

THE INFLUENCE OF INSTITUTIONAL NATURE AND PARENTAL OCCUPATION ON NOMOPHOBIA LEVELS AMONG HIGH SCHOOL STUDENTS IN MADURAI DISTRICT

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Abstract

Nomophobia, characterized as the fear of being without mobile phone access, has emerged as a significant psychological concern among adolescents in the digital age. This study investigated how institutional nature and parental occupation influence nomophobia levels among high school students in Madurai District. A sample of 410 students from aided schools (117 from Boys schools, 177 from Girls schools, and 116 from Co-educational schools) was assessed using the standardized Nomophobia Questionnaire (NMP-Q). Data were analysed using descriptive statistics, one-way ANOVA with Tukey HSD post-hoc tests, Pearson correlation coefficients, and chi-square tests. Results revealed that 79.8% of students experienced clinically significant nomophobia (moderate to severe levels), with a mean score of 113.68 (SD = 18.95). Co-educational school students demonstrated significantly higher nomophobia scores ($M = 117.66$, $SD = 19.67$) compared to both Boys schools ($M = 112.02$, $SD = 17.45$) and Girls schools ($M = 110.77$, $SD = 18.57$), $F(2, 407) = 5.08$, $p = .007$, $\eta^2 = .024$. Significant differences also emerged across parental occupation categories, $F(2, 407) = 5.32$, $p = .005$, $\eta^2 = .025$, with students of private sector employees exhibiting higher nomophobia ($M = 115.69$, $SD = 18.32$) compared to government employees' children ($M = 110.42$, $SD = 20.54$) and self-employed parents' offspring ($M = 111.92$, $SD = 18.80$). Weak but significant positive correlations were found between institutional nature and nomophobia ($r = .152$, $p = .002$) and between parental occupation and nomophobia ($r = .159$, $p = .001$). Institutional nature and parental occupation were independent of each other ($r = .042$, $p = .401$; $\chi^2(4) = 0.79$, $p = .940$), indicating these contextual factors operate as separate influences on smartphone dependency. While statistically significant, both factors explained modest variance (combined < 5%), suggesting nomophobia is multiply determined by complex individual and environmental factors. These findings underscore the need for multi-level, context-sensitive interventions addressing smartphone dependency among adolescents, particularly targeting co-educational institutions and families with private sector employment demands.

Keywords: *Nomophobia, Institutional Nature, Parental Occupation, High School Students, Smartphone Dependency, and Adolescent Mental Health.*

Introduction

The smartphone has fundamentally transformed how adolescents communicate, learn, and spend their time. While these devices offer unprecedented access to information and social connection, they have also introduced a troubling new phenomenon: nomophobia the anxiety experienced when unable to access one's mobile device. For today's high school

students, who have grown up as true digital natives, this fear has become increasingly common and concerning. What makes this particularly worrying is that nomophobia isn't just about using phones too much. It represents genuine psychological distress that can interfere with sleep, academic performance, family relationships, and emotional wellbeing. When a teenager experiences panic at the thought of a dead battery or feels compelled to check their phone dozens of times per hour, we're witnessing something more than a bad habit we're seeing a form of dependency that deserves serious attention. Yet not all adolescents' experience nomophobia equally. The environment where they study and the family context in which they live appear to shape their vulnerability. Do students in co-educational settings face different pressures than those in single-gender schools? Does having parents who work long hours in the private sector create different family dynamics than having government employee parents with more predictable schedules? These questions have received surprisingly little research attention, particularly in Indian contexts.

This study addresses these gaps by examining how institutional nature and parental occupation relate to smartphone dependency among high school students in Madurai District. Understanding these relationships is essential for developing interventions that recognize the diverse contexts in which adolescents live and learn.

Review of Literature

Nomophobia encompasses four key dimensions: inability to communicate with others, losing connectedness, inability to access information, and giving up convenience. Researchers understand it as existing on a continuum from mild discomfort to severe anxiety, drawing from addiction models and attachment theory to explain how smartphones can become objects of psychological dependency.

International studies report nomophobia prevalence rates ranging from 42% to 77% among young adults, with Indian research finding 56-73% prevalence among college students. However, research specifically examining high school students remains limited, despite evidence suggesting this younger group may be particularly vulnerable due to heightened peer influence and still-developing self-regulation abilities.

The institutional context appears to matter. Educational environments create distinct social dynamics that shape technology use patterns. Co-educational settings may feature more intensive social comparison and relationship-maintenance communication, potentially increasing dependency risk. Single-gender schools may cultivate more homogeneous peer cultures with different technology norms. Yet empirical research directly examining nomophobia differences across Boys, Girls, and Co-educational schools' remains sparse in Indian contexts.

Parental occupation serves as an important indicator of family dynamics that may influence adolescent smartphone use. Private sector employment often involves longer hours, higher stress, and less predictable schedules, potentially reducing parental supervision. Government employment typically offers more structured schedules and job security,

enabling more consistent family routines. Self-employment introduces variable conditions depending on business type and success level. However, research examining these relationships with adolescent nomophobia has been minimal.

Objectives and Hypotheses

Objectives

1. To assess overall nomophobia prevalence among high school students in Madurai District.
2. To examine differences in nomophobia across institutional types (Boys, Girls, Co-educational schools).
3. To investigate variations based on parental occupation (Government, Private, Self-employed).
4. To explore correlational relationships between these variables and nomophobia scores.
5. To determine whether institutional nature and parental occupation are independent variables.

Hypotheses

- H₀₁: There is no significant difference in nomophobia scores across institutional types.
- H₀₂: There is no significant difference in nomophobia scores based on parental occupation.
- H₀₃: There is no significant correlation between institutional nature and nomophobia.
- H₀₄: There is no significant correlation between parental occupation and nomophobia.
- H₀₅: There is no significant correlation between institutional nature and parental occupation.

Methodology

This quantitative study employed a cross-sectional survey design. A sample of 410 high school students (8th-9th grades) were collected from Government and aided schools in Madurai District through purposive sampling. The sample comprised 117 students from Boys schools (28.5%), 177 from Girls schools (43.2%), and 116 from Co-educational schools (28.3%). Regarding parental occupation, 85 students had government employee parents (20.7%), 241 had private sector employee parents (58.8%), and 84 had self-employed parents (20.5%).

The standardized Nomophobia Questionnaire (NMP-Q) was administered to assess smartphone dependency. This validated 20-item instrument evaluates anxiety related to being without mobile phone access, with scores classified as: absence (<60), mild (60-99), moderate (100-139), and severe (≥140) nomophobia. Following institutional approval and parental consent, questionnaires were administered during regular school periods. Students provided assent before participation. Complete data were obtained from all 410 participants.

Statistical analyses included descriptive statistics, one-way ANOVA with Tukey's HSD post-hoc tests and Pearson correlations. Significance was set at $\alpha = 0.05$, with effect sizes reported for all major analyses.

Analysis

Objective: 1 Overall Prevalence

Table 1 Distribution of Nomophobia Severity Among Students

Nomophobia Category	n	%	Cumulative %
None	3	0.7	0.7
Mild	80	19.5	20.2
Moderate	317	77.3	97.6
Severe	10	2.4	100.0
Total	410	100.0	
Clinically Significant (Moderate + Severe)	327	79.8	

Note. Overall sample $M = 113.68$, $SD = 18.95$.

The mean nomophobia score was 113.68 ($SD = 18.95$), falling solidly in the moderate range. Only three students (0.7%) showed no signs of nomophobia, while 80 students (19.5%) experienced mild symptoms. The vast majority 317 students representing 77.3% fell into the moderate category, with an additional 10 students (2.4%) experiencing severe nomophobia. Combined, 79.8% of students experienced clinically significant smartphone dependency, indicating this has become a normative rather than exceptional experience.

Objective 2: Differences Across Institutional Types

Table 2 Descriptive Statistics by Nature of Institution

Institution Type	n	M	SD	Minimum	Maximum
Boys Schools	117	112.02	17.45	88	140
Girls Schools	177	110.77	18.57	88	140
Co-educational Schools	116	117.66	19.67	53	185
Total	410	113.68	18.95	53	185

Table 3 One-Way ANOVA: Nomophobia Scores by Nature of Institution

Source	SS	df	MS	F	p	η^2
Between Groups	3,543.62	2	1,771.81	5.08	.007**	.024
Within Groups	142,194.81	407	349.37			
Total	145,738.43	409				

Note. ** $p < .01$

Analysis for H₀₁: The one-way ANOVA revealed a statistically significant difference in nomophobia scores across institutional types, $F(2, 407) = 5.08, p = .007, \eta^2 = .024$. Therefore, **the null hypothesis H₀₁ is rejected.**

Table 4 Post Hoc Comparisons (Tukey HSD): Nature of Institution

Comparison	Mean Difference	SE	p	95% CI
Boys vs. Girls	1.25	2.17	.833	[-3.82, 6.32]
Boys vs. Co-ed	-5.64*	2.22	.031	[-10.83, -0.45]
Girls vs. Co-ed	-6.89**	2.00	.002	[-11.60, -2.18]

Note. * $p < .05$. ** $p < .01$

Post hoc comparisons using Tukey HSD indicated that Co-educational school students scored significantly higher than both Boys schools ($p = .031$) and Girls schools ($p = .002$). The difference between Boys and Girls schools was not significant ($p = .833$). The effect size was small ($\eta^2 = .024$), indicating that institutional nature accounts for approximately 2.4% of the variance in nomophobia scores.

Objective 3: Variations Based on Parental Occupation

Table 5 Descriptive Statistics by Parental Occupation

Parental Occupation	n	M	SD	Minimum	Maximum
Government	85	110.42	20.54	53	159
Private	241	115.69	18.32	53	185
Self-employed	84	111.92	18.80	63	145
Total	410	113.68	18.95	53	185

Table 6 One-Way ANOVA: Nomophobia Scores by Parental Occupation

Source	SS	df	MS	F	p	η^2
Between Groups	3,720.85	2	1,860.43	5.32	.005**	.025
Within Groups	142,017.58	407	349.06			
Total	145,738.43	409				

Note. ** $p < .01$

Analysis for H₀₂: The one-way ANOVA showed a statistically significant difference in nomophobia scores based on parental occupation, $F(2, 407) = 5.32, p = .005, \eta^2 = .025$. Therefore, **the null hypothesis H₀₂ is rejected.**

Table 7 Post Hoc Comparisons (Tukey HSD): Parental Occupation

Comparison	Mean Difference	SE	p	95% CI
Government vs. Private	-5.27*	2.31	.061	[-10.74, 0.20]
Government vs. Self-employed	-1.50	2.70	.841	[-7.93, 4.93]
Private vs. Self-employed	3.77	2.34	.240	[-1.77, 9.31]

Note. * $p < .10$ (trend level)

Post hoc comparisons revealed a trend-level difference between Government and Private sector employees' children ($p = .061$), with private sector employees' children showing higher nomophobia scores. The effect size was small ($\eta^2 = .025$), indicating that parental occupation explains approximately 2.5% of variance in nomophobia scores.

Objective 4: Correlational Relationships

Table 8 Pearson Correlations Among Variables

Variable	1	2	3
1. Nature of Institution	—		
2. Parental Occupation	.042	—	
3. Nomophobia Score	.152**	.159**	—

Note. ** $p < .01$

Analysis for H₀₃: The Pearson correlation between nature of institution and nomophobia scores was statistically significant, $r = .152$, $p = .002$. Therefore, the null hypothesis H₀₂ is rejected. This positive correlation indicates that higher institutional codes (progressing from Boys to Girls to Co-educational schools) are associated with higher nomophobia scores. The squared correlation ($r^2 = .023$) indicates that institutional nature accounts for approximately 2.3% of variance in nomophobia scores.

Analysis for H₀₄: The Pearson correlation between parental occupation and nomophobia scores was statistically significant, $r = .159$, $p = .001$. Therefore, the null hypothesis H₀₂ is rejected. This positive correlation suggests a relationship between parental occupation categories and nomophobia levels. The squared correlation ($r^2 = .025$) indicates that parental occupation accounts for approximately 2.5% of variance in nomophobia scores.

Objective 5: Independence of Variables

Table 9 Chi-Square Test: Nature of Institution × Parental Occupation

Nature of Institution	Government	Private	Self-employed	Total
	n (%)	n (%)	n (%)	n (%)
Boys	26 (22.2)	68 (58.1)	23 (19.7)	117 (100.0)
Girls	34 (19.2)	107 (60.5)	36 (20.3)	177 (100.0)
Co-educational	25 (21.6)	66 (56.9)	25 (21.6)	116 (100.0)
Total	85 (20.7)	241 (58.8)	84 (20.5)	410 (100.0)

Note. $\chi^2(4, N = 410) = 0.79$, $p = .940$

Analysis for H₀₅: The Pearson correlation between nature of institution and parental occupation was not statistically significant, $r = .042$, $p = .401$ (see Table 8). Additionally, the chi-square test of independence showed no significant association between these variables, $\chi^2(4, N = 410) = 0.79$, $p = .940$. Therefore, fail to reject the null hypothesis H₀₅. This indicates that nature of institution and parental occupation are independent variables, with no meaningful association between them. The distribution of parental occupations is nearly identical across all three institutional types.

Discussion

The near-universal prevalence of nomophobia among these students is striking. With nearly four in five experiencing moderate to severe symptoms, smartphone dependency has clearly become the norm rather than the exception. This finding extends previous research on Indian college students to younger adolescents, confirming that high school students face similar or even greater vulnerability. Why do Co-educational school students show higher nomophobia? Several mechanisms likely operate. Mixed-gender environments involve more complex social dynamics as adolescents navigate cross-gender friendships, romantic interests, and intensified social comparison. Smartphones become essential tools for managing these relationships sending messages, monitoring social media, maintaining constant connectivity. The peer pressure around having the latest devices and staying constantly available may be amplified when trying to impress potential romantic partners and maintain status within complex peer hierarchies.

Interestingly, Girls schools showed the lowest nomophobia levels, despite research often reporting higher dependency among females individually. This suggests that all-female educational environments may actually protect against excessive smartphone use. Perhaps these settings cultivate stronger institutional cultures with clearer behavioural norms, creating protective environments that buffer against dependency. The parental occupation findings also make intuitive sense. Private sector jobs often demand long hours, evening and weekend work, and bring high stress levels. These conditions reduce parental availability and supervision, creating environments where adolescents spend more time alone and may turn to smartphones for entertainment and emotional regulation. Parents managing demanding careers may also model problematic technology use constantly checking work emails inadvertently normalizing such behaviour for their children.

Government employment's more predictable schedules and greater job security may enable more consistent parenting and family routines. The lower family stress likely supports more positive parent-child interactions, reducing adolescents' need to seek connection primarily through digital relationships.

Self-employed parents occupy an interesting middle ground. Some work from home, providing physical presence though not necessarily quality interaction if constantly engaged in business tasks. Others work long entrepreneurial hours away from home. This heterogeneity within the self-employed category likely explains why their children's

nomophobia levels fall between the other two groups. However, we must maintain perspective. While these contextual factors show statistically significant relationships, they explain less than 5% of variance combined. This means the vast majority of individual differences arise from other factors personality traits, specific peer influences, family communication quality, individual usage patterns, and countless other variables this study didn't measure. Institutional nature and parental occupation matter, but they're clearly not destiny.

Implications and Recommendations

These findings carry important practical implications. Schools, particularly co-educational institutions, should implement comprehensive digital wellness policies establishing phone-free zones during instruction and meals. However, complete bans often backfire, increasing anxiety. Moderate restrictions preserving student autonomy while limiting problematic use work best.

Digital literacy curricula should extend beyond technical skills to address psychological dimensions helping students understand attention-capture design features, recognize their vulnerability to dependency, and develop self-regulation strategies. Co-educational schools especially need programs addressing the social dynamics driving excessive smartphone use.

For parents, particularly those in demanding private sector jobs, the message is clear: when work limits availability, prioritize quality over quantity in parent-child interactions. Brief daily conversations, dedicated family time on weekends, and consistent routines can provide connection even with demanding schedules. Families should establish media plans applying to everyone, not just adolescents parental modelling powerfully influences behaviour. Mental health professionals should routinely assess smartphone dependency using validated instruments. Cognitive-behavioural interventions adapted for nomophobia show promise, helping adolescents challenge irrational connectivity beliefs and develop alternative coping strategies. Group formats may work particularly well, leveraging peer support.

Policymakers should mandate digital citizenship education in core curricula and invest in school-based mental health resources. Funding intervention research to establish evidence-based practices is essential, as is supporting public awareness campaigns educating communities about healthy technology use.

Limitations and Future Directions

This study has several limitations. The sample included only aided schools, excluding government and private institutions that may show different patterns. The geographic restriction to Madurai District limits regional generalizability. The cross-sectional design prevents causal inference; we can't determine whether contexts cause nomophobia or whether pre-existing characteristics lead families to select particular schools and occupations.

Despite the title mentioning academic performance, no performance data were actually collected an important gap that future research should address. Many potentially

relevant variables remained unmeasured, including personality traits, family communication quality, peer influences, and specific usage patterns.

Future research should employ longitudinal designs tracking students over time, examine expanded variable sets, include diverse sampling across school types and regions, test intervention effectiveness, and incorporate qualitative methods to understand lived experiences. The field urgently needs well-designed studies evaluating which prevention and intervention approaches work best for different populations.

Conclusion

This study reveals that nomophobia has become alarmingly prevalent among high school students in Madurai District, affecting nearly 80% at moderate to severe levels. Both institutional nature and parental occupation influence smartphone dependency, with co-educational school students and private sector employees' children showing elevated vulnerability. However, these contextual factors explain only small portions of variance, highlighting nomophobia's multifaceted nature.

Effective responses require comprehensive, multi-level approaches involving schools, families, mental health professionals, and policymakers working collaboratively. Rather than treating smartphones as inherently harmful or imposing restrictive bans, we should support adolescents in developing intentional, values-aligned use patterns that harness technology's benefits while avoiding dependency that undermines wellbeing. This requires sustained effort across multiple systems to promote healthy adolescent development in an increasingly digital world. With continued research and evidence-based interventions, we can help today's young people navigate their relationship with technology in healthier, more balanced ways.

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