were found from the Tromsø social intelligence scale. According to Table 2, the mean of social intelligence score for higher secondary students in Tromsø social intelligence scale was found as 68.42 with a standard deviation of 8.87. The Tromsø social intelligence scale system contains 21 items on a five-point scale. So the least score in the scale is 21, and the maximum score obtained will be 105, with a mid-value of 63. A mean value less than 69 (median) but greater than the Q1 level (62) implies that social intelligence of higher secondary students is at a moderate level. Table 2 suggests that higher secondary students' social intelligence is more or less similar in terms of the various dimensions of their social intelligence. Higher secondary students' social awareness dimension appeared to

Table 2: Analysis of scores of higher secondary level students with respect to their social intelligence and nomophobic rate in different dimensions

Variable	Dimension	N	Mean	Median	Std. deviation
Social Intelligence	Social Information Processing	1068	24.49	24.00	4.06
	Social Skills	1068	23.44	24.00	4.24
	Social Awareness	1068	24.00	21.00	4.41
	Total	1068	68.42	69	8.87
Nomophobic Rate	Materialistic	1068	55.83	56.00	16.71
	Emotional	1068	46.08	44.00	13.71
	Social	1068	77.62	80.00	15.06
	Academic	1068	59.65	60.00	15.14
	Commercial	1068	62.57	60.00	22.21
	Total	1068	67.79	69.00	12.28

Source: Authors

be lower in comparison to their TSIS mean score (20.49). In the dimension of social information processing, higher secondary students have a relatively high mean value. This finding indicates that higher secondary students have a higher level of social information processing ability. The mean value for the social skill dimension is 23.44, which is in the middle of the other two dimensions.

Nomophobic rate of higher secondary students were found on the Nomophobic rating scale. According to Table 2, the mean of nomophobic rate for higher secondary students on the nomophobic rating scale was found as 67.79 with a standard deviation of 12.28. The nomophobic rating scale contains 24 items on a five-point scale. So the least score in the scale is 24, and the maximum score obtained will be 120, with a mid-value of 72. The mean value (67.79) of a score less than 69 (median) but greater than Q1(58) indicates that nomophobia was moderately prevalent among higher secondary students.

Table 2 also shows the mean value of nomophobic rate percentage scores in each dimension. According to the mean values, higher secondary students have a higher level of nomophobia in the social dimension (77.62). The

emotional dimension's mean value (46.08) indicates that higher secondary students have the lowest nomophobic prevalence in that dimension. The mean value exceeds the median only in the commercial dimension of nomophobia.

It is observable from Table 3 that among the higher secondary students, 24.3 percent have a high social intelligence, while an average score on the social intelligence scale is showed by 50.1 percent , based on their classification into low, moderate, and high groups with respect to their score in social intelligence scale. 25.6 percent of higher secondary students are socially inept. It is clear from this data that the majority of higher secondary students have moderate level of social intelligence. As a result, hypothesis 1 (H_1) is rejected.

Among the higher secondary students, only 22 percent have a high nomophobic rate, while 54.9 percent have an average nomophobic rating scale score. Nomophobia affects only 23.1 percent of higher secondary students. As a result, hypothesis 2 (H_2) is rejected.

Table 4 shows that the t-values for social intelligence (0.142), and nomophobic prevalence (0.755) at a level of significance of 0.05 were lower than the table value. Hence it can be conclud-

Table 3: **Percentages and frequencies of samples belonging to low, medium, and high groups in terms of social intelligence and nomophobic rate of higher secondary level students**

Variable	Level	Score range	N	Percentage
Social Intelligence	Low	Below 62	273	25.6
	Moderate	62 – 74	535	50.1
	High	Above 74	260	24.3
Nomophobic Rate	Low	Below 58	247	23.1
	Moderate	58 – 78	586	54.9
	High	Above 78	235	22

Source: Authors

Table 4: Significance of difference between mean scores of social intelligence and nomophobic rate of higher secondary level students with reference to gender and locale

Variable			N	Mean	SD	t	df	Sig.
Social Intelligence	Gender	Female	782	68.44	8.86	0.142	1066	0.887
		Male	286	68.36	8.91			
	Locale	Urban	255	68.42	8.33	0.002	1066	0.979
		Rural	813	68.42	9.03			
Nomophobic Rate	Gender	Female	782	67.61	12.57	0.755	1066	0.450
		Male	286	68.32	13.08			
	Locale	Urban	255	67.25	13.19	0.791	1066	0.438
		Rural	813	67.97	12.52			

Source: Authors

ed that the social intelligence and nomophobic prevalence of higher secondary students do not differ significantly with respect to their gender. The table also shows that the t-values for social intelligence (0.002) and nomophobic prevalence (0.791) at a level of significance of 0.05 were lower than the table value (3.004). Hence it can be concluded that the social intelligence and nomophobic prevalence of higher secondary students do not differ significantly with respect to their locality.

It is observed from Table 5 that the obtained F value for social intelligence (4.117) and nomophobic rate (3.395) are greater than the table value (3.004) at a 0.05 level of significance. It means higher secondary students from at least some of the types of schools have significant differences with respect to social intelligence

and nomophobic rate. In order to make further comparisons among the groups, Tukey's Honest Significant Difference Test (HSD) is employed, which helped to compare the mean scores of government school students with aided and unaided school students and vice versa with respect to their nomophobic rate and social intelligence.

Multiple comparisons of mean scores of social intelligence and nomophobic rate among government, aided, and unaided higher secondary students are given in Table 6. The post hoc test result indicates that the difference in the mean scores of social intelligence of higher secondary students from aided and unaided schools significantly differ at 0.05 level. Table 6 also shows that among higher secondary students from aided and unaided schools, those from

Table 5: **Significance of difference between mean scores of social intelligence and nomophobic rate of higher secondary level students with reference to the type of school**

		Sum of squares	df	Mean square	F	Sig.
Social Intelligence	Between groups	643.376	2	321.688	4.117	0.017*
	Within groups	83210.859	1065	78.132		
	Total	83854.235	1067			
Nomophobic Rate	Between groups	1086.764	2	543.382	3.395	0.034*
	Within groups	170449.329	1065	160.046		
	Total	171536.093	1067			

*$p < .05$.
Source: Authors

Table 6: Multiple comparisons of mean scores of social intelligence and nomophobic rate among government, aided and unaided school higher secondary level students

	Type of school	N		Mean difference	Std. error	Sig.	Subset for alpha = 0.05	
							1	2
HSD Social Intelligence	Government	344	Aided	1.14818	0.58750	0.124	69.0349	69.0349
			Unaided	-1.67479	1.21956	0.355		
	Aided	662	Government	-1.14818	0.58750	0.124	67.8867	
			Unaided	-2.82297*	1.17398	0.043*		
	Unaided	62	Government	1.67479	1.21956	0.355		70.7097
			Aided	2.82297*	1.17398	0.043*		
	Sig.						0.508	0.238
HSD Nomophobic Rate	Government	344	Aided	-1.70159	0.84084	0.107	66.5174	
			Unaided	-3.83740	1.74546	0.072*		
	Aided	662	Government	1.70159	0.84084	0.107	68.2190	68.2190
			Unaided	-2.13581	1.68022	0.412		
	Unaided	62	Government	3.83740	1.74546	0.072*		70.3548
			Aided	2.13581	1.68022	0.412		
	Sig.						0.484	0.319

*$p < .05$.
Source: Authors

unaided schools have a higher extent of social intelligence. There is no significant difference is shown between higher secondary students from government and aided schools with respect to their mean score in social intelligence. The higher secondary students from government and unaided schools also do not show any significant difference with respect to their mean score in social intelligence.

The post hoc test results also indicate that the difference in the mean scores of nomophobic rate of higher secondary students from government and unaided schools significantly differ at 0.05 level. Table 6 also shows that higher secondary students from unaided schools have a higher nomophobic rate than those from government schools. There is no significant difference between the higher secondary students from government and aided schools with respect to their nomophobic rate. Higher secondary students from unaided and aided schools also do not show any significant difference with reference to their nomophobic rate.

Table 7: Correlation between social intelligence and nomophobic rate among higher secondary level students

Comparing variables	N	Pearson correlation
Social intelligence and Nomobic rate	1068	-0.16

Source: Authors

The Pearson's correlation coefficient between social intelligence level and the nomophobic rate prevalence was determined to be -0.16, which is significant at 0.01 level (Table 7), showing that the two variables have a very weak relationship. As a conclusion, the negative result obtained indicates a negative correlation. So, it can be inferred that among higher secondary students, there is a very modest negative association between nomophobia and social intelligence.

DISCUSSION

According to the results, analysis of scores achieved by higher secondary students in NM-PRS and TSIS shows that higher secondary students appear to have moderate social intelligence. This finding backs up the findings of other studies conducted on different levels of students (Lathifah and Usman 2019; Kanimozhi and Vasimalairaja 2020). Previous research suggests that social intelligence is essential for dealing with the ever-changing challenges of a technological society (Ozturk et al. 2017; Jack and Oguntayo 2020; Smith 2021). The social intelligence of both the control and experimental groups in a study of university students (Malik et al. 2018) and a study conducted by Jack and Oguntayo (2020) revealed that the sample has higher social intelligence in the social processing dimension and a low level of Social intelligence in the social awareness dimensions. Investigators obtained the same result among higher secondary students. Based on these findings, it is clear that students have a higher level of social intelligence in the dimension of social processing skills.

According to previous studies, 53 percent of school going students have a moderate level of nomophobia (Joe 2020). The prevalence of nomophobia is slightly higher among undergraduate and medical students, than in adolescent students according to studies (Schwaigerand Tahir 2020). However, according to the current study, higher secondary students have a moderate level of nomophobia, and the main reason for this could be the lack of access to a smartphone while conducting the current investigation. This contradicts the findings of studies conducted on the same population after the first pandemic lockdown (Elias et al. 2021b).

The differential analysis in this study shows that gender and locale has no effect on social intelligence or nomophobic prevalence. Various studies conducted among students with respect to their social intelligence and nomophobic prevalence had contradictory results (Kanimozhi and Vasimalairaja 2020; Schwaiger and Tahir 2020). The research findings also indicated that there is a significant difference between school types in terms of both social intelligence and nomophobic prevalence. The post hoc tests reveal that aided and unaided school students have significantly different levels of social intelligence, with unaided students having a higher level of social intelligence. Similarly, the nomophobic prevalence differs significantly between government and unaided school students, with unaided students having a higher level of nomophobia.

A correlational analysis of social intelligence and nomophobic prevalence among higher secondary students reveals a negative relationship between the variables. The R^2 value of 0.026 indicates that nomophobic prevalence affects only 2.6 percent of social intelligence. The negative correlation of Social intelligence with nomophobic prevalence is supported by the studies conducted by various researchers (Ayar et al. 2018; Sternberg 2020)

CONCLUSION

The goal of this study is to find out how much socially intelligent and nomophobic are the higher secondary students. There have been a few investigations on these characteristics, particularly among higher secondary school students. Nomophobia and social intelligence among students were found to be moderate, according to the analysis. Because Indian society is centred on principles, there are several norms that everyone must observe in one's social life. A higher level of social intelligence is required to deal with the demands of a realistic society experience. Since students need opportunities to build social intelligence throughout their educational endeavours, educators and legislators alike should supply them. As a result, pupils will be better equipped to tackle the challenges of modern life. Social intelligence is an important component of total intelligence and should be developed through one's community. The rise in nomophobia has a negative impact on students' social intelligence. Efforts should be made to foster social intelligence and reduce nomophobic prevalence during academic activities in order to improve student achievement.

RECOMMENDATIONS

According to the findings of the study, both social media intelligence and nomophobic prevalence are in the moderate range and are negatively correlated with one another. Parents of the adolescent should therefore monitor and limit their children's excessive use of social media platforms throughout their educational endeavours to reduce the nomophobic prevalence. As a result of the pandemic situation, the use of social media and online platforms for teaching and learning has elevated and it enhanced the nomophobic prevalence among higher second-

ary students and thus decreased their social intelligence. In this situation, parents should pay friendlier attention to their children because there is a high risk of them using their smartphones and social media for academic purposes. It is also clear that anything that is not controlled will become addictive in nature, necessitating effective interventions to control such addictions in their early. Along with these, researchers urge that academia adopt interventions to improve social intelligence in adolescents in addition to academic activity. Adolescent students in a classical Indian civilization must develop social intelligence in order to attain beneficial results in the future.

IMPLICATIONS

According to the findings of the study, both social media intelligence and nomophobic prevalence are in the moderate range and are negatively correlated with one another. Parents of the adolescent should therefore monitor and limit their children's excessive use of social media platforms throughout their educational endeavours to reduce the nomophobic prevalence. As a result of the pandemic situation, the use of social media and online platforms for teaching and learning has elevated and it enhanced the nomophobic prevalence among higher secondary students and thus decreased their social intelligence. In this situation, parents should pay friendlier attention to their children because there is a high risk of them using their smartphones and social media for academic purposes. It is also clear that anything that is not controlled will become addictive in nature, necessitating effective interventions to control such addictions in their early. Along with these, researchers urge that academia adopt interventions to improve social intelligence in adolescents in addition to academic activity. Adolescent students in a classical Indian civilization must develop social intelligence in order to attain beneficial results in the future.

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APPENDIX

S. No	Name of School	School type	Boys	Girls	Total
1	GHSS Pottassery	Governmnet	16	42	58
2	PMGHSS Palakkad	Governmnet	11	20	31
3	GHSS Karakurissi	Governmnet	12	13	25
4	MNKMGHSS Pulapatta	Governmnet	6	46	52
5	GHSS Chalissery	Governmnet	7	19	26
6	GHSS Cherpulassery	Governmnet	16	18	34
7	GOHSS, Pattambi	Governmnet	10	21	31
8	GGHSS Alathur	Governmnet	0	28	28
9	GMMHSS	Governmnet	0	23	23
10	GMBHSS Thycaud	Governmnet	23	0	23
11	SMVGHSs Thiruvananthapuram	Governmnet	13	0	13
12	DBHSS	Aided	16	28	44
13	MESHSS, Mannarkkad	Aided	17	29	46
14	Kalladi HSS, Kumaramputhur	Aided	8	35	43
15	Mundur HSS	Aided	10	51	61
16	KPRP HSS, Kongad	Aided	10	42	52
17	Karimpuzha HSS	Aided	8	28	36
18	CA HSS Ayakkad	Aided	6	38	44
19	FMHSS Karinkallaththani	Aided	6	28	34
20	Kannadi HSS	Aided	11	40	51
21	Chalavara HSS	Aided	10	25	35
22	Puliyaparamba HSS	Aided	8	30	38
23	St Pauls HSS, Kozhinjampara	Aided	9	13	22
24	St Philominas HSS, Koonammav	Aided	5	21	26
25	Cherupushpam C G HSS Vadakkanchery	Aided	0	42	42
26	St.Theressas,Shornur	Aided	0	34	34
27	LSNCGHSS Ottappalam	Aided	0	36	36
28	St Alberts HSS, Ernakulam	Aided	18	0	18
29	MET EM HSS, Mannarkkad	Unaided	4	10	14
30	MESKTM Hss Edathanattukara	Unaided	8	9	17
31	Bharathmatha HSS, Chandranagar	Unaided	18	0	18
32	Kanikkamatha CGHSS Palakkad	Unaided	0	13	13
	Total		286	782	1068