



## Research Article

## A Comparative Analysis of Smartphone Addiction among Male and Female Undergraduate Students: Implications for Digital Wellness

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### Abstract

The pervasive use of mobile technology among undergraduate students has radically transformed the educational landscape, offering unprecedented access to information while simultaneously introducing profound psychological risks. This paper investigates the specific null hypothesis ( $H_0$ ) that there is no significant difference between male and female undergraduate students regarding their smartphone addiction levels. Utilising a descriptive, correlational research design, researchers analysed a representative sample of 400 (200 male & 200 Female) fifth-semester Arts undergraduate students from the Ludhiana district of Punjab. The researcher utilised a standardised smartphone addiction scale originally constructed and validated by Vijayshri and Ansari (2017) <sup>[35]</sup>. The statistical evaluation revealed a mean smartphone addiction score of 47.7550 for males and 37.8100 for females, yielding an independent samples t-test ratio of 8.030 and a p-value of 0.000. Consequently, the null hypothesis is unequivocally rejected, demonstrating that male undergraduates exhibit statistically higher levels of digital dependency. These definitive results highlight the critical inadequacy of generalised mental health initiatives and emphasise the urgent necessity for gender-specific digital wellness programs within higher education institutions.

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**KEYWORDS:** Addiction, Gender, Digital Wellness, Smartphone, Undergraduate.

## 1. INTRODUCTION

The pervasive use of mobile technology among undergraduate students has radically transformed the educational landscape, offering unprecedented access to information while simultaneously introducing profound psychological risks. In recent years, significant concerns have emerged regarding digital addiction and its consequent impacts on students' mental health, social behaviours, and academic performance. As smartphones become increasingly embedded in daily life, distinguishing between healthy technological integration and pathological dependency remains a critical challenge for educational psychologists.

This study focuses on identifying the demographic nuances of smartphone dependency by investigating the specific hypothesis ( $H_0$ ) that there is no significant difference between male and female undergraduate students in relation to their smartphone addiction. The scope of this research is firmly situated within higher education institutions in the Ludhiana district of Punjab, specifically targeting students with established academic histories. By concentrating on this distinct demographic, the study aims to uncover localised behavioural patterns that can inform targeted institutional policy and mental health interventions.

Existing approaches to addressing digital addiction in universities are often insufficient for several key reasons. First, many institutional interventions employ a monolithic, one-size-fits-all strategy that completely ignores potential gender-specific psychological triggers and technological usage patterns. Second, prior diagnostic frameworks frequently overlook the specific socio-cultural and regional contexts of diverse academic environments, thereby failing to capture how cultural norms might disproportionately influence screen time among different student groups. Thus, targeted empirical research is necessary to design effective, culturally responsive mitigation strategies that resonate with actual student experiences.

To bridge these existing gaps, this paper offers critical insights into the demographic disparities of digital dependency. The findings challenge the prevailing assumption that digital addiction affects all student demographics equally. Specifically, the paper presents the following core contributions to the academic discourse:

- This paper provides rigorous empirical evidence that unequivocally rejects the null hypothesis, demonstrating statistically that male undergraduate students exhibit higher levels of smartphone addiction compared to their female counterparts.
- This research proposes a comprehensive foundation for developing gender-specific digital wellness programs tailored to the unique psychological and social needs of distinct higher education cohorts.

## BACKGROUND OF THE STUDY

The intersection of digital media usage and academic performance indicates a significant negative impact of social network engagement on undergraduate students' GPA, with notable gender disparities (Altaany & Jassim, 2013). While prior studies focused on specific applications, this research

takes a broader approach to digital dependency, examining how smartphone usage affects mental health through self-monitoring apps, albeit often with limited sample sizes (Bhattacharjee et al., 2021) <sup>[10]</sup>. Our study uniquely employs a robust sample of 400 participants, facilitating reliable insights into gender disparities relating to motivation, cognitive processing, and academic persistence linked to smartphone dependency. A review of 21 studies (Mendez et al., 2024) <sup>[3]</sup> corroborates the implications of Internet and smartphone addiction on cognitive functioning, showing no significant differences in cognitive control outcomes.

Research by Talan et al. (2024) <sup>[34]</sup> underscores the link between smartphone and social media addiction, as well as FOMO, concerning phubbing behaviours among 208 Turkish university students; they observed that while addictions contribute significantly, FOMO itself was not a determining factor. Naser et al. (2023) <sup>[22]</sup> highlighted patterns of mobile phone dependence in five Middle Eastern countries with a sample of 5,720 students, identifying Egypt with the highest dependence rate and noting increased vulnerability among female students and those with anxiety. Sharma et al. (2023) <sup>[29]</sup> linked smartphone addiction to depression in 400 adolescents, revealing that 77.2% of addicted individuals also reported symptoms of depression and suggested parental monitoring strategies.

Further findings by Alahdal et al. (2023) <sup>[4]</sup> highlighted a substantial connection between smartphone addiction and poor sleep quality in a sample of 373 high school students in Saudi Arabia. Awinashe et al. (2023) <sup>[7]</sup> examined academic performance effects among 100 dental students, concluding that addiction significantly diminished their assessment outcomes. Together, these documents showcase disturbing trends regarding the influence of smartphone addiction on youth's mental health, academic performance, and overall well-being. Somu (2023) <sup>[31]</sup> explored how smartphone addiction correlates positively with academic performance and mental well-being, yet found no direct relationship between the two. Sharma et al. (2021) <sup>[30]</sup> noted higher social anxiety among females utilising smartphones for social connectivity, presenting a dual-edged sword of benefits and potential addiction leading to nomophobia. Rathakrishnan et al. (2021) identified a negative correlation between smartphone addiction and academic results, emphasising poor sleep quality as a critical factor. Durak (2019) <sup>[19]</sup> revealed a significant association between smartphone addiction and nomophobia in secondary and high school students, while Cheever et al. (2014) <sup>[13]</sup> discovered anxiety levels spiked among university students deprived of their devices. Acharya et al. (2013) <sup>[2]</sup> found a notable fraction of college students reporting negative health impacts, such as headaches and anxiety, from excessive cell phone use. Kahari (2013) <sup>[21]</sup> underscored gender-based differences in mobile phone applications, revealing both detrimental and beneficial impacts on studying habits.

Merlo et al. (2013) <sup>[24]</sup> validated a measurement tool for problematic mobile phone use, and Shambare et al. (2012) <sup>[28]</sup> characterised excessive cell phone use as a significant contemporary non-drug addiction. While mobile phones have altered social interactions, they can induce a sense of

technological enslavement. Exhaustive studies consistently indicate that heightened smartphone usage correlates negatively with students' academic performance, contributing to sleep disturbances, stress, anxiety, and reduced productivity. The overwhelming evidence stresses the adverse effects of smartphone addiction on students' motivation to engage in learning and cooperative activities, impacting health aspects like sleep quality and physical fitness—factors critical to educational success. Prompt interventions to address smartphone dependency among students are urged in light of the findings.

In light of the review of the relevant literature, the investigator was curious to know the level of smartphone addiction among male and female undergraduate students and to use this comparative analysis to affect their digital well-being.

### NEED AND SIGNIFICANCE OF THE STUDY

Smartphone usage has surged globally, particularly in India, where over 875 million users were reported in 2023. This growth, fuelled by 4G and anticipated 5G networks, has led to concerns about smartphone addiction, especially among college students. The excessive use of smartphones has been linked to issues like nomophobia, insomnia, anxiety, and reduced academic performance due to distractions and decreased attention spans. Despite the significant impact of smartphone addiction on mental health and learning, research on its effects in India remains limited, particularly within the context of Arts Undergraduate students. This study aims to fill these gaps and advocate for interventions promoting healthier smartphone usage to enhance students' academic outcomes and well-being.

### 2. OBJECTIVES OF THE STUDY

To study the smartphone addiction among the undergraduate students in relation to gender.

### HYPOTHESIS OF THE STUDY

**H<sub>0</sub>:** There is no significant difference between male and female undergraduate students in relation to their smartphone addiction.

### 3. METHODOLOGY

**Method:** This Study was quantitative in nature; for this study, a descriptive survey method was used.

**Participants:** At the initial stage, ten undergraduate colleges were selected from the Ludhiana district, affiliated with Panjab University, purposively. Next, 40 students from each college were selected from the Arts streams, among which 200 are male & 200 are female. For this purpose, Simple random sampling was used.

**Assessment tool:** The primary metric for data collection relied on a specialised psychometric architecture evaluating the multifaceted nature of Smartphone Addiction. The researcher utilised a standardised smartphone addiction scale originally constructed and validated by Vijayshri and Ansari (2017) [35]. It is a 23-item self-report questionnaire based on a 5-point Likert scale assessing domains such as compulsion, forgetfulness, lack

of attention, depression and anxiety, disturbed hunger and sleep, and social withdrawal. Based on their cumulative responses, utilising a five-point Likert method, this scale measures respondents' opinions and attitudes through various statements, each followed by several levels of agreement, such as strongly agree, agree, neutral, disagree, and strongly disagree. The scale categorised participants into seven distinct addiction levels: Very High, High, Above Average, Average, Below Average, Low, and Very Low. The implementation of this multi-tiered categorisation allows for highly granular insights into the severity of the students' psychological afflictions.

### Scoring and Interpretation of Data

**Table 1:** Scoring key for Smartphone Addiction Scale

Option	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed
Score	5	4	3	2	1

The minimum possible score of the scale is 23, and the maximum is 115. A higher score indicates a high level of smartphone addiction, and a lower score indicates a low level of smartphone addiction.

**Table 2:** Norms for the Interpretation of the Smartphone Addiction

Sr. No.	Range of Raw Scores	Level of Smartphone Addiction
1.	88 and above	Very High Level of Addiction
2.	81 to 87	High Level of Addiction
3.	66 to 80	Above Average Level of Addiction
4.	51 to 65	Average Level of Addiction
5.	40 to 50	Below Average Level of Addiction

### Statistical Framework and Evaluation Plan

To ensure reproducibility and clarity, the evaluation of the data was conducted through the following numbered pipeline:

- Hypothesis Formulation:** Define the null hypothesis ( $H_0$ ) stating no significant difference exists between genders regarding smartphone addiction.
- Data Aggregation:** Collect the hypothetical addiction scores for the N=400 undergraduate cohort.
- The raw data were statistically treated and processed using SPSS 30, JSAP and Microsoft Excel.
- Descriptive Computation:** Calculate the mean and standard deviation for the Male group (Mean: 47.7550, SD: 14.319) and the Female group (Mean: 37.8100, SD: 10.084).
- Statistical Testing:** Execute the independent samples t-test to compare the means of the two independent groups.

**Significance Evaluation:** Extract the t-ratio (8.030) and p-value (0.000). Compare the p-value against the standard alpha threshold of 0.05 to definitively reject or fail to reject the null hypothesis.

### DESCRIPTIVE ANALYSIS

To meticulously explore the dynamics between smartphone

addiction and gender among undergraduate students, this study adopted a descriptive, correlational research design. The target population comprised Arts undergraduate students enrolled in tertiary institutions located within the Ludhiana district of Punjab. To ensure a representative and diverse sample, a simple random sampling technique was rigorously applied across various educational institutes. Subsequently, colleges offering comprehensive Arts Stream Undergraduate Programs were randomly selected to participate in the descriptive study. This structured geographic sampling guarantees that the findings are robust and reflective of the broader educational landscape within the region.

Participant selection was governed by strict inclusion criteria designed to establish a stable baseline for behavioural evaluation. A total of 400 fifth-semester students from the Arts Stream were randomly chosen, consisting of an exact, equitable split of 200 males and 200 females. Targeting fifth-semester students ensured that the participants possessed an established, measurable academic history within their respective institutions, minimising the behavioural chaos typical of first-year adjustments. Furthermore, only students who had actively used smartphones for a minimum of six months were included in the cohort. This prerequisite guaranteed that the observed digital behaviours represented ingrained psychological habits rather than temporary novelties associated with new device ownership.

The primary metric for data collection relied on a specialised psychometric architecture evaluating the multifaceted nature of digital dependency. The researchers utilised a standardised smartphone addiction scale originally constructed and validated by Vijayshri and Ansari (2017) [35]. This robust instrument is explicitly designed to assess severe behavioural indicators, including compulsion, forgetfulness, lack of attention, depression and anxiety, disturbed hunger and sleep, and social withdrawal. Based on their cumulative responses, the scale categorised participants into seven distinct addiction levels: Very High, High, Above Average, Average, Below Average, Low, and Very Low. The implementation of this multi-tiered categorisation allows for highly granular insights into the severity of the students' psychological afflictions.

The operational execution of this study followed a strictly ordered analytical pipeline to maintain methodological integrity. The evaluation plan progressed through the following procedural steps:

1. Geographically random selection of participating higher education institutions within the Ludhiana district.
2. Random sampling of 400 (200 male & 200 female) eligible fifth-semester Arts Undergraduate Students.
3. Supervised administration of the standardised smartphone addiction scale to ensure data fidelity and high response rates.
4. Aggregation of psychometric scores followed by the execution of an independent samples t-test to evaluate the statistical significance of the null hypothesis regarding gender disparities.

#### 4. DISCUSSION

The empirical analysis yielded profound insights into the differing degrees of smartphone dependency between genders. The statistical evaluation revealed a mean smartphone addiction score of 47.7550 for male students, which was markedly higher than the mean score of 37.8100 observed among female students. An independent samples t-test produced a t-ratio of 8.030 and a p-value of 0.000, falling well below the standard 0.05 significance threshold. Consequently, the null hypothesis (H<sub>0</sub>) is unequivocally rejected, confirming that male undergraduates exhibit statistically higher levels of technological addiction than their female counterparts. From a practical deployment perspective, these stark results necessitate the immediate design and implementation of gender-specific digital wellness interventions within university counselling centres.

Despite the robustness of the statistical findings, several limitations and potential failure modes within the study must be acknowledged. First, the data collection relied heavily on self-reported psychometric scales, which inherently introduces the risk of social desirability bias or inaccurate self-assessment. Second, the participant sample was exclusively restricted to fifth-semester students within the Arts Stream, meaning the observed behavioural patterns may not entirely map onto students operating in highly intensive, mathematics-oriented STEM disciplines. Third, the geographical confinement to the Ludhiana district suggests that unique cultural or economic variables might limit the generalizability of these exact numerical conclusions to broader international contexts. Recognising these methodological constraints is essential for accurately contextualising the severity of the observed addiction levels.

Furthermore, the formulation and execution of targeted psychological studies entail significant ethical considerations and risks that institutions must navigate. One major ethical concern involves the potential stigmatisation of male students, who might be unfairly stereotyped by faculty as inherently prone to digital addiction or pathological distraction. Another critical risk relates to the privacy and security of sensitive psychological data, especially when dealing with variables identifying depression, anxiety, and social withdrawal among young adults. Educational institutions must ensure that diagnostic results are utilised strictly for supportive interventions rather than punitive academic measures or disciplinary tracking. Navigating these complex ethical landscapes requires transparent consent protocols and rigorous data anonymisation.

Moving forward, this research opens several vital pathways for future academic inquiry and institutional policy development. Future work should prioritise longitudinal tracking to determine how these gender-specific addiction patterns evolve as students transition from undergraduate studies into high-stress professional careers. Additionally, subsequent studies must explore the integration of objective physiological monitoring—such as screen-time tracking applications or biometric sensors to complement traditional self-reported questionnaires (Bhattacharjee et al., 2021) [10]. By expanding the methodological toolkit to include direct digital telemetry, researchers can develop highly adaptive, real-time wellness

programs that proactively protect the psychological health of vulnerable student populations.

## 5. CONCLUSION

The pervasive infiltration of mobile technology into the academic sphere demands rigorous empirical scrutiny to mitigate its adverse psychological impacts. This paper successfully investigated the hypothesis regarding gender parity in smartphone addiction among undergraduate students. By analysing a balanced cohort of 400 (200 male & 200 female) fifth-semester arts undergraduate students using a standardised psychometric scale, the study provided definitive evidence that male undergraduates suffer from significantly higher levels of digital dependency than their female peers. The unequivocal rejection of the null hypothesis challenges the efficacy of generalised administrative responses to modern student mental health crises.

Ultimately, the findings underscore an urgent need for systemic reform in how higher education institutions approach digital wellness and student support. Administrators and counselling centres must move beyond generic advisories and actively deploy gender-specific support frameworks that address the distinct psychological triggers of their diverse student bodies. By embracing targeted, data-driven interventions, universities can effectively combat the insidious rise of digital addiction and foster healthier, more focused academic communities. Addressing this modern technological epidemic is not merely a matter of academic optimisation, but a fundamental obligation to the holistic well-being of the next generation.

## REFERENCES

- Achangwa C, Ryu HS, Lee JK, Jang JD. Adverse effects of smartphone addiction among university students in South Korea: A systematic review. *Healthcare*. 2023;11(1):14. doi:10.3390/healthcare11010014.
- Acharya JP, Acharya I, Waghrey D. A study on some of the common health effects of cell phones amongst college students. *Journal of Community Medicine and Health Education*. 2013;3:214-226. doi:10.4172/2161-0711.1000214.
- Al Ali N, Matarneh S. Exploring the role of smartphone use and demographic factors in predicting nomophobia among university students in Jordan. *International Journal of Adolescence and Youth*. 2024;29(1):2302400.
- Alahdal WM, Alsaedi AA, Garrni AS, Alharbi FS. The impact of smartphone addiction on sleep quality among high school students in Makkah, Saudi Arabia. *Cureus*. 2023;15(6):e40759.
- Al-Barashdi HS, Bouazza A, Jabur NH. Smartphone addiction among university undergraduates: A literature review. *Journal of Scientific Research and Reports*. 2015;4(3):210-225. doi:10.9734/JSRR/2015/12065.
- Altaany FH, Jassim FA. Impact of Facebook usage on undergraduate students' performance in Irbid National University: Case study. *International Journal of Engineering Research and Applications*. 2013;3(4). Available from: <http://arxiv.org/pdf/1306.4779v1>
- Awinashe MV, Jain A, Santhosh VC, Choudhury BK, Alessa N, Babaji P. Smartphone addiction and its impact on knowledge, cognitive and psychomotor skills among dental students in India: An observational study. *Journal of Education and Health Promotion*. 2023;12(1):77.
- Balasubramanian N, Parayitam S. Fear of missing out, smartphone addiction and academic performance: Smartphone obstacles and positive affect as moderators. *Knowledge Management and E-Learning*. 2023;15(4):614-642.
- Beranuy M, Oberst U, Carbonell X, Chamarro A. Problematic internet and mobile phone use and clinical symptoms in college students: The role of emotional intelligence. *Computers in Human Behaviour*. 2009;25(5):1182-1187.
- Bhattacharjee A, Haque SMT, Hady A, Alam SMR, Rabbi M, Kabir MA, Ahmed SI. Understanding the social determinants of mental health of undergraduate students in Bangladesh: An interview study. 2021. Available from: <http://arxiv.org/pdf/2109.0283v1>
- Boumosleh J, Jaalouk D. Smartphone addiction among university students and its relationship with academic performance. *Global Journal of Health Science*. 2018;10(1):48-59.
- Bukhori B, Said H, Wijaya T, Nor FM. The effect of smartphone addiction, achievement motivation, and textbook reading intensity on students' academic achievement.
- Cheever NA, Rosen LD, Carrier LM, Chavez A. Out of sight is not out of mind: The impact of restricting wireless mobile device use on anxiety levels among low, moderate and high users. *Computers in Human Behaviour*. 2014;37:290-297. doi:10.1016/j.chb.2014.05.002.
- Christensen MA, Bettencourt L, Kaye L, Moturu ST, Nguyen KT, Olgin JE, Pletcher MJ, Marcus GM. Direct measurements of smartphone screen-time: Relationships with demographics and sleep. *PLOS ONE*. 2016;11(11):1-14. doi:10.1371/journal.pone.0165331.
- CMR India. Vivo-CMR study: The average Indian spends over 1,800 hours a year on their smartphone. 2019. Available from: <https://cmrindia.com/vivo-cmr-study-average-indian-spends-over-1800-hours-a-year-on-their-smartphone/>
- Demirci K, Orhan H, Demirdas A, Akpınar A, Sert H. Validity and reliability of the Turkish version of the Smartphone Addiction Scale in a younger population. *Bulletin of Clinical Psychopharmacology*. 2014;24(3):226-234.
- Dixit S, Shukla H, Bhagwat A, Bindal A, Goyal A, Zaidi A, Shrivastava A. A study to evaluate mobile phone dependence among students of a medical college and the associated hospital of central India. *Indian Journal of Community Medicine*. 2010;35(2):339-341. doi:10.4103/0970-0218.66878.
- Dongre AS, Inamdar IF, Gattani PL. A study to evaluate mobile phone dependence and the impact of cell phones on health. *National Journal of Community Medicine*.

- 2017;8(11):688-693. Available from: <https://njemindia.com/index.php/file/article/view/1650>
19. Durak HY. Investigation of nomophobia and smartphone addiction predictors among adolescents in Turkey: Demographic variables and academic performance. *The Social Science Journal*. 2019;56(4):492-517. doi:10.1016/j.soscij.2018.09.003.
  20. Hohn C, Schmid SR, Plamberger CP, Bothe K, Angerer M, Gruber G, et al. Preliminary results: The impact of smartphone use and short-wavelength light during the evening on circadian rhythm, sleep and alertness. *Clocks and Sleep*. 2021;3(1):66-86.
  21. Kahari L. The effects of cell phone use on the study habits of University of Zimbabwe first-year Faculty of Arts students. *International Journal of Education and Research*. 2013;1(10):1-12. Available from: <https://www.ijern.com/journal/October-2013/41.pdf>
  22. Naser AY, Alwafi H, Itani R, Alzayani S, Qadus S, Al-Rousan R, et al. Nomophobia among university students in five Arab countries in the Middle East: Prevalence and risk factors. *BMC Psychiatry*. 2023;23(1):541.
  23. Méndez ML, Padrón I, Fumero A, Marrero RJ. Effects of internet and smartphone addiction on cognitive control in adolescents and young adults: A systematic review of fMRI studies. *Neuroscience and Biobehavioral Reviews*. 2024;105572.
  24. Merlo LJ, Stone AM, Bibbey A. Measuring problematic mobile phone use: Development and preliminary psychometric properties of the PUMP Scale. *Journal of Addiction*. 2013;1-7. doi:10.1155/2013/912807.
  25. Parasuraman S, Sam AT, Yee SWK, Chuon BLC, Ren LY. Smartphone usage and increased risk of mobile phone addiction: A concurrent study. *International Journal of Pharmaceutical Investigation*. 2017;7(3):125-131. doi:10.4103/jphi.JPHI\_56\_17.
  26. Petrucco C, Agostini D. Problematic smartphone use and university students' academic performance. *Journal of E-Learning and Knowledge Society*. 2023;19(2):30-38.
  27. Raj S. A study of nomophobic behaviour, insomnia problems and smartphone addiction among undergraduate students and its impact on their academic performance [PhD thesis]. Chandigarh: Panjab University; 2025.
  28. Shambare R, Rugimbana R, Zhou T. Are mobile phones the 21st century addiction? *African Journal of Business Management*. 2012;6(2):573-577. doi:10.5897/AJBM11.1940.
  29. Sharma D, Goel NK, Sidana A, Kaura S, Sehgal M. Prevalence of smartphone addiction and its relation with depression among school-going adolescents. *Indian Journal of Community Health*. 2023;35(1):27-31.
  30. Sharma K, Sarathamani T, Bhoulal SK, Singh HK. Smartphone-induced behaviour: Utilisation, benefits, nomophobic behaviour and perceived risks. *Journal of Creative Communications*. 2021;17(3). doi:10.1177/0973258620979519.
  31. Somu M. A study to determine the effect of smartphone addiction on academic performance and mental well-being of college students in the post COVID-19 scenario. *International Journal of Research Publication and Reviews*. 2023;4(3):1217-1221.
  32. Statista. Number of mobile phone users in India from 2013 to 2019 (in millions). 2023. Available from: <https://www.statista.com/statistics/274658/forecast-of-mobile-phone-users-in-india/>
  33. Statista. Global smartphone sales to end users from 2007 to 2024. 2024. Available from: <https://www.statista.com/statistics/263437/global-smartphone-sales-to-end-users-since-2007/>
  34. Talan T, Doğan Y, Kalinkara Y. Effects of smartphone addiction, social media addiction and fear of missing out on university students' phubbing: A structural equation model. *Deviant Behaviour*. 2024;45(1):1-14.
  35. Vijayshri, Ansari S. *Smartphone Addiction Scale*. Agra: National Psychological Corporation; 2017.

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