

Textaphrenia, anxiety and sleep disturbance in teenagers

Humaira Nawaz, Rabia Jameel

Abstract

Objective: To explore and predict the association among textaphrenia, anxiety and sleep disturbance.

Method: The cross-sectional, correlational study was conducted at Riphah Institute of Clinical and Professional Psychology, Riphah International University, Lahore, Pakistan, from February to November 2022, and comprised teenagers aged 15-17 years of both genders living in Mansehra, Abbottabad and Haripur cities. Data was collected online using a demographic sheet, Survey for Assessing Textaphrenia, Generalised Anxiety Disorder and Chronic Sleep Reduction Questionnaire. Data was analysed using SPSS21.

Results: Of the 1,000 participants, 500(50%) each were boys and girls. The overall mean age was 16.49 ± 0.835 years. Textaphrenia, anxiety and sleep disturbance had significant positive correlation ($p < 0.01$), while textaphrenia was also a significant predictor of anxiety and sleep disturbance ($p < 0.05$). Boys had a high level of textaphrenia, anxiety and sleep disturbance compared to girls ($p < 0.05$).

Conclusion: Textaphrenia was found to have a significant relationship with, and could predict, anxiety and sleep disturbance. There was a high prevalence of textaphrenia, anxiety and sleep issues in boys as compared to girls.

Keywords: Textaphrenia, Anxiety, Chronic sleep reduction, Teenagers. (JPMA 76: 1891; 2026)

DOI: <https://doi.org/10.47391/JPMA.20283>

Introduction

Smartphones have become an indispensable part of human lives and their use for text messaging has tremendously increased over the decades.¹ Smartphone ownership is increasing in both high-income and low-income countries due to its versatility, easy accessibility and usage.² According to estimation, 83.7% of the world's population has smartphones with young adults and teenagers as its top users and owners.³ Teenagers are individuals aged 13-19 years, also known as adolescents.⁴ There are 32.5 million smartphone users in Pakistan.⁵ While they have made life easy, excessive dependence on smartphones can lead to the newly emerging disorder of textaphrenia that is likely to become a pandemic of the modern era.⁶ The feeling that a text message might have been received while in reality there is no text message is known as textaphrenia.⁷ Individuals having this problem constantly check their phones, believing they have heard a text message tone or felt the phone's vibration, whereas in reality, no such thing has happened.⁸ Intemperate use of smartphones can bring physical, psychological and behavioural problems, including rigidity, muscle pain, vision difficulties, auditory and tactile illusions, stress, depression, anxiety, insomnia, and trouble in personal,

family and professional life.⁹

Nowadays, anxiety symptoms appear in typical behaviours due to increasing online interaction, especially through text messages.¹⁰ Individuals who spend more time on social media platforms tend to report anxiety-related symptoms.¹¹ Recurrent worry, which the users are unable to control, accompanied by physical or cognitive symptoms, like restlessness, fatigue, irritability, soreness and sleeping difficulties, is called anxiety.¹² Mental health professionals have reported frequent cases of youngsters with anxiety around texting, describing sweaty palms and heart racing with obsessive thoughts.¹³ The anxiety of not receiving any text, not being able to send any, and responding immediately to text messages is the most common.¹⁴ Evidence suggests that the immense use of smartphones may have the worst consequences together with compulsive behaviours, depression, high-level anxiety, and poor sleep quality.¹²

Sleep is a basic need, and is fundamental to physical, emotional and mental wellbeing. Sound sleep is mandatory for a healthy life. It is a natural process for renewed energy, general restoration and development of mind and body for everyday challenges. The best duration of sleep for adolescents aged 13-19 years is considered 8-10 hours a day.¹⁵ However, sleep patterns, routines, quality and timings have changed due to alterations in modern lifestyle.¹⁶ The use of smartphones before going to bed and even after lights-out has become a common habit of young adults. This unhealthy habit has caused insufficient sleep

Riphah Institute of Clinical and Professional Psychology, Riphah International University, Lahore, Pakistan.

Correspondence: Humaira Nawaz. e-mail: humairanawazkhan85@gmail.com
ORCID ID: 0009-0002-6793-4935

Submission completed: 07-11-2024 **1st Revision received:** 02-05-2025

Acceptance: 24-08-2026

Last Revision received: 21-08-2026

as it disturbs the circadian clock.¹⁷ Sleep disturbance in the form of loss, restriction or disorder negatively affects human health.¹⁸ Various studies have proved that sleep deprivation leads to a poor immune system, hypertension, hyperglycaemia, anxiety, depression, poor attention and concentration, increased risk of suicide, cognitive impairments, anger and confusion.¹⁹

The current study was planned to figure out the association among textaphrenia, anxiety and sleep disturbance in teenagers, and to explore if there is a gender difference in this context.

Subjects and Methods

The cross-sectional, correlational study was conducted at Riphah Institute of Clinical and Professional Psychology, Riphah International University, Lahore, Pakistan, from February to November 2022. After approval from the institutional ethics review committee, the sample size was determined using G*Power.²⁰ The sample was raised using non-probability snowball sampling technique. Those included were teenagers aged 15-17 years of both genders living in Mansehra, Abbottabad and Haripur cities of the Khyber Pakhtunkhwa (KP) province. Gender representation was actively recorded during data collection and was discontinued once the required data was reached to achieve equal distribution. Participants who owned at least one personal mobile phone, and were able to read English could participate in the survey. Individuals with a diagnosed psychological disorder or physical disability were not considered.

The participants were approached via an online Google Form. Firstly, the parents were approached and requested to share the link with their children. After getting parents' consent, the participants were required to follow the link to access the survey home page which carried the details of the study, minimum age, and institutional affiliations. Before the beginning of the study, the participants were informed that their participation would be kept confidential.

Data was collected using a self-designed demographic sheet containing age, city, education, institution, family, socioeconomic status (SES) and employment status. Some questions related to the use of smartphones were also added.

The Survey for Assessing Textaphrenia (SAT)²¹ was used to assess people's perceptions of text messages. It is a six-point Likert Scale, ranging from 6 = extremely agree to 1 = extremely disagree, with a total of 17 items. The higher scores show more dependence, while lower scores indicate lower dependence on text messages. The Cronbach alpha

reliability of the scale is 0.75, while in the present study, it was 0.88.

The Generalised Anxiety Disorder-7 (GAD-7)²² was used to assess the anxiety level. It has seven items and scores are recorded on a four-point Likert Scale, ranging 0-3. Levels are categorised as mild, moderate and severe with cut-off scores. High scores represent a high level of anxiety. The scale has good test-retest reliability (Cronbach alpha = 0.83), while in the current study, Cronbach alpha was 0.79.

The Chronic Sleep Reduction Questionnaire (CSRQ)²³ was used to measure insufficient or poor sleep. It is a three-point Likert Scale, ranging from 1 = no and 2 = sometimes to 3 = yes, and high scores signify more chronic reduction, and low scores imply less chronic sleep reduction. It comprises a total of 20 items across four subscales: shortage of sleep, irritation, loss of energy, and sleepiness. Cronbach alpha of the scale is 0.84, whereas in the present study, it was 0.91.

Data was analysed using SPSS 21. Prior to analysis, all assumptions of parametric tests were verified by using normality test, p-p plots, q-q plots, Kolmogorov-Simrnov test and homogeneity of variance test. For descriptive statistics, mean±standard deviation, or frequencies and percentages were used as appropriate. In inferential statistics, Pearson product moment correlation, multiple regression, and independent sample t-test were used. $P < 0.05$ was considered significant.

Results

Of the 1,000 subjects, 500(50%) each were boys and girls. The overall mean age was 16.49 ± 0.835 years. Most of the subjects 610(61%) had completed FA/F.Sc, 110(11%) were in university and 280 (28%) were in school. The majority of the participants 517(51.7%) were part of a nuclear family system, and 483(48.3%) were part of a joint family system. A large number of individuals 785(78.5%) belonged had middle SES, 164(16.4%) had lower SES and 51(5.1%) belonged to the upper class. The responses from urban people totalled 589(58.9%) while 411(41.1%) belonged to rural areas. A large number of participants 808(80.8%) were unemployed, 97(9.7%) were employed (doing home tutoring) and 95(9.5%) were self-employed, including helping in family business.

Textaphrenia had a significant positive relationship with anxiety and chronic sleep reduction (Table 1). Anxiety was significantly positively related to chronic sleep reduction (Table 1).

The R^2 value of 0.47 revealed that textaphrenia explained 47% variance in generalised anxiety with $F(1,998)=278.01$, $p < 0.05$. Textaphrenia was a positive predictor of anxiety

Table-1: Inter-correlation among textaphrenia, anxiety, and chronic sleep reduction.

Variables	1	2	3	Mean±SD
SAT	-	0.467**	0.666**	79.91±12.81
GAD	-	-	0.522**	11.24±4.3
CSRQ	-	-	-	49.29±8.79

** $p < 0.01$, SAT: Survey for Assessing Textaphrenia, GAD: Generalised Anxiety Disorder, CSRQ: Chronic Sleep Reduction Questionnaire, M: Mean, SD: Standard deviation.

Table-2: Regression Coefficient of textaphrenia on anxiety and chronic sleep reduction.

Variables	B	SE	t-test	p-value	95% C.I
Constant	-1.37	0.77	-1.79	0.07	[-2.88, .13]
Textaphrenia	0.16	0.01	16.67	0.00	[0.14, .18]
Constant	12.79	1.31	9.75	-	[10.21, 15.36]
Textaphrenia	0.46	0.02	28.19	-	[0.43, .49]

* $p < 0.05$, CI: Confidence interval.

Table-3: Gender difference related to textaphrenia, anxiety and chronic sleep reduction.

Variable	Boys	Girls		95%CI		Cohen's d
	Mean±SD	Mean±SD	t(df)	LL	UL	
SAT	83.37±11.22	76.45±13.38	8.86 (968)	5.39	8.45	0.56
GAD	11.94±4.46	10.55±4.09	5.13 (998)	0.85	1.92	0.32
CSQR	51.40±7.48	47.19±9.49	7.78 (946)	3.14	5.26	0.49

$p < 0.000$, SAT: Survey for Assessing Textaphrenia, GAD: Generalised Anxiety Disorder, CSRQ: Chronic Sleep Reduction Questionnaire, M: Mean, SD: Standard deviation, CI: Confidence interval, t: Test value, LL: Lower limit, UL: Upper limit.

($\beta = 0.47$, $p < 0.05$). On the other hand, the R^2 value of 0.77 revealed that textaphrenia explained 77% variance in chronic sleep reduction with $F(1,998) = 794.93$, $p < 0.05$. Textaphrenia had a significant positive effect on chronic sleep reduction ($\beta = 0.67$, $p < 0.05$) (Table2).

Boys had higher textaphrenia, anxiety and chronic sleep reduction compared to the girls (Table3).

Discussion

The results of the current study proposed that textaphrenia had a significantly positive correlation with anxiety and chronic sleep reduction. The literature supports the findings that the problematic use of smartphones severely impacts health, and leads to depression, social or general anxiety, increased risk of suicide, stress symptoms, binge eating and other functional impairments.²⁴ Similarly, over-dependence on smartphones affects sleep duration, quality and efficiency.²⁵ In addition, it also has been linked to tiredness, usually in the daytime, longer sleep latency and delayed circadian rhythm that causes reduced or poor sleep.²⁶

The current study identified that textaphrenia significantly predicts anxiety and chronic sleep reduction. The outcomes are consistent with the literature which has reported that individuals who keep smartphones close to themselves all day and even at the time of sleeping tend to

develop feelings of restlessness, anxiousness, irritability and muscle stiffness along sleep difficulties.²⁷

Group statistics showed significant differences between boys and girls. Males were active users of smartphones and spent more time with them. Moreover, males were more anxious in the absence of smartphones and had more sleep difficulties due to excessive use of smartphones compared to females.²⁴

The current study has some limitations. The data was collected via an online survey and the respondents could have ignored the instructions. Also, the researcher was not there to increase the comprehension of the asked questions. Moreover, data was collected only from participants who could understand the English language. Additionally, exclusion of adolescents diagnosed with psychological disorders or physical disability might limit the generalisability of the findings. Further, the sample was collected only from three KP cities with a specific age range. Besides, the utilisation of snowball sampling technique might have introduced selection bias and limited the generalisability of the findings. Furthermore, anxiety, textaphrenia and sleep-related patterns might go up and down over extended data collection period.

Despite the limitations, the present study would spread awareness among parents and caregivers regarding the newly evolving disorder of textaphrenia due to the excessive use of smartphones. Likewise, it would also be helpful to mental health professionals in managing the disorder accordingly.

Conclusion

Textaphrenia was found to be significantly associated with anxiety and sleep difficulties. It could also predict anxiety and sleep disturbance. Further, there was a high prevalence of textaphrenia, anxiety and sleep problems among boys than the girls.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

References

1. Venugopal A, Marya A, Vaid NR, Bowman SJ. The cell phone quandary. *J World Fed Orthod*. 2022;11:90-2. doi:10.1016/j.ejwf.2021.10.004.
2. Olson JA, Sandra DA, Colucci ES, Al Bikaii A, Chmoulevitch D, Nahas J, et al. Smartphone addiction is increasing across the world: a meta-analysis of 24 countries. *Comput Hum Behav*. 2022;129:107138. doi:10.1016/j.chb.2021.107138.
3. Studer J, Marmet S, Wicki M, Khazaal Y, Gmel G. Associations between smartphone use and mental health and well-being among young Swiss men. *J Psychiatr Res*. 2022;156:602-10. doi:10.1016/j.jpsychires.

- 2022.10.036.
4. Tidy C. Surviving adolescence.[Online] [Cited 2026 August 14]. Available from: URL:https://patient.info/childrens-health/surviving-adolescence?utm_source=chatgpt.com
 5. Aslam M, Dur e Najaf S, Arooj F, Rai SA, Abdul Manan A, Fatima S. Influence of smartphone usage on health causing insomnia and binge eating. *Pak BioMed J.* 2021; 4:204-8. doi:10.54393/pbmj.v4i2.148.
 6. Abu Shehab AH, Fulga I, Gheorman V, Trifu S, Ciubară AB, Burlea SL, et al. Textaphrenia: psychological repercussions among young adults. *Eur Psychiatry.* 2023; 66:S998. doi:10.1192/j.eurpsy.2023.2119.
 7. Verma RK, Rajiah K, Cheang A, Barua A. Textaphrenia: an emerging silent pandemic. *Afr J Psychiatry.* 2014;17:510-1. doi:10.4172/1994-8220.1000e103.
 8. Khan F, Ali SA, Abbas A, Tariq F, Rehan M, Riaz Y. Prevalence of textaphrenia among undergraduates of Karachi, Pakistan. *Int J Res.* 2015;2:379-86.
 9. De-Sola J, Talledo H, Rubio G, Rodríguez de Fonseca F. Development of a mobile phone addiction craving scale and its validation in a Spanish adult population. *Front Psychiatry.* 2017;8:90. doi:10.3389/fpsyt.2017.00090.
 10. Stamatis CA, Meyerhoff J, Liu T, Sherman G, Wang H, Liu T, et al. Prospective associations of text-message-based sentiment with symptoms of depression, generalized anxiety, and social anxiety. *Depress Anxiety.* 2022; 39:794-804. doi:10.1002/da.23286.
 11. Vannucci A, Flannery KM, McCauley Ohannessian C. Social media use and anxiety in emerging adults. *J Affect Disord.* 2017;207:163-6. doi:10.1016/j.jad.2016.08.040.
 12. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th edition, text rev. Arlington (VA): American Psychiatric Association, 2022.
 13. Ceobanu CM, Marian AL, Apostolache R. Glimpse on 21st century new phobias; a predictive model of nomophobia. *Front Public Health.* 2023;11:1252099. doi:10.3389/fpubh.2023.1252099.
 14. De Sola J, Talledo H, Rubio G, Rodríguez de Fonseca F. Cell-phone addiction: a review. *Front Psychiatry.* 2016;7:175. doi:10.3389/fpsyt.2016.00175.
 15. Alahdal WM, Alsaedi AA, Garni AS, Alharbi FS. Sleep quality among high school students in Makkah, Saudi Arabia. *Cureus.* 2023;15:e40755. (10.7759/cureus.407559)
 16. Bi J. The relationship between mobile phone anxiety and sleep quality occupational therapy in adolescents and its internal mechanism. *Occup Ther Int.* 2023;2023:9879681. doi:10.1155/2023/9879681.
 17. He JW, Tu ZH, Xiao L, Su T, Tang YX. Effect of restricting bedtime mobile phone use on sleep, arousal, mood, and working memory: a randomized pilot trial. *PLoS One.* 2020;15:e0228756. doi:10.1371/journal.pone.0228756.
 18. Merrill RM, Ashton MK, Angell E. Sleep disorders related to index and comorbid mental disorders and psychotropic drugs. *Ann Gen Psychiatry.* 2023;22:23. doi:10.1186/s12991-023-00452-3.
 19. Pirdehghan A, Khezme E, Panahi S. Social media use and sleep disturbance among adolescents: a cross-sectional study. *Iran J Psychiatry.* 2021;16:137-45. doi:10.18502/ijps.v16i2.5814.
 20. Erdfelder E, Faul F, Buchner A. GPOWER: a general power analysis program. *Behav Res Methods Instrum Comput.* 1996;28:1-11. doi:10.3758/BF03203630.
 21. Alora CBC, Martin FG, Panaligan MLA. Textaphrenia: an emerging problem among Filipino youth in Manila. *Pamantasan ng Lungsod ng Maynila.* [Online] [Cited 2026 August 14]. Available from: URL: https://www.academia.edu/9627240/Textaphrenia_An_Emerging_Problem_Among_Filipino_Youth_in_Manila
 22. Spitzer RL, Kroenke K, Williams JBW, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med.* 2006;166:1092-7. doi:10.1001/archinte.166.10.1092.
 23. Meijer AM. Chronic sleep reduction, functioning at school and school achievement in preadolescents. *J Sleep Res.* 2008;17:395-405. doi:10.1111/j.1365-2869.2008.00677.x.
 24. Liu S, Wing YK, Hao Y, Li W, Zhang J, Zhang B. The associations of long-time mobile phone use with sleep disturbances and mental distress in technical college students: a prospective cohort study. *Sleep.* 2019;42. doi:10.1093/sleep/zsy213.
 25. Song Y, Sznajder K, Cui C, Yang Y, Li Y, Yang X. Anxiety and its relationship with sleep disturbance and problematic smartphone use among Chinese medical students during COVID-19 home confinement: a structural equation model analysis. *J Affect Disord.* 2022;296:315-21. doi:10.1016/j.jad.2021.09.095.
 26. Sohn SY, Krasnoff L, Rees P, Kalk NJ, Carter B. The association between smartphone addiction and sleep: a UK cross-sectional study of young adults. *Front Psychiatry.* 2021;12:629407. doi:10.3389/fpsyt.2021.629407.
 27. Shahjehan A, Afridi SA, Haider M, Iqbal A, Aziz S. Smartphone addiction and behavioral outcomes in South Korea: a systematic review and meta-analysis. *Humanit Soc Sci Rev.* 2021;9:358-69. doi:10.18510/hssr.2021.9235.

Author Contribution:

HN & RJ: Concept, data collection, analysis, interpretation, drafting and final approval.