

Original Paper

# Relationship between Instagram Addiction and Academic Procrastination among Nursing Students of Gonabad University of Medical Sciences, Gonabad, Iran, in 2022



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## ABSTRACT



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### Key words:

Internet  
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**Aims** The Internet is a crucial tool for interactions and entertainment. Today, we face a new generation of Internet tools called social networks. These networks can lead to harmful behaviors and disrupt the educational process when used excessively. Instagram is one of the most popular social networking platforms. Since no studies on this topic have been conducted in Iran, this study aimed to examine the relationship between Instagram addiction and academic procrastination among nursing students.

**Materials & Methods** This descriptive-correlational study was conducted on 211 undergraduate nursing students at Gonabad University of Medical Sciences, Gonabad, Iran, between December 2022 and February 2023. Participants were recruited using convenience sampling. Data were collected using demographic information questionnaires, Solomon and Rothblum Academic Procrastination Scale, and the Social Media Addiction Questionnaire. Data were analyzed using SPSS software (version 23). Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used, and a Pearson correlation coefficient test was performed to examine the relationships between the variables. A significance level of less than 0.05 was considered.

**Findings** Most participants were male (47.4%). The average score for Instagram addiction was  $47.27 \pm 10.83$ , and the average score for academic procrastination was  $52.39 \pm 5.25$ . The highest average procrastination was related to exam preparation ( $22.08 \pm 3.06$ ). Pearson's correlation test showed a positive and significant relationship between Instagram addiction and academic procrastination ( $r = 0.29, P < 0.001$ ).

**Conclusion** This study found a positive relationship between Instagram addiction and academic procrastination, with greater Instagram use associated with greater procrastination. Given the importance of nursing students, the findings suggest the need for more focus on their educational well-being and can guide future planning by experts and managers.

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## Introduction

Today, with the advancement of technology and the widespread use of the Internet as a crucial source of information, news, and entertainment, significant changes have occurred in human lives [1]. Studies show that between 2010 and 2018, the number of Internet users worldwide grew by 53.5%. In 2018, our country also recorded the highest Internet usage rate in the Middle East [2]. In this context, we are witnessing the emergence of a new generation of Internet tools that provide more features for interaction, conversation, and, in general, two-way communication [3].

In recent decades, mobile social networks have attracted widespread attention as key factors in the emergence of new forms of human communication [4]. The use of social networks has become increasingly popular. While numerous studies have been conducted on the addictive use of platforms, such as Twitter and Facebook, limited research has been conducted on Instagram addiction and its factors [5]. Instagram is a free social network for sharing images and short videos. A 2022 study found that approximately 30.2% of Instagram users are young people aged 18-24 [6]. This popularity increases the risk of addiction among some users [7].

Instagram addiction is a behavioral addiction characterized by excessive attention to this social media platform and an uncontrollable urge to access or use social media. It can negatively affect other social activities, work, interpersonal relationships, mental health, and well-being [6, 8]. Studies show that Instagram addiction is associated with symptoms of depression, anxiety, and stress, and negatively affects students' academic performance [7, 9]. One factor that can interfere with educational progress is academic procrastination [10].

Procrastination is the conscious delay of an intended course of action despite awareness of potential negative consequences. Procrastination regarding academic tasks is one of the most important causes of failure or lack of academic progress for learners [11]. Procrastination has adverse effects on all educational groups [12]. However, it has left an irreparable impact among medical students, especially nursing students [13]. Procrastination among nursing students can lead to a lack of learning essential patient care skills, decreased knowledge and awareness, and, consequently, nursing and medication errors [14]. Roy (2022) found that Instagram addiction, marked by lack of control and disengagement, is positively related to procrastination among students and predicts it [6]. Pakbazar et al. (2022) also found that Instagram addiction can negatively impact academic performance through increased procrastination [15].

With the increasing use of social media, especially Instagram, in people's daily lives and its impact on students' academic performance, studying this issue has become important. As mentioned, few studies have been conducted on this topic, both globally and in Iran. Since no studies have examined the relationship between Instagram addiction and academic procrastination, the

present study aimed to determine this connection among nursing students at Gonabad University of Medical Sciences in 2022.

## Materials and Methods

This descriptive-correlational study was conducted in 2022 at Gonabad University of Medical Sciences, Gonabad, Iran. The sample size was determined using the correlation sample size formula, and based on the study by Akbari et al. [16]. The minimum sample size was set at 169 participants. Considering a 25% potential attrition rate, the final sample size was 211.

The inclusion criteria were willingness to participate in the study, being an undergraduate nursing student, and having no severe psychological issues based on self-report. The exclusion criteria included incomplete questionnaires and lack of access to a smartphone or Instagram.

The study tools included a demographic information questionnaire, a social media addiction questionnaire, and the Solomon and Rothblum Academic Procrastination Scale. The demographic information questionnaire included questions on age, gender, field of study, academic semester, grade point average (GPA), ethnicity, and place of residence. The Social Media Addiction Questionnaire for Adolescents was designed by Sadeghzadeh et al. (2018) in Iran and consists of 32 items. The questionnaire used a Likert scale with four options (strongly agree, agree, disagree, and strongly disagree). The scoring system is as follows: strongly agree = 1, agree = 2, disagree = 3, strongly disagree = 4. The tool was psychometrically assessed among Iranian adolescents. The Cronbach's alpha coefficient for this scale was 0.72, and the questionnaire demonstrated good face, content, and construct validity. The score range for this questionnaire is 31-124, with higher scores indicating a greater level of addiction to social media [17]. The Academic Procrastination Scale, developed by Solomon and Rothblum in 1984, consists of 27 questions designed to assess procrastination across three areas: completing assignments (questions 1-8), preparing for exams (questions 9-19), and writing term papers (questions 20-27) [18]. This scale was first used in Iran by Dehghani. Responses were based on a four-point Likert scale: "never" scored 1, "rarely" scored 2, "most of the time" scored 3, and "always" scored 4 [19]. Jookar and Delavarpour's research findings indicated good construct validity for the questionnaire. The scale's reliability, measured using Cronbach's alpha, was 0.79, and its validity, assessed using internal consistency, was 0.84 [20].

After completing the necessary preparations for the research and obtaining approval from the Student Research and Technology Committee of Gonabad University of Medical Sciences, Gonabad, Iran, the researcher began data collection. Following the issuance of an introduction letter and based on the inclusion criteria, sampling was conducted using convenience sampling. Data were analyzed using SPSS software (version 23). Descriptive statistics, including frequency count, percentage, mean, and standard deviation, were used, as well as inferential statistics, including the

Pearson correlation coefficient with a significance level of less than 0.05.

## Results

The findings of this research showed that out of the 211

nursing students who participated, 111 (52.6%) were female and 100 (47.4%) were male. Regarding ethnicity, 198 participants (93.8%) were of Fars ethnicity, and 13 participants (6.2%) belonged to other ethnic groups. Most participants in this study (98.1%) lived in a city ([Table 1](#)).

**Table 1.** The Frequency Distribution of Research Units Based on Gender, Ethnicity, and Residence

Variables	No	%
Gender	Male	100
	Female	111
Ethnicity	Fars	198
	Others	13
Residence	City	207
	Village	4

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According to the findings of the present study, the mean age and standard deviation of the participants were  $21.31 \pm 2.00$ . Additionally, the mean and standard

deviation of the academic term were  $4.85 \pm 1.82$ , and the participants in the study had a GPA with a mean and standard deviation of  $17.25 \pm 1.40$  ([Table 2](#)).

**Table 2.** The Mean and Standard Deviation of Age, Academic Term, and Grade Point Average (GPA) of the Research Units

Variables	Mean $\pm$ SD
Age(year)	$21.31 \pm 2.00$
Academic semester	$4.85 \pm 1.82$
GPA	$17.25 \pm 1.40$

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According to the study's findings, the mean and standard deviation of Instagram addiction were  $47.27 \pm 10.83$ . Additionally, academic procrastination included three dimensions: preparation for exams, preparation for writing papers, and preparation for completing assignments, with their respective mean and standard deviations being  $22.08 \pm 3.06$ ,  $14.80 \pm 2.14$ , and  $15.51 \pm 1.94$ . The results of the present study showed that the

highest level of procrastination occurred in exam preparation. Overall, the level of procrastination among nursing students was  $52.39 \pm 5.25$  ([Table 3](#)).

The Pearson correlation test showed a significant positive correlation between Instagram addiction and academic procrastination ( $P < 0.001$ ). Specifically, as Instagram usage increased, academic procrastination also increased ([Table 4](#)).

**Table 3.** The Mean and Standard Deviation of Instagram Addiction, Academic Procrastination, and Its Dimensions

Variables	Mean $\pm$ SD	
Instagram addiction	$47.27 \pm 10.83$	
Academic procrastination	Preparation for exams	$22.08 \pm 3.06$
	Preparation for writing papers	$14.80 \pm 2.14$
	Preparation for doing homework	$15.51 \pm 1.94$
	Total	$52.39 \pm 5.25$

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**Table 4.** Correlation between the Instagram Addiction Questionnaire and Academic Procrastination

Variables	Pearson Correlation (r)	P-value
Academic procrastination	0.29	< 0.001
Instagram addiction		

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## Discussion

This study aimed to determine the relationship between Instagram use and academic procrastination among undergraduate nursing students at Gonabad University of Medical Sciences, Gonabad, Iran.

The results of the present study showed that academic procrastination was high among nursing students. Thapa et al. (2024) found that approximately 40.1% of undergraduate medical students exhibited high levels of academic procrastination [21]. Mahasneh et al. (2016) also found that academic procrastination is a common

issue among undergraduate students [22]. The results of the studies by Ajayi et al. (2020), Hidayat et al. (2023), and Heidarzadeh et al. (2016) also indicate high levels of academic procrastination among students [23-25]. As mentioned, the results of the above studies align with those of the present study. One possible reason for the alignment could be the challenging nature of medical sciences, such as nursing and medicine. Studying these fields can place significant psychological and academic pressure on undergraduates [26]. On the other hand, inadequate training in time management and self-regulation skills can leave students unable to complete

academic tasks, leading to procrastination [27]. Such factors could explain the consistency of findings across studies conducted in different educational contexts. High levels of academic procrastination can lead to various problems that negatively impact students' academic progress, personal achievements, and even their mental health [28].

The findings of the present study indicate that Instagram use is high among students. A survey by Akançık et al. (2020) showed that Instagram addiction is common among undergraduate students and negatively affects their quality of life [29]. De Souza et al. (2018) in their study found that Instagram addiction is a common phenomenon among undergraduate nursing students, and it is more prevalent among female students [30]. The results of these studies align with the findings of the present study. One reason for this consistency may be the high popularity of Instagram as a visually-oriented, socially interactive platform. In addition, a lack of awareness of the psychological and academic consequences of its use may lead to problematic Instagram usage [31, 32].

The Pearson correlation test showed a significant positive relationship between the overall Instagram addiction score and the overall academic procrastination score, indicating that as Instagram use increased, academic procrastination also increased. Roy (2022) examined Instagram addiction through six factors: lack of control, disengagement, escapism, health and interpersonal issues, and excessive use. Consistent with the obtained results, Instagram addiction has a significant positive correlation with academic procrastination and can also serve as a predictor of academic procrastination [6].

Pakpazar et al. (2021) found that Instagram addiction negatively impacts students' academic performance by increasing procrastination [15]. Zahra et al. (2021) found a positive correlation between Instagram addiction and academic procrastination among students [33]. Ch'ng et al. (2022) found that social media addiction predicts higher academic procrastination among undergraduates [34]. Suárez et al.'s (2022) survey showed that greater addiction to social media, such as Instagram, is associated with greater academic procrastination, but this does not necessarily lead to a decline in academic performance [35]. The study by Foroughi et al. showed that Instagram addiction negatively impacts students' academic performance [5]. The results of Anierobi et al. (2021) and Muslikah et al. (2018) on the impact of social media on academic procrastination among students indicate a positive relationship between the two phenomena [36, 37]. Additionally, Soleymani et al. (2016) found a direct relationship between social media use and academic procrastination [38].

The results of the above studies indicate a positive relationship between Instagram addiction and academic procrastination, which is consistent with the findings of this study. The observed alignment may be due to shared psychological mechanisms. Excessive use of social

media platforms, such as Instagram, can lead to poor self-regulation and the emergence of avoidant behaviors. According to previous studies, these factors contribute to procrastination [39, 40]. Among the studies conducted, Ahmad et al.'s (2020) study contradicts the present study's results, as it found that Instagram addiction had no impact on students' academic outcomes [41]. The differences between this study and the present one can be attributed to several factors, including the small sample size, differing inclusion criteria, and variations in methodology and tools used. Additionally, the lack of consideration of the procrastination phenomenon and its relationship with academic performance could also explain this discrepancy.

The current research indicates that excessive use of social media can reduce students' ability to concentrate and disrupt time management, decision-making, and planning, leading to academic procrastination. Furthermore, it can negatively impact students' mental health, which, in turn, may interfere with their academic performance [9, 15, 42].

The limitations of this study include not considering nursing students from other academic levels, completing questionnaires through self-reporting, and filtering during the research period. It is recommended that future studies be performed with a larger sample size, include students from other academic levels, and be conducted after filtering is removed.

## Conclusion

This study found a positive relationship between Instagram addiction and academic procrastination, with increased Instagram use associated with greater academic procrastination among nursing students at Gonabad University of Medical Sciences, Gonabad, Iran. Given the importance of nursing students in maintaining public health, greater attention to their academic status is necessary. Therefore, this phenomenon can be prevented by implementing educational programs and emphasizing its significance to students. Administrators and experts can use the findings of this study for planning in this area.

## Ethical Considerations

### Compliance with ethical guidelines

This study is derived from a research project approved by the Research and Technology Committee of the School of Nursing at Gonabad University of Medical Sciences, Gonabad, Iran (ethics code: IR.GMU.REC.1401.108).

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## Authors' contributions

MR and FK were involved in the conception and organization of this study. MR, FK, and MM were involved in the execution and data collection of this study. FK, MAD, and MM participated in the design and/or execution of the statistical analysis. All authors contributed to the preparation and critical review of the manuscript and approved the final version.

## References

1. Asghari A. Comparison of impulsivity, alexithimia and self-harming behaviors in students with Internet addiction and normal students. *Bimonthly Educ Strateg Med Sci*. 2023;16(4):412-20. [\[Link\]](#)
2. Ferdavani MK, Farhadi H. Meta-analysis of the treatment of Internet addiction, computer game addiction and workaholism. *Sci J Soc Psychol*. 2023;68(11):17-35. [\[DOI: 20.1001.1.23455098.1402.11.68.2.2\]](#)
3. Darwish A, Lakhtaria KI. The impact of the new Web 2.0 technologies in communication, development, and revolutions of societies. *J Adv Inf Technol*. 2011;2(4):204-16. [\[DOI: 10.4304/jait.2.4.204-216\]](#)
4. Sadeghi J, Naghibulsadat SR, Khamseh M. The role of accompanying social media in generational relations of university students. *J Interdiscip Stud Commun Media*. 2021;4(2):101-42. [\[DOI: 10.22034/jiscm.2021.291775.1228\]](#)
5. Foroughi B, Griffiths MD, Iranmanesh M, Salamzadeh Y. Associations between Instagram addiction, academic performance, social anxiety, depression, and life satisfaction among university students. *Int J Ment Health Addict*. 2021;20(1):1-22. [\[DOI: 10.1007/s11469-021-00510-5\]](#)
6. Roy A. A study on Instagram addiction and procrastination among college students. *Int J Indian Psychol*. 2022;10(4):123-35. [\[DOI: 10.25215/1004.076\]](#)
7. Ponnusamy S, Iranmanesh M, Foroughi B, Hyun SS. Drivers and outcomes of Instagram addiction: Psychological well-being as moderator. *Comput Hum Behav*. 2020;107(2):106294. [\[DOI: 10.1016/j.chb.2020.106294\]](#)
8. Andreassen CS, Pallesen S. Social network site addiction: An overview. *Curr Pharm Des*. 2014;20(25):4053-61. [\[DOI: 10.2174/13816128113199990616\]](#) [\[PMID\]](#)
9. Jovic JJ, Čorac A, Ignjatović-Ristić D. Correlation between Instagram addiction and symptoms of depression, anxiety and stress. *Eur Neuropsychopharmacol*. 2019;29(Suppl 3):S316-7. [\[DOI: 10.1016/j.euroneuro.2019.09.459\]](#)
10. Simpson WK, Pynchyl TA. In search of the arousal procrastinator. *Pers Individ Dif*. 2009;47(8):906-11. [\[DOI: 10.1016/j.paid.2009.07.013\]](#)
11. Khormaee F, Azadi Dehbid F. Explaining student procrastination based on religious structures and moral patience. *Cult Islam Univ*. 2017;7(22):77-92. [\[Link\]](#)
12. Grunschel C, Patrzek J, Klingsieck KB, Fries S. "I'll stop procrastinating now!" Fostering specific processes of self-regulated learning to reduce academic procrastination. *J Prev Interv Community*. 2018;46(2):143-57. [\[DOI: 10.1080/10852352.2016.1198166\]](#)
13. Abbasi M, Dargahi S, Mohammad Alipor Z, Mehrabi A. Student stressors in predicting procrastination and academic burnout. *Iran J Med Educ*. 2015;15:293-303. [\[Link\]](#)
14. Haghani H. Relationship between academic procrastination, achievement, and self-efficacy. *Iran J Med Educ*. 2014;14(1):32-40. [\[Link\]](#)
15. Pekpazar A, Aydın GK, Aydın U, Beyhan H, Ari E. Role of Instagram addiction on academic performance: Mediating effect of procrastination. *Comput Educ Open*. 2021;2(19):100049. [\[DOI: 10.1016/j.caeo.2021.100049\]](#)
16. Akbari E, Shokohi S, Akbari Golzar M. Addiction to mobile social networking sites and academic performance: a case study of

## Conflicts of interest

The authors declared no conflicts of interest.

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17. Shiraz University students. *Sociol Rev*. 2018;25(2):585-609. [\[DOI: 10.22059/jsr.2018.71083\]](#)
18. Sadeghzadeh R, Ahadi H, Doratj F, Manshaei G. Development and validation of a questionnaire on addiction to virtual social networks. *Educ Meas Eval Stud*. 2019;8(24):235-64. [\[Link\]](#)
19. Solomon LJ, Rothblum ED. Academic procrastination: Frequency and cognitive-behavioral correlates. *J Couns Psychol*. 1984;31(4):503-9. [\[DOI: 10.1037/0022-0167.31.4.503\]](#)
20. Rasoli Khorsidi F, Sangani A, Jangi P. Academic procrastination and locus of control in nursing students. *Sci J Nurs Midwifery Paramed Fac*. 2019;5(2):57-67. [\[Link\]](#)
21. Jokaar B, Delaavarpoor M. Relationship between educational procrastination and goal orientation. *New Thoughts Educ*. 2008;3(3-4):61-80. [\[Link\]](#)
22. Thapa K, Rimal SP. Academic procrastination among undergraduate medical students. *J Chitwan Med Coll*. 2024;14(1):60-3. [\[DOI: 10.54530/jcm.1405\]](#)
23. Mahasneh AM, Bataineh OT, Al-Zoubi ZH. Academic procrastination and parenting styles. *Open Psychol J*. 2016;9(1):25-34. [\[DOI: 10.2174/1874350101609010025\]](#)
24. Ajayi OS. Academic self-efficacy, gender and academic procrastination. *Epiphany J Transdiscipl Stud*. 2020;13(1):75-84. [\[DOI: 10.21533/epiphany.v13i1.324\]](#)
25. Hidayat MT, Hasim W. Academic procrastination among undergraduate students. *J Educ Cult Psychol Stud*. 2023;28:27-38. [\[DOI: 10.7358/ecps-2023-028-taha\]](#)
26. Heidarzadeh A, Mohammad Alizadeh S, Soltan Ahmad J, Forouzi M, HashemiNasab FS, Abas Zadeh H. Prevalence of academic negligence and mood disorders. *Educ Dev Judishapur*. 2016;7(4):325-33. [\[Link\]](#)
27. Anggoro A. Academic procrastination and stress among medical students. *Scientia Psychiatr*. 2023;4(2):369-72. [\[DOI: 10.37275/scipsy.v4i2.112\]](#)
28. Honken NB, Ralston PA. High-achieving high school students and not so high-achieving college students: a look at lack of self-control, academic ability, and performance in college. *J Adv Acad*. 2013;24(2):108-24. [\[DOI: 10.1177/1932202X13482466\]](#)
29. Chow H. Procrastination among undergraduate students: effects of emotional intelligence, school life, self-evaluation, and self-efficacy. *Alberta J Educ Res*. 2011;57(2):234-40. [\[DOI: 10.55016/ojs/ajer.v57i2.55479\]](#)
30. Akanksh SS, D'Souza L, Manish S. The effect of Instagram addiction on quality of life among undergraduate students in Mysuru. *Int J Indian Psychol*. 2020;8(4):1324-30. [\[DOI: 10.25215/0804.145\]](#)
31. D'Souza L. Extent of Instagram addiction among college students in Mysuru city: influence of select demographic factors. *Int J Indian Psychol*. 2018;6(4):4-10. [\[DOI: 10.25215/0604.081\]](#)
32. Kircaburun K, Griffiths MD. Instagram addiction and the Big Five of personality: the mediating role of self-liking. *J Behav Addict*. 2018;7(1):158-70. [\[DOI: 10.1556/2006.7.2018.15\]](#) [\[PMID\]](#)
33. Wang JL, Sheng JR, Wang HZ. The association between mobile game addiction and depression, social anxiety, and loneliness. *Front Public Health*. 2019;7:247. [\[DOI: 10.3389/fpubh.2019.00247\]](#)
34. Zahra A. The relationship between Instagram addiction and academic procrastination among university students. *J Psikol*.

- 2021;7(2):454-8. [\[DOI: 10.29313/V010.28395\]](https://doi.org/10.29313/V010.28395)
34. Ch'ng LTX, Hoo PYS. Relationship between social media addiction levels and academic procrastination among undergraduate students in Malaysia: grit as the mediator. *Adv J Soc Sci.* 2022;11(1):13-27. [\[DOI: 10.21467/ajss.11.1.13-27\]](https://doi.org/10.21467/ajss.11.1.13-27)
35. Suarez-Perdomo A, Ruiz-Alfonso Z, Garcés-Delgado Y. Profiles of undergraduates' networks addiction: Difference in academic procrastination and performance. *Comput Educ.* 2022;181(3):104459. [\[DOI: 10.1016/j.compedu.2022.104459\]](https://doi.org/10.1016/j.compedu.2022.104459)
36. Anierobi EI, Etodike CE, Uzochukwu N, Ezennaka AO. Social media addiction as correlates of academic procrastination and achievement among undergraduates of Nnamdi Azikiwe University, Awka. *Int J Acad Res Progress Educ Dev.* 2021;10(3):2226-6348. [\[DOI: 10.6007/IJARPED/v10-i3/10709\]](https://doi.org/10.6007/IJARPED/v10-i3/10709)
37. Muslikah M, Andriyani A, Mulawarman M. Social media use and academic procrastination. *Psikopedagogia.* 2018;7(2):53-7. [\[Link\]](#)
38. Soleymani M, Sadipoor E, Asadzadeh H. Relationship between using mobile phone's virtual social media and students' academic procrastination, feeling lonely, and mental health. *Inf Commun Technol Educ Sci.* 2016;6(4):127-44. [\[Link\]](#)
39. Ma L, Zhang X, Du Y. Influence mechanism on supplier emission reduction based on a two-level supply chain. *Int J Environ Res Public Health.* 2021;18(23):12439. [\[DOI: 10.3390/ijerph182312439\]](https://doi.org/10.3390/ijerph182312439) [\[PMID\]](#) [\[PMCID\]](#)
40. Elhai JD, Dvorak RD, Levine JC, Hall BJ. Problematic smartphone use: A conceptual overview and systematic review of relations with anxiety and depression psychopathology. *J Affect Disord.* 2017;207:251-59. [\[DOI: 10.1016/j.jad.2016.08.030\]](https://doi.org/10.1016/j.jad.2016.08.030) [\[PMID\]](#)
41. Ahmed MS, Rony RJ, Ashhab MM, Ahmed N. Impact of Instagram on students' academic results. *Proc IEEE Reg 10 Symp.* 2020:1-5. [\[DOI: 10.1109/TENSYMP50017.2020.9230945\]](https://doi.org/10.1109/TENSYMP50017.2020.9230945)
42. D'Souza L, Hemamalini M. Instagram addiction and depression. *Int J Indian Psychol.* 2018;6(4):96-102. [\[DOI: 10.25215/0604.091\]](https://doi.org/10.25215/0604.091)