

Nomophobia and Its Relationship With Alexithymia and General Well-Being Among Undergraduate University Students: A Descriptive Co-Relational Study

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ABSTRACT

BACKGROUND: In the mobile phone era we are in, its dependence among students has increased. The addiction of students on their smartphones has revealed the concept of Nomophobia. It can affect the ability to express their emotions which is considered as Alexithymia. Excessive use can also affect the general well-being. The relationship between them is complex and vary widely among individuals.

AIM: To assess the Nomophobia and its relationship with Alexithymia and General Well-being among undergraduate students.

METHODS: A descriptive co-relational design was opted. The data was collected from 319 undergraduate students using non-probability (Convenience) Sampling Technique. Data was collected using Nomophobia Questionnaire (NMP-Q), Toronto Alexithymia Scale (TAS-20) and General Well-being scale.

RESULTS: Majority of the students 59.2% were moderately Nomophobic and 22.5% were severely Nomophobic whereas only 17.7% were mildly Nomophobic. Nomophobia had significant positive co-relation with Alexithymia and negative correlation with General Well-being.

CONCLUSION: The results of the study indicate the increasing prevalence of Nomophobia among students. There is an urgent need of developing strategies towards prevention, early identification and timely management of Nomophobia and Alexithymia and hence promoting positive general well-being.

KEY WORDS: Nomophobia, Alexithymia, General Wellbeing, Under-graduate students.

INTRODUCTION

Mobile phones have become a vital part of our lifestyle because of their numerous benefits. (Qutishata M, 2020). With technology, students and parents have a variety of learning tools at their fingertips which provide them remarkable resources (Vedantu, 2023). The mobile phones have made work, study, and life, in general, more convenient, but it is also the root of addiction (Hongge L, 2022). When smartphones users see it as their extended selves, they get attached to the devices intensively and this may result in numerous physical, social, personal and psychological problems (Panova T, 2018).

Nomophobia is one of the psychological problems related to extensive utilization of mobile phones resulting in fear of dysconnectivity from mobile phones (Qutishata M, 2020). Individuals suffering from Nomophobia can try to protect themselves from social gatherings or interactions and feel shy while interacting or basically become introverts. Such individuals find themselves more spacious, comfortable, content, safer, or more thriving when they use electronic connections as compared to the interaction with the natural world encircling them. The Nomophobia is mostly prevalent amid the youngsters and its incidence can be found in both developed and developing countries it ranges between 77% and 99%. (Humood & Altooq N, 2021).

There can be another other side effect of mobile phones like Alexithymia. Alexithymia is a personality construct characterized most notably by a difficulty in identifying and expressing feelings (Gündoğmuş I, 2021). Individuals with alexithymia can use the internet to manage their difficulty in managing, controlling and defining emotions. Internet usage has become easier and more accessible and convenient with the rapid development of smartphones. Therefore, the usage of smartphones and even addiction may be higher in individuals with alexithymia (Gao T, 2018). Considering the statistic in general, the prevalence of Alexithymia is quite higher in adolescents (18%) as compared to adults (8–10%) including increased rates in early adolescence, marking down to adult levels by late adolescents (van der Crujisen R, 2019). Alexithymia and Nomophobia both affect the General Well-being of an individual and shows symptoms like tachycardia, anxiety increased blood pressure, dyspnea, nausea, wooziness, depression, discomfort, quivering, phobia, and panic attacks (Hogeveen J, 2021). Under the influence of Nomophobia and Alexithymia, there's a significant change in the lives of people owing to adverse effects on health, leading to harmful physical, psychological and social effects. Having the convenience of using the mobile phones, it gives students an edge and therefore students being the most vulnerable population in the society is likely to be affected (Rodríguez-García AM, 2020).

Nomophobia in relationship to Alexithymia and General Well-being is complex and can vary from person to person. Excessive smartphone use, driven by Nomophobia, can have negative effects on well-being such as devoid of

physical activity, sleep disturbances, social exclusion, and increased stress and anxiety. However, the impact on well-being also depends on how individuals use their smartphones. For some, smartphones can enhance well-being by facilitating communication, access to information, and entertainment (Wacks Y, 2021).

The access of mobile phones is increasing day by day in the student's life thus making them susceptible to have Nomophobia and Alexithymia and thus affecting the general well-being. Individual might have a strong desire to spend more time with smart phones and this may result in addiction because the use of smart phones cause a distance from the problems in real life. Therefore, it is imperative to determine the extent of these variables such as nomophobia, alexithymia, general well-being and their relationship amid the youngsters (Thomée S., 2018).

The relationship between nomophobia, alexithymia, and general well-being is complex and can vary widely among individuals. It's essential to being aware of smartphone usage pattern and its impact on one's physical and psychological well-being. In the digital age comprehending the righteous approach, positive reinforcement and to seek assistance whenever required adds up to a haleness and more fulfilling life (Abi-Jaoude E, 2020).

MATERIALS & METHODS:

A descriptive correlational study was conducted on 316 undergraduate students studying in a private university of North India. Based on the 38 % prevalence of severe nomophobia among university students (Jilisha., 2019) and at an absolute precision of 6%, and 95% confidence level, the sample size was calculated as 252. Considering a non-response rate of 20 %, the sample size was estimated to be 300. The actual sample achieved at the end of the data collection was 319. The approval to conduct the present study was taken from Institutional Research Committee. Administrative approval was taken from Deans/Heads/Principals of various colleges of university and informed consent was taken from the students.

The data was collected using Nomophobia Questionnaire (NMP-Q), Toronto Alexithymia Scale (TAS-20), General Well-being scale. Nomophobia Questionnaire (NMP-Q) comprised of 20 items including four main dimensions of nomophobia: not being able to communicate (6 items), losing connectedness (5 items), not being able to access information (4 items), and giving up convenience (5 items). The total score varied from 20 to 140 and was categorized into absent (20), mild (21–59), moderate (60–99), and severe (100–140) nomophobia. (Yildirim, 2015). The general internal consistency of the NMP-Q has been stated to be very good (Cronbach's alpha = 0.945). (Yildirim C, 2014)

General well-being scale assessed subjective feelings of psychological well-being and distress. The scale assesses how the individual feels about his/her & inner personal state during the last month. It includes positive and negative questions across 6 dimensions: well-being, self-control, vitality, depression, anxiety, and general health. Total score varied from 0-110. The general well-being was categorized into 7 levels: positive well-being (81-110); low positive (16-80); marginal (71-75); stress problem (56-70); distress (41-55); serious (26-40); severe (0-25). Lower scores reflect distress and higher scores reflect positive well-being. (Fazio, A. F. (1977).

The Toronto Alexithymia Scale (TAS-20) is a 20-item questionnaire that contains 03 subscales: 7 items on difficulty in identifying feelings; 5 items on difficulty in describing feelings and 8 items on externally oriented thinking. Each item is scored on a five -point, Likert-type scale (1 = strongly disagree; 5 = strongly agree), and 05 items are reverse-scored. Total scores could vary from 20-100, with higher scores representing greater impairment. The scores were categorized as non-alexithymia (≤ 51); possible alexithymia (52-60) & alexithymia (≥ 61). (Bagby R. M., 1994)

The undergraduate students having smart phones, accessibility during data collection time and consented to be a part of study were included in the study. The data was collected using a Google form. Permission from the Principals/ Deans of different colleges of Chitkara University was taken in order to collect the data from the students. The students from College of Nursing, School of Pharmacy, Computer Science and Engineering, BCA were selected through convenience sampling technique. The data was collected using google form (<https://forms.gle/3MfvQoECTUId7bcB9>) shared with the students through WhatsApp and Email. The link of the form was sent to students after explaining them the purpose of the study and taking their consent. The students were asked to submit the form within 7 days. Reminder emails to fill the form were sent to those who didn't return the form within 7 days. The data collection was done in the month of August 2022. The total responses were received from 319 students in which 03 responses were incomplete Therefore, data of 316 students was included in the analysis.

RESULTS

The data was exported to SPSS sheet from Microsoft Excel sheet. The prevalence of Nomophobia, Alexithymia and General well-being was described using Frequency and percentage distribution. Chi-Square and Pearson correlation was used to assess the association and relationships between the study variables. A p value ≤ 0.05 was considered significant for the study.

Table 1 shows that the mean age of students was 19.55 ± 1.21 years. Majority of the students i.e 261(82.6%) were in the age group of 18-20 years and rest of the students 55(17.4%) belonged to the age group of 20-28 years. The highest number of students belonged to Department of Computer Science and Engineering (39.6%) followed by Pharmacy 79 (25.0%); Nursing 73 (23.1%), BCA 39 (12.3%). Majority of the students were from 2nd year (62.0%) followed by 3rd year (30.1%) and 4th year (7.9%) of the undergraduate program.

More than half of the students i.e 181(57.3%) spent less than 3 hours per day on smartphone and 135 (42.7%) students spent more than 3 hours per day on smartphone.

Majority of students i.e. 187 (59.2%) had moderate level of Nomophobia followed by 71(22.5%) who had a severe level of Nomophobia; 56(17.7%) with mild level of Nomophobia; 2(0.6%) students had no Nomophobia. Majority of students i.e 165(52.2%) had possible Alexithymia followed by 84(26.6%) of students who had an Alexithymia and 67(21.2%) with non-alexithymia.(Table 2)

Majority of the students i.e 152(48.1%) had stress problem (56-70) followed by 73(23.1%) students had Marginal General Well-being (71-75) and 33(10.4%) students had severe General Well-being (0-25) followed by 24(7.6%) of students having distress (41-55); 20(6.3%) students had serious General Well-being (26-40); 13(4.1%) students had low positive Wellbeing (76-80) and only 1(0.3%) students had positive Well-being (81-100). (Table 2)

The computed 'r' value of Nomophobia and Alexithymia was 0.537 which shows moderate positive correlation and found to be statistically highly significant ($p=0.003$). Therefore, it can be inferred that Nomophobia is significantly correlated with the Alexithymia & vice versa. The students who had high level of Alexithymia also had high level of Nomophobia and vice versa. The computer 'r' value between the Nomophobia and General Well Being was -0.168, which shows weak negative correlation and found to be statistically highly significant ($p=0.003$). Therefore, it can be inferred that Nomophobia is significantly correlated with the General Well-being and vice versa. The students who had the high level of Nomophobia had low level of general well-being and vice versa.

The association of Nomophobia with selected socio-demographic variables like age, department, year of study, monthly family income, duration of smartphone use (in years), use of mobile data plan and number of Apps in phone among the students was found to be non-significant. However, average time spend on smartphone (per day) and average time of checking smartphone (per day) was found to be associated with Nomophobia.

The Alexithymia was not found to be associated with the student's age, department, year of study, monthly family income, duration of smartphone use (in years), use of mobile data plan, average time spend on smartphone (per day), average time of checking smartphone (per day) and number of Apps in phone.

A significant association of General Well-being with number of Apps in smartphone was found but not with age, department, year of study, monthly family income, duration of smartphone use (in years), use of mobile data plan, average time spend on smartphone (per day), average time spend on smartphone (per day), average time of checking smartphone (per day).

DISCUSSION

Nomophobia is one of the mental problems related to high rate of using mobile phones. It is the anxiety induced when there is no mobile phone contact for even a small duration or couple of minutes. Individuals with Nomophobia and Alexithymia are not interested in social interaction because of increased interest being shown in mobile phones, which makes them more gratified, prudent and thriving if we equate with socialization (S., 2020).

In present study, majority of students (59.2%) had moderate level of Nomophobia, 22.5% had severe and 17.7% had mild level of Nomophobia whereas 0.6% of students had no Nomophobia. The findings are congruent with a study that was carried out in a government institution in North India in a medical college. The study results revealed that 67.2% students had moderate Nomophobia whereas severe Nomophobia was present in 17.3% students and 15.5% of students showed mild Nomophobia results (Bartwal J, 2020). In another Indian study, most of the university students were nomophobic; 56.5% had moderate nomophobia and 35.4% students had severe nomophobia whereas only 8.1% had mild nomophobia. (Ashvneet K., 2021).

More than half of students 165(52.2%) were having possible Alexithymia followed by 84(26.6%) students who had Alexithymia and 21.2% with Non-Alexithymia. The findings are congruent with cross sectional analytic study among the medical students in Saudi Arabia in which 48(13.8%) have no Alexithymia, 129(37.2%) have possible Alexithymia and 170 (49.0%) were suffering from Alexithymia (Alzahrani SH., 2020).

In present study, the average time spent on smartphone was significantly correlated with Nomophobia. The findings are congruent with another study on the students studying in TMCH Chennai in which a significant co-relation between Nomophobia and average time spent on smartphone was detected (Anusuya SG., 2021).

The students who had the high level of Nomophobia had low level of general well-being and vice versa. A negative correlation between Nomophobia and quality of life was reported in a study. (Sharma M.,2019) Frequent mobile

phone users report health problems such as tiredness, stress, headache, anxiety, concentration difficulties, sleep troubles, and poorer perceived health than less frequent mobile phone users (Söderqvist F., 2008).

A significant positive relationship between alexithymia and nomophobia was found in the present study which is consistent with other studies. (Mei S., 2018). People with alexithymia may use the Internet to express their emotional state as a compensatory, nonverbal approach. (Nemiah., 1976)

The current study was a cross-sectional study based on a self-administered tools which is not sufficient to draw an ultimate conclusion. In addition, only one university was involved in this study, which could affect the generalizability of the findings. Therefore, a large scale and multisite study based on longitudinal design can be conducted to rule out alexithymia as a predictor of Nomophobia or vice versa. The longitudinal study design will also facilitate the identification of others factors contributing in the rising prevalence of Nomophobia and Alexithymia among the young generation.

CONCLUSION

The findings of the present study indicate the growing dependency of youth on mobile phones and the close linkage of nomophobia and the alexithymia and general well-being. Alexithymia may be contributor in the increasing prevalence of nomophobia and leading to decline in general well being among the university students. There may be other confounding variables affecting these parameters. Nomophobia was present in all the students to different levels so as the Alexithymia. Majority of the students had moderate level of Nomophobia, possible Alexithymia and stress problems. Thus, preventive and promotive steps should be taken to reduce the adverse effects associated with extreme use of mobile phones. Students must be screened regularly.

CONFLICT OF INTEREST

There is no conflict of interest

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REFERENCES

1. Abi-Jaoude E. Naylor K. T., & Pignatiello A. (2020). Smartphones, social media use and youth mental health. CMAJ: Canadian Medical Association journal, 192(6), E136–E141. <https://doi.org/10.1503/cmaj.190434>
2. Alzahrani S. H., Coumaravelou, S., Mahmoud I., Beshawri J., & Algethami M. (2020). Prevalence of alexithymia and associated factors among medical students at King Abdulaziz University: a cross-sectional study. Annals of Saudi medicine, 40(1), 55–62. <https://doi.org/10.5144/0256-4947.2020.55>
3. Anusuya S.G., Dinah H., Arumugam B., Karthik R.C., Annamalai R., Mani E.A. (2021). A Cross-sectional Study on Nomophobia among Undergraduate Medical Students in Chennai, India. Journal of Clinical and Diagnostic Research, 15(12), 9-12. <http://dx.doi.org/10.7860/JCDR/2021/51757.15772>
4. Ashvneet K., Alvin A., Aaiena S. & Vinay K. (2021). Nomophobia and social interaction anxiety among university students. International Journal of Africa Nursing, 15, 1-4. https://www.researchgate.net/publication/354015542_Nomophobia_and_Social_Interaction_Anxiety_among_University_Students
5. Bartwal J. & Nath B. (2020). Evaluation of nomophobia among medical students using smartphone in north India. Medical Journal Armed Forces India, 76, 451-455. <http://dx.doi.org/10.1016/j.mjafi.2019.03.001>
6. Busch P.A. & McCarthy S. (2020). Antecedents and consequences of problematic smartphone use: A systematic literature review of an emerging research area. Computers in Human Behavior, 114, 1-47. <https://doi.org/10.1016/j.chb.2020.106414>
7. Bagby R. M., Parker J. D., & Taylor G. J. (1994). The twenty-item Toronto Alexithymia Scale--I. Item selection and cross-validation of the factor structure. Journal of psychosomatic research, 38(1), 23–32. [https://doi.org/10.1016/0022-3999\(94\)90005-1](https://doi.org/10.1016/0022-3999(94)90005-1)
8. Fazio., A. F. (1977). A concurrent validation study of the NCHS General Well-Being Schedule. Hyattsville, Maryland: U.S. Department of Health, Education and Welfare, National Center for Health Statistics.
9. Gao T., Li J., Zhang H., Gao J., Kong Y., Hu Y. et al. (2018). The influence of alexithymia on mobile phone addiction: The role of depression, anxiety and stress. Journal of affective disorders, 225, 761–766. <https://doi.org/10.1016/j.jad.2017.08.020>

10. G. Jilisha, J. Venkatachalam, V. Menon, J.J. Olickal. Nomophobia: A mixed-methods study on prevalence, associated factors, and perception among college students in Puducherry, India. *Indian Journal of Psychological Medicine*, 41 (6) (2019), pp. 541-548, 10.4103/IJPSYM.IJPSYM_130_19
11. Gündoğmuş İ., Aydın M. S., & Algül A. (2021). The Relationship of Smartphone Addiction and Alexithymia. *Psychiatry investigation*, 18(9), 841–849. <https://doi.org/10.30773/pi.2021.0072>
12. Hogeveen J., & Grafman J. (2021). Alexithymia. *Handbook of clinical neurology*, 183, 47–62. <https://doi.org/10.1016/B978-0-12-822290-4.00004-9>
13. Hongge L., Yanli Z., Hong J., Hong W., Xiujun Z., Shuping T. (2022). Effect of Alexithymia on Internet Addiction Among College Students: The Mediating Role of Metacognition belief. *Frontiers in Psychology*, 12,1-12. <https://doi.org/10.3389/fpsyg.2021.788458>
14. Humood A., Altooq N., Altamimi A., Husni M., Almoosawi H. et al. (2021). The Prevalence of Nomophobia by Population and by Research Tool: A Systematic Review, Meta-Analysis, and Meta-Regression. *Psych*, 3(2), 249-258. <https://doi.org/10.3390/psych5040075>
15. OECD (2016), *Innovating Education and Educating for Innovation: The Power of Digital Technologies and Skills*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264265097-en>
16. Mei, S., Xu, G., Gao, T. et al. The relationship between college students' alexithymia and mobile phone addiction: Testing mediation and moderation effects. *BMC Psychiatry* **18**, 329 (2018). <https://doi.org/10.1186/s12888-018-1891-8>
17. National Library of Medicine [Internet]. Cited Form: General Well-Being Schedule-18 item [NHANES], 2023. Available from: <https://cde.nlm.nih.gov/formView?tinyId=YKER84OKU>
18. Nemiah JC, Freyberger H, Sifneos P. Alexithymia: A view of the psychosomatic process. *Mod Trends Psychosom Med*. 1976;3:430–9.
19. Panova T. and Carbonell X. (2018). Is smartphone addiction really an addiction?. *Journal of behavioral addictions*, 7(2), 252–259. <https://doi.org/10.1556/2006.7.2018.49>
20. Qutishata M., Lazarusa E.R., Razmyb A.M., Packianathan S.B. (2020). University students' nomophobia prevalence, socio-demographic factors and relationship with academic performance at a University in Oman. *International Journal of Africa Nursing Science*, 13, 1-6. <https://doi.org/10.1016/j.ijans.2020.100206>
21. Rodríguez-García A. M., Moreno-Guerrero A. J., & López Belmonte J. (2020). Nomophobia: An Individual's Growing Fear of Being without a Smartphone-A Systematic Literature Review. *International journal of environmental research and public health*, 17(2),580. <https://doi.org/10.3390/ijerph17020580>
22. Söderqvist, F., Carlberg, M., & Hardell, L. (2008). Use of wireless telephones and self-reported health symptoms: a population-based study among Swedish adolescents aged 15-19 years. *Environmental health : a global access science source*, 7, 18. <https://doi.org/10.1186/1476-069X-7-18>
23. Sharma, M., Amandeep, Mathur, D. M., & Jeenger, J. (2019). Nomophobia and its relationship with depression, anxiety, and quality of life in adolescents. *Industrial psychiatry journal*, 28(2), 231–236. https://doi.org/10.4103/ipj.ipj_60_18
24. Thomée S., Härenstam A. & Hagber, M. (2011). Mobile phone use and stress, sleep disturbances, and symptoms of depression among young adults - a prospective cohort study. *BMC Public Health* , 11 (66) 1-11. <https://doi.org/10.1186/1471-2458-11-66>
25. Van Der Crujisen R., Murphy J., & Bird G. (2019). Alexithymic traits can explain the association between puberty and symptoms of depression and anxiety in adolescent females. *PloS one*, 14(1), e0210519. <https://doi.org/10.1371/journal.pone.0210519>
26. Vedantu.Technology. Essay [Internet]. Cited 2023 October 30. Available from: <https://www.vedantu.com/english/technology-essay>
27. Wacks Y., & Weinstein A. M. (2021). Excessive Smartphone Use Is Associated With Health Problems in Adolescents and Young Adults. *Frontiers in psychiatry*, 12, 669042. <https://doi.org/10.3389/fpsyg.2021.669042>
28. Yildirim C. Exploring the dimensions of nomophobia: Developing and validating a questionnaire using mixed methods research [dissertation] Iowa State University. 2014 [Google Scholar][Ref list]
29. Yildirim C., & Correia A. P. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Computers in Human Behavior*, 49, 130-137. <http://dx.doi.org/10.1016/j.chb.2015.02.059>

**Table 1: Distribution of Social-demographic variables of students
N=316**

Socio-demographic Variables	Frequency (f)	Percentage (%)
Gender		
• Male	189	59.8
• Female	127	40.2
Age (in years) (Mean $\pm$ SD)	19.55 $\pm$ 1.219♦	
• 18-20	261	82.6
• 20-28	55	17.4
Department		
• Computer Science and Engineering	125	39.6
• Nursing	73	23.1
• Pharmacy	79	25.0
• BCA	39	12.3
Year of study		
• Second	196	62.0
• Third	95	30.1
• Fourth	25	7.9
Average time spend on smartphone (per day)		
• >3 hours	135	42.7
• <3 hours	181	57.3

♦ Mean age of the students

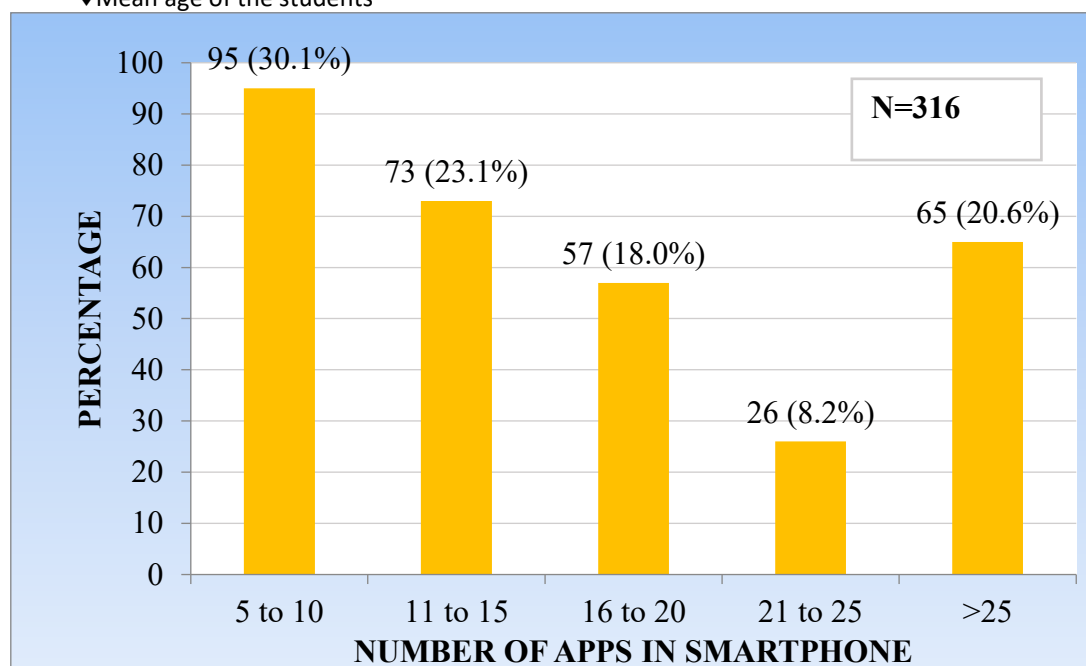


Figure 1: Depicts the students using number of apps in their smartphones according to the frequency and percentage distribution

Table 2: Distribution of Level of Nomophobia, Alexithymia and General Well-Being

N=316			
	Range of score	Frequency(f)	Percentage (%)
Level of Nomophobia			
Absent	0 – 20	2	0.6
Mild	21 – 59	56	17.7
Moderate	60 – 99	187	59.2
Severe	100 – 140	71	22.5
Level of Alexithymia			
Non Alexithymia	$\leq$ 51	67	21.2

Possible Alexithymia	52 – 60	165	52.2
Alexithymia	≥61	84	26.6
General Well being			
Positive well being	81 – 110	1	0.3
Low positive	76 – 80	13	4.1
Marginal	71 – 75	73	23.1
Stress problem	56 – 70	152	48.1
Distress	41 – 55	24	7.6
Serious	26 – 40	20	6.3
Severe	0 – 25	33	10.4

**Table 3: Coefficient of correlation between Nomophobia, Alexithymia and General Well Being of Students
N=316**

Correlation	Alexithymia r(p)	General Well-being r(p)
Nomophobia	0.537 (0.001)	-0.168 (0.003)

* (p≤0.05)