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Research Article

Effect of Nomophobia on Body Image Satisfaction and Aggression Among College Students

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Abstract:

Nomophobia characterized as the fear of being without a mobile phone or being unable to use it has become widespread in today's technologically advanced society. Given the growing reliance on mobile, it is essential to comprehend the potential psychological effects of nomophobia. Body image satisfaction is a person's subjective assessment and perception of their own physical appearance. It includes sentiments, attitudes, and general body pleasure, including weight, shape, size, and overall attractiveness. Excessive smartphone use may result in an obsession with virtual relationships, limiting face-to-face social interactions and empathy, which can contribute to violence. This research aimed to examine the influence of nomophobia on body image satisfaction and aggression.

The study utilized a quantitative research design and collected data from a sample of college students (N = 52) using convenience sampling. Correlational analysis and regression analysis were also employed on the data.

Findings suggest that the sample under study suffers from a moderate risk of nomophobia higher level of body image satisfaction and moderate levels of aggression. Also, there is a weak negative correlation between nomophobia and body image satisfaction and weak positive correlation between nomophobia levels and four aspects of aggression. In addition, nomophobia is not a significant predictor of college students' body image satisfaction and aggression. These findings highlight the detrimental effects of nomophobia on college students' psychological well-being. In conclusion, results suggest that guided intervention could help decrease the levels of nomophobia in college students, resulting in increased satisfaction with their body image and lower levels of aggression.

Keywords: Nomophobia, Aggression, Body Image Satisfaction, smartphone addiction, etc.

Introduction

The significance of smartphone usage has expanded with the rapid advancement of technology. The fact that smartphones are handy for users and especially the ability to use social media applications in them has affected the lives of individuals and society in general (Sanal & Ozer, 2017). In this context, the popularity of social media platforms has a substantial influence on the development of smartphones. Thus, it's imperative to investigate smartphone use's psychosocial aspects (Balick, 2013). It is observed that smartphones among high school and university students are popular to grab more and more opportunities to establish social relationships (Hong et al.,2012). On the other end, such a revolutionary social communication strategy has resulted in unprecedented negative outcomes, with virtual communities operating in different dimensions than traditional communication and individuals perceiving a new range of interaction rules. However, every invention has its advantages and disadvantages, and the same can be said for smartphones (Ahmed et al., 2011). Internet use on smartphones has certain features resulting in addiction (Kwon et al., 2013). The most serious ones include physical, health, and psycho-social issues (Hussain et al.,2016). Nomophobia is one of the psychological issues faced by users and is evidenced by the compulsive usage of smartphones (Yildirim et al., 2016), which deals with the unintentional and will-less fear induced in an individual due to non-accessibility and inability to communicate through mobile phones (Yildirim & Correia, 2015). Nomophobia (NO Mobile Phobia) is considered a behavioral addiction and a kind of phobia (Bragozzi & Puente, 2014), Long hours of mobile phone usage, constantly carrying the smartphone, and its charger and checking out the notification bar on smartphones, and getting irritated and angry when the smartphones need to be turned off (Akilli & Gezgin, 2016), are some of the symptoms of nomophobia. Findings on nomophobia show a correlation between nomophobia and loneliness (Gezgin et al., 2018), a decrease in academic achievement (Erdem et al., 2016), internet addiction (Gezgin & Cakır, 2016), a decrease in self-esteem and low level of well-being (Ozdemir et al., 2018) has been identified. Findings suggest that nomophobia was linked to physical aggressiveness, digital tolerance, multimedia technologies, and frustration. It is believed that while investigating nomophobia, it is crucial to consider actions like anger and aggression (Babayığıt et al., 2019). Also, there is no relationship between verbal aggressiveness and hostility, but there exists a relationship between anger, smartphones, and nomophobia (Nuri et al., 2021). It is evident that internet addiction and aggression mutually affect each other (Lim, et al.

2015). Northup, T. (2013) reported alleged connections to exist between media use and aggression, sexual attitudes, behaviors, and body image. One study found that Peer bullying, relational aggressiveness, body image disturbances, and unhealthy eating habits are all closely related among female young adults (Kaitz et al., 2019). Social media use or exposure to image-related information may have detrimental effects on some healthy young adults' body image and eating habits. Body image dissatisfaction increases the likelihood of participating in harmful diets and disordered eating practices (Rounsefell et al., 2020). Studies on Facebook (Hayes et al., 2015) and Instagram (Butkowski et. al., 2019) evaluated positive or negative engagement as well as exposure to basic idyllic photographs or selfies. Nomophobia, a condition in which an individual is physically present but psychologically disengaged, may become prevalent as technology continues to permeate most aspects of people's lives. To the investigator's knowledge, there are limited Indian studies about nomophobia, despite the high adoption rate of mobile phones. Although several investigations attempt to shed light on the relationship between aggression and behavioral addictions, it has been noted that there are relatively few investigations that focus on the impact of nomophobia on aggression and body image satisfaction. Therefore, considering the prevalence of nomophobia among college students this study aims to investigate nomophobia's effect on body image satisfaction and aggression. In this context, the following research questions were formulated by the investigator,

1. What are the levels of nomophobia, body image satisfaction, and aggression in college students?
2. Does the gender of college students influence levels of nomophobia, body image satisfaction, and aggression?
3. Does there exists a significant correlation between the level of nomophobia in college students and the level of their body image satisfaction and aggression?
4. Does Nomophobia in college students predict levels of body image satisfaction and aggression?

The theoretical framework and concept development model is presented in the next section. The third section deals with the methodology and approach used by the investigator in this study. Section four deals with the collection and analysis of data along with the results. The last section is the discussion of findings along with theoretical, managerial, and research implications and conclusions.

Conceptual Framework

The originally developed mobile phone has evolved into the smartphone, which serves as a medium of communication as well as a data storage device, camera, music player, and gaming console. Although communication technology is indeed a crucial component of daily life, compulsive smartphone use can culminate in behavioral addictions. The UK's post office study in 2008, which was conducted by YouGov, an international research and analytics group organization is credited with the first use of the term nomophobia (Subravgoudar, 2021). The study's goal was to assess the likelihood that prolonged smartphone use would result in stress problems. According to the report, nearly 53% of participants were concerned about losing their phone, having their battery run out, or having no internet access. Additionally, 58% of men and 48% of women experienced mobile phone stress, while an additional 9% of people experienced stress even after turning their phones off. 55% of the study sample stated that their inability to stay in touch with their loved ones was the primary cause of their phobia ("Nomophobia is the fear of being out of mobile phone contact - and it's," 2012). In virtual reality, people seem to prefer indirect communication and are more transparent because they feel safer there. In many instances, acquiring confirmation through interpersonal communication results in excessive mobile phone use and dependence (Argumosa-Villar et.al., 2017). The contemporary transition of the digital era from real-world relationships and interactions to "social media" has begun to negatively affect the psychological well-being of adolescents (Manago,2015). Various studies have focused on the relationships between psychological traits and nomophobia (Bhattacharya et.al., 2019). Digital addiction has been linked to various psychological traits including anxiety, extroversion (the need for social interaction and communication), a lack of self-discipline, emotional instability, low self-esteem, and dearth of informal communication as well as demographic traits like age and sex (Ozdemir et al., 2018; Hong et al.,2012). It is shown that smartphone usage is quite a common phenomenon among adolescents, who pose high risks in terms of nomophobia, anxiety, and self-control (Kaplan & Gezgin, 2016). Nomophobia can lead to a loss of self-control (Tavolacci et al., 2015). Individuals having high levels of self-control achieved better grades, more satisfying relationships, and less anger and aggression s compared to individuals with low self-control (Tangney, et.al., 2008). Self-control is correlated to aggression. Students with low self-control are prone to problematic phone use and experience more psychological problems like higher levels of aggression and hostility because they are unable to control themselves (Servidio, 2021). Studies show that digital media consumption hurts body image (Myers & Crowther,2009). Heavy media consumption can cause body dissatisfaction and depression, not only in women but also in males (whose ideal is often less focused on becoming skinny and more focused on being muscular). Social media platforms like Instagram have a tonne of (apparently) real photos, and many of them show idealized body types. They place a lot of emphasis on physical beauty, and studies have shown that young people, especially those who are exposed to thin ideals, struggle with body dissatisfaction and feel pressure to look flawless on social media (Chua & Chang,2016). To summarise, based on the assumptions and findings of these previous studies, the investigator tried to depict the effect of nomophobia on body image satisfaction and aggression through a hypothesized theoretical model.

To provide more clarity on the relationships between variables, the following objectives were formulated,

1. To study the levels of nomophobia among college students.
2. To study the levels of body image satisfaction among college students.
3. To study the levels of aggression among college students.

4. To study the influence of gender variables on nomophobia, body image satisfaction, and aggression among college students.
5. To study the relationship between nomophobia and body image satisfaction among college students.
6. To study the relationship between nomophobia and aggression among college students.
7. To study whether Nomophobia is a predictor of Body image satisfaction and Aggression.

Based on the objectives formulated, the following hypotheses were formulated,

H01: There is no influence of gender variables on nomophobia, body image satisfaction, and aggression among college students.
H02: There exists no significant relationship between nomophobia and body image satisfaction among college students.
H03: No significant relationship exists between nomophobia and aggression among college students.
H04: Nomophobia is not a predictor of Body image satisfaction and Aggression.

Methods

Study design and participants

The data was collected from the individuals who were studying in colleges via the convenience sampling method and could be reached by communicating through social media platforms. The study group consisted of 52 individuals (females=32 (62%) and males=20(38%)) within the age bracket of 18 to 22 years. The investigator shared the Google forms on WhatsApp.

Questionnaires

Nomophobia Questionnaire (NMP-Q): It consists of a 20-item scale developed by Yildirim and Correia in 2015, scored on a seven-point Likert scale, with 1 = do not agree at all and 7 = strongly agree. The NMP-Q comprises four factors (Factor 1: not being able to communicate; Factor 2: losing connectedness; Factor 3: not being able to access information, and Factor 4: giving up convenience). Higher scores indicate higher nomophobia. The total score yielded four categories: no nomophobia (0- 20), mild nomophobia (21 - 59), moderate nomophobia (60 - 99), and severe nomophobia (100 - 140). The Cronbach's alpha for this scale was excellent ($\alpha = 0.948$) (Yildirim & Correia, 2015).

The Buss–Perry Aggression Questionnaire: The Buss–Perry Aggression Questionnaire was designed by Arnold H. Buss and Mark Perry, professors from the University of Texas at Austin in an article for the Journal of Personality and Social Psychology in 1992. The questionnaire consists of 29 items and focuses to examine four major domains of aggression: Physical Aggression (9 items), Verbal Aggression (5 items), Anger (7 items), and Hostility (8 items) to be answered on a 5-point Likert scale. The original version exhibits good psychometric properties, with Cronbach's alpha ranging from .72 to .85 for the four subscales and .89 for the total scale (Buss & Perry,1992).

Body Image Questionnaire: This scale measures cognitive, affective, and evaluative variables of an individual's concept of body image and reflects relatively time-stable physical aspects, rather than current physical conditions. The questionnaire consists of two subscales: Rejecting Body Image ($\alpha = 0.80$) and Vital Body Dynamics ($\alpha = 0.90$) with 10 items each, ranging from 1 = it does not apply to 5 = it applies. The scores of subscales are calculated by adding up the item values. The total score varies from 19 to 95; an individual scoring higher tend to have satisfaction with their own body (Koleck et. al., 2002).

Collection & Analysis of Data

The data was collected from the respondents by using google forms. Prior information about the study was given to them, and then data were collected from them voluntarily. The investigator distributed three questionnaires namely Nomophobia (NMP-Q), The Buss–Perry Aggression Questionnaire, and Body Image Questionnaire by communicating through google forms. The data obtained were analyzed with the Microsoft Excel 2016 and SPSS version 28 software package. The descriptive statistical analysis for the total scores of Nomophobia, Body Image, and Aggression was done to analyze the collected data. The calculated Skewness and Kurtosis values for the total scores of all three variables under study were found to be between -1.96 and +1.96 (Tabachnick & Fidell, 2007) which examined the normality distribution assumption. Thus, the data were considered to be normally distributed. The descriptive statistics for Nomophobia, Body Image Satisfaction, and Aggression are given in Table I. After examining assumptions of normality have been met, the parametric statistical test for Correlation Analysis was employed to derive the relationship between Nomophobia, Body Image Satisfaction, and Aggression. Also, regression analysis was done using the Curve estimation technique in SPSS version 28 to figure out whether the nomophobia variable affects body image satisfaction and aggression.

Results

What is the Nomophobia, Body Image Satisfaction, and Aggression levels of College Students?

Table 1 depicts the descriptive statistics for the levels of nomophobia, body image satisfaction, and aggression. The sample under study suffers from a moderate risk of nomophobia, with an overall average score of 91.38 (SD=22.352), which is close to the severe risk (100-140). The descriptive statistics for body image satisfaction show that the sample under study has a higher level of body image satisfaction, with an overall average score of 70.403 (SD=9.364). Lastly, results show that individuals suffer from moderate levels of aggression with an average score of 87.67 (SD=18.766).

Table1: Descriptive Statistics for Nomophobia, Body Image Satisfaction, and Aggression

Descriptive Statistics	Count	Min.	Max.	Range	Sum	Mean	S.D.	Variance	Kurtosis	Skewness
Nomophobia	52	34	132	98	4752	91.384615	22.35292133	499.653092	-0.19297298	-0.195947
Body Image	52	54	90	36	3661	70.403846	9.364638568	87.69645551	-0.48976957	0.23522
Aggression	52	51	134	83	4559	87.673077	18.76659648	352.1851433	0.339234389	0.361478

Also, it is observed that more than half of the population (56%) has a moderate risk of nomophobia, 36% have a severe risk, and just 8% suffer from a mild risk of nomophobia (Chart 1).

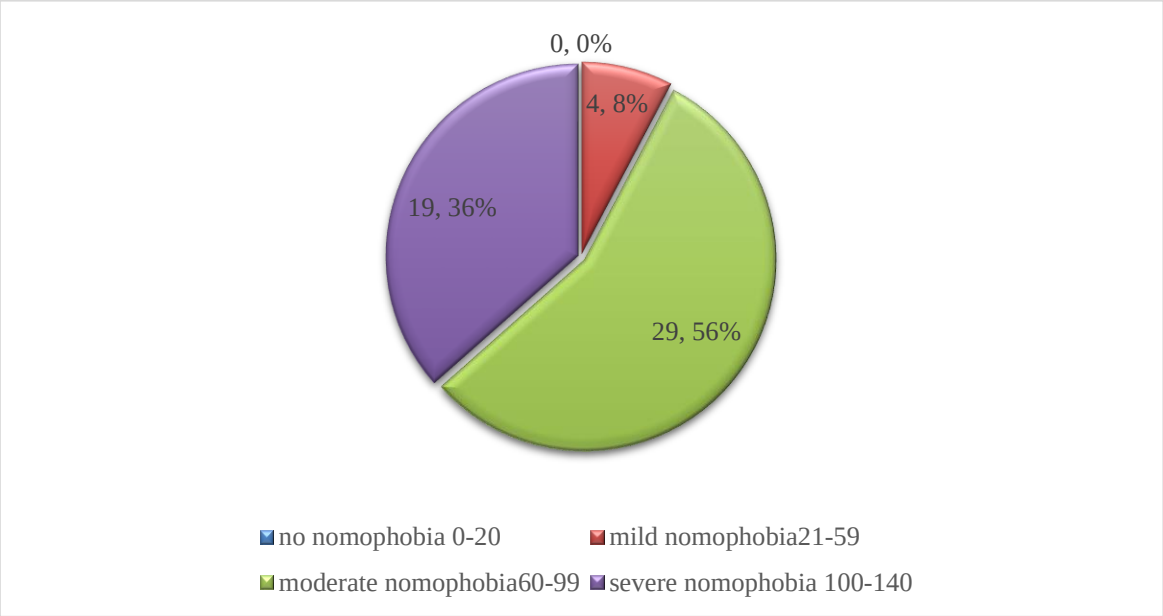

Chart 1: Frequency Distribution of Nomophobia Levels

Does the gender of college students influence levels of nomophobia, body image satisfaction, and aggression?

Table 2 consists of a mean comparison test (student t-test) to determine whether the gender variable influenced nomophobia levels, body image satisfaction, and four aspects of aggression. The results show that females have slightly lower levels of nomophobia with an average score of 88.4375 (SD= 24.256) as compared to males, with an average score of 96.1 (SD=18.524). Also, females have higher levels of body image satisfaction with an overall average of 71.625(SD=9.139) as compared to males, averaging 68.45(SD=9.621). Also, It is evident from the table that females show lower levels of aggression as compared to males (Mean_Physical aggression =22.843, SD_Physical aggression=5.61, Mean_verbal aggression =15.531, SD_verbal aggression=3.801, Mean_anger=20.031, SD_anger=5.133, Mean_hostility=26656, SD_hostility=6.046). At a 5 % level of significance, the calculated t values are less than the critical values for nomophobia, body image satisfaction, and aggression levels. Hence hypothesis H01 i.e., there is no significant influence of gender variables on nomophobia, body image satisfaction, and aggression levels are accepted.

Table 2: Statistical testing by gender

	MALES		FEMALES		TOTAL		T VALUE(5 %)
	MEAN	SD	MEAN	SD	MEAN	SD	
Nomophobia	96.1	18.52423732	88.4375	24.25660868	91.38461538	22.35292133	0.232725352
Body Image Satisfcation	68.45	9.621658682	71.625	9.139598354	70.40384615	9.364638568	0.237956971
Physical Aggression	26.5	7.857279561	22.84375	5.611677772	24.25	6.735550984	0.056009008
Verbal Aggression	17.25	3.891623934	15.53125	3.801395117	16.19230769	3.890856358	0.122276675
Anger	20.35	6.360031446	20.03125	5.133598216	20.15384615	5.577913783	0.843395734
Hostility	27.75	6.695442283	26.65625	6.046109786	27.07692308	6.261761181	0.555704126

Does a significant correlation exist between the level of nomophobia in college students and the level of their body image satisfaction and aggression?

Table 3 depicts the findings from the Pearson correlation coefficient technique analysis to determine the existence of a relationship between nomophobia, body image satisfaction, and the four major aspects of aggression: Physical Aggression, Verbal Aggression, Anger, and Hostility of college students. It is evident that there is a weak negative correlation between nomophobia levels and body image satisfaction (r=-0.1213) which means with the increase in nomophobia levels in college students, there is a decrease in body image satisfaction levels. Hence, the stated hypothesis H02 i.e., there exists no significant relationship between nomophobia and body image satisfaction among college students is rejected.

Also, there is a weak positive correlation between nomophobia levels and four aspects of aggression i.e. physical aggression (r=0.220), Verbal Aggression(r=0.2453), Anger(r=0.085), and Hostility(r=0.170). This means with the increase in nomophobia levels, aggression levels also increase. Results also show that there is a weak negative correlation between body image satisfaction and four aspects of aggression i.e. physical aggression (r= -0.1250), Verbal Aggression (r =-0.1356), Anger (r= -0.2072), and Hostility (r= -0.3058) which means with the decrease in body image satisfaction levels in college students, there is an increase in their aggression levels. According to the findings the stated hypothesis H03 i.e., there exists no significant relationship between nomophobia and aggression among college students is rejected.

Table 3: Correlation Matrix between Nomophobia, Body Image Satisfaction, and Aggression.

VARIABLES	Nomophobia	Body image satisfaction	Physical Aggression	Verbal Aggression	Anger	Hostility
Nomophobia	**1**					
Body image satisfaction	**-0.121310971**	**1**				
Physical Aggression	**0.22009446**	**-0.12504**	**1**			
Verbal Aggression	**0.245324339**	**-0.13563**	**0.56525702**	**1**		
Anger	**0.085223896**	**-0.20729**	**0.5798277**	**0.659045239**	**1**	
Hostility	**0.170551006**	**-0.30583**	**0.4644358**	**0.609419545**	**0.725527**	**1**

Does Nomophobia in college students predict levels of body image satisfaction and aggression?

Regression analysis was conducted using the Curve estimation technique in SPSS version 28 to demonstrate to what extent nomophobia levels predict body image satisfaction levels and aggression among college students. According to the results shown in Table 4, it is evident that the p-values (p= 0.392 & p=0.131) for Body Image Satisfaction and Aggression respectively are more than 0.05, indicating that Nomophobia is not a predictor of Body image satisfaction and Aggression. The results are not statistically significant. Hence, the stated hypothesis H04 i.e., Nomophobia is not a predictor of Body image satisfaction and Aggression is accepted.

Table 4: Results of Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
body image	-0.051	0.059	-0.121	-0.864	0.392
aggression	0.178	0.116	0.212	1.535	0.131
Body image satisfcation (r=0.121, r^2 =0.015, SEE=9.388 , F(1,50)=0.707), Aggression (r=0.212, r^2=0.045, SEE=18.522),F(1,50)=2.355) * Nomophobia is independent variable					

Discussions and Conclusion

The findings of the study demonstrated the relationship between nomophobia, which essentially refers to a crippling fear of living without mobile technology, of college students and their levels of body image satisfaction and aggression. The study found that the condition of nomophobia is prevalent among college students and they display moderate levels of nomophobia and aggression but higher levels of body image satisfaction. Females have lower levels of nomophobia and aggression as compared to their male counterparts but pose higher levels of body image satisfaction. Studies on nomophobia conducted in the past years have revealed conclusions related to the prevalence of nomophobia among college students (Gezgin et.al., 2018; Nuri et.al.,2021; Erdem et.al., 2016). Another finding from the correlational matrix in this study shows that there exists a significant yet negative weak correlation between nomophobia and body image satisfaction and a positive weak correlation with aggression. Previous academic literature has revealed that nomophobia people tend to show traits of aggression (Babayığıt et al., 2019). This study highlights that nomophobia has become an integral part of young people's life. Upon evaluation of all the gathered data for this study, college students are said to be at risk of experiencing more nomophobia as their levels of perceived aggression increase. Individuals who are more depressed tend to use their smartphones more to neglect negative emotions which eventually causes them to experience more depression, irritability, and stress (Elhai et.al.,2017). A study undertaken by

Northup (2013) reported alleged relationships to exist between media use and aggression, sexual attitudes, behaviors, and body image. Also, literature shows that social media usage can detrimentally affect young adults' body image and eating habits. Since an increase in digital addiction brings a rise in nomophobia risk (Gezgin Cakir & Yildirim, 2018), it is evident that an increase in nomophobia results in a decrease in body image satisfaction. The findings in the study though indicate that there exists a weak correlation between nomophobia and body image satisfaction and perceived aggression, still, it is seen from the regression analysis that nomophobia does not act as the significant predictor of body image satisfaction levels and aggression levels in college students.

The findings of this study substantially contribute to the understanding of nomophobia and aggressive behavior but still come with a few limitations. Results also suggest that guided intervention could help in decreasing the levels of nomophobia which in turn will result in increased satisfaction with their body image and also lower levels of aggression. Since this study was conducted on a limited sample, working on larger samples in future studies will be able to develop more in-depth insights into the field. Only college students within the age bracket of 18 to 22 years were included in this study, studies with different age groups and other geographical regions will provide a new dimension in the field. Such comparisons will help in providing a better understanding of the subject. Finally, it can be said that studies that can be conducted with other variables besides body image satisfaction and aggression in the nomophobia characteristics of college students will enrich the academic literature.

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