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The addictive power of short-video applications: the impact on the quality of sleep and attentional control among Moroccan University students.

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Abstract:
The use of short video applications (TikTok, Instagram...) is booming among the general population, especially young people and students. These applications offer entertaining and addictive content, accessible in a matter of seconds. The constant stimulation and rapid gratification cycle encourages compulsive scrolling with short attention spans, which leads us to wonder about the impact this particular behavioral addiction could have on students' ability to concentrate and their quality of sleep.
Results: a sample of 163 Moroccan university students completed a questionnaire comprising 3 scales:

- Bergen Social Media Addiction Scale (BSMAS): the term “social media” was replaced by “short-form video platforms”.
- Pittsburgh Sleep Quality Index (PSQI): to measure sleep quality.
- The Attention Control Scale- short version (ATCC- short form): to assess concentration and distractibility.

The results show that 39.5% of students have a BSMAS above 15 and 53.4% consider themselves addicted to short video platforms (videos from 3s to 10min maximum).
The most used platform is Instagram with a percentage of 84.5% followed by Tiktok in 54.4% of cases. YouTube Shorts and reel Facebook come last.
The study revealed that 53.4% of students spend between 1 and 3 hours a day scrolling through short videos, and 10.7% spend more than 5 hours a day.
A positive correlation was found between our 3 variables: short form video addiction, quality of sleep and distractibility ($p < 0,01$).

INTRODUCTION:

Short-form video platforms have attracted growing interest in recent years, especially among teenagers and Gen-Z.
Addiction to this entity is a subset of internet addiction disorders that has been characterized as an impulse disorder by which an individual experiences intense preoccupation with using the Internet, difficulty managing time on the Internet, becoming irritated if disturbed whilst online, and decreased social interaction in the real world(1).
Internet addiction has not been recognized in the Diagnostic and Statistical Manual of Mental Disorders. Yet the frequency of addiction to short-form video platforms is not negligible(2). Thanks to their constant stimulation and diverse, captivating content, the short format promotes a rapid cycle of dopaminergic gratification, providing instant gratification and encouraging the constant search for new videos.

Tiktok, for example, had 800 million downloads worldwide in 2018(3). All social networks have adopted this form of short-length videos with scrolling functionality, notably Instagram reels, Youtube shorts, Facebook reels...
Undergraduates students are the primary consumers of short video applications(4).
And this growing popularity leads us to question the impact that excessive use could have on students' quality of sleep and concentration.
The objective of our study is to try to answer to this question.

MATERIAL AND METHODS:

- Study population: The study was conducted on a sample of 163 Moroccan undergraduates' students over the period August 2024 to October 2024 (3 months).

- **Inclusion criteria:** Moroccan university students aged 18-30 who use short-video platforms at least once a week.
- **Exclusion criteria:** Individuals with diagnosed sleep disorders, ADHD, or other neurological/psychiatric conditions affecting concentration.

- Tools and Data Collection:

An English questionnaire created in google form was shared in student's groups on Facebook. It was strictly anonymous and adhered the rules of voluntary completion.
Our questionnaire was designed to measure the population's socio-demographical properties and used the following 3 scales for addiction, quality of sleep and concentration:

- Bergen Social Media Addiction Scale (BSMAS)(5): the term "social media" was replaced by "short-form video platforms".
- Pittsburgh Sleep Quality Index (PSQI)(6): to measure sleep quality.
- The Attention Control Scale- short version (ATCC- short form)(7): to assess concentration and distractibility.

- Data management and analysis:

First, the study population was described according to several demographic characteristics.

Next, we investigated the correlation between addiction to short video platforms, sleep quality and distractibility; in all statistical tests, the significance threshold (p-value) was set at 0.05.
Statistical analysis was performed using the JAMOVI software.

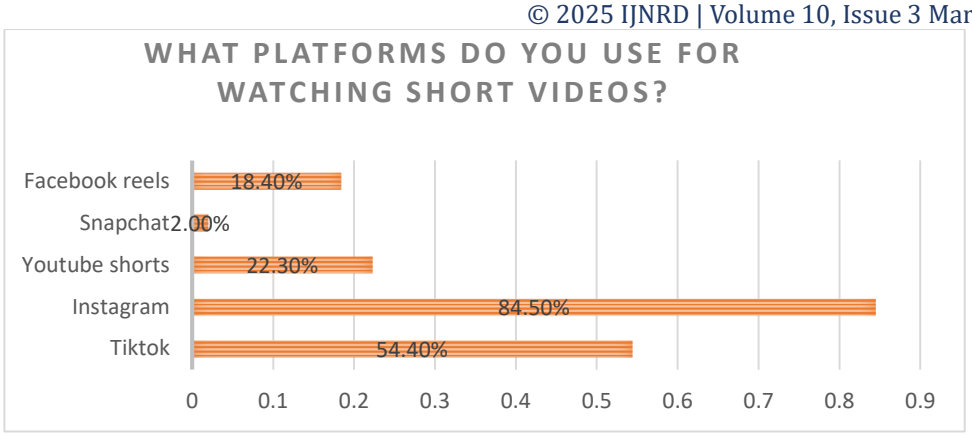
RESULTS:

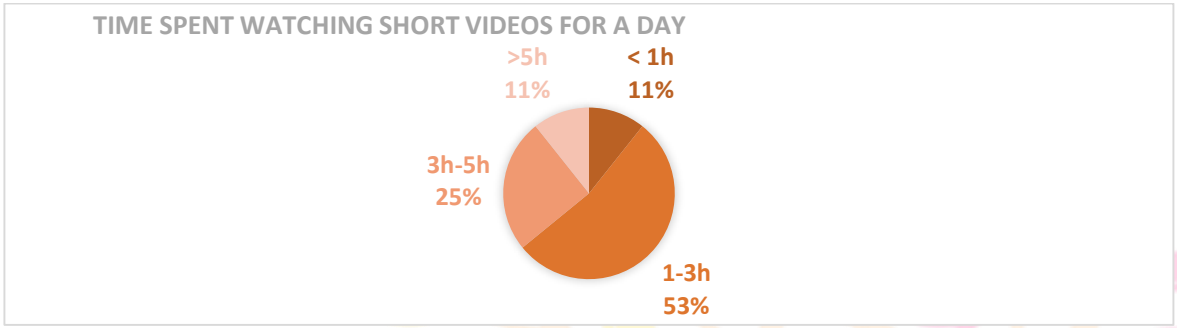
1- <u>Socio-demographic characteristics:</u>

A total of 163 undergraduate students completed the questionnaire. All of them were Moroccans and from Moroccan universities.
The predominant age group was 20-24, with an average age of 23. There was a clear feminine predominance with a percentage of 68.9%. Respondents had a university level between 1-7 years, of which 27.2% were in 5th year, 23.3% in 4th year, 14.6% in 3rd year, with a percentage of 9.7% for 2nd, 6th and 7th year.

2- <u>The addiction:</u>

Students considering themselves addicted to short video platforms were 46,6% and a majority of 53.4% had a time-watch of 1-3 hours. The most frequently used platform was Instagram with a percentage of 84.5%, followed by Tiktok with 54.4%.





- Scores on the modified Bergen Social Media Addiction scale (adapted to measure addiction to short-form video platforms) ranged from 6 to 29, with an average of 14.46.

- Quality of sleep: Scores on the Pittsburgh Sleep Quality Index ranged from 0 to 16, with an average of 6,66. Besides, 38% of the respondents had a PSQI ≥ 8.

- Concentration and distractibility: scores on The Attention Control Scale- short version (ATCC-short form) ranged from 10 to 37, with a mean of 26.

3- Correlation:

The results reveal positive correlations between these factors:

A positive correlation (Spearman's r= 0.273, p= 0.005 < 0.01) was found between addiction to short video platforms and poor sleep quality, suggesting that students who frequently engage in short-video scrolling tend to have worse sleep. However, causality cannot be inferred from this result. Similarly, a positive correlation (Spearman's r= 0.217, p= 0.028 < 0.05) was observed between addiction to short videos and distractibility, reinforcing the idea that prolonged exposure to such content might impact attentional control.
A positive correlation (Spearman's r= 0.257, p= 0.009 < 0.01) between sleep quality and students' concentration levels suggests that students with poor sleep quality tend to have more concentration difficulty.

Although the study identified significant correlations between short-video addiction, sleep quality, and attentional control, correlation does not imply causation. While excessive short-video use may contribute to poor sleep, it is equally possible that sleep disturbances increase reliance on these platforms as a coping mechanism. Future studies should employ longitudinal designs to clarify these relationships.

DISCUSSION:

Nowadays, we´re living in the age of internet. It has brought about a number of changes in our lives. While there are certain advantages to its use, excessive use has raised worries about its possible drawbacks, including

addiction. There are some specific Internet addictions: smartphones, social media, and other particular Internet addictions that share comparable characteristics(8).
Unlike social media, which is a broad border area, short videos are an independent and developing research topic with a defined definition of terms in the field of internet addiction research.
Short videos are videos that are < 15 min in length, mostly between 1 and 5 min, and have a clear theme type (9). By involving users in brief periods, they offer a number of distinctions from conventional social media and games, making it simple to manage withdrawal and balance work and pleasure with an immediate sense of satisfaction(9). However, short-video apps' entertaining and user-friendly features encourage people's propensity for misuse and make it difficult to contain the urge.
For example, 22% of TikTok users spend more than 1 hour per day (10). According to our study that included all the platforms, 54% spend 1 to 3 hours scrolling which is a very high rate.

Overuse of short-video programs can lead to addictive behavior, much as internet or social media addiction. This addiction is encouraged by several properties(3)(11):

- Stories that are condensed into a short period of time are more effective in engaging viewers than lengthy videos.
- More appeals to the younger generation with little or no requirement for technology know-how.
- Engaging through short bursts or thrills. Rather than expansive, long durations of stories (12).
- Strong algorithm systems that automatically pair users' preferred videos with content(13).

Many people claimed that their usage had increased to the point where it was interfering with their everyday life (e.g., poor time management, low learning and work efficiency)(11)(4).

Additionally, it has been discovered that students who are addicted to short-form videos may experience poor sleep and academic burnout(14)(15). Still, the excessive use of short- video apps has only received beginning attentions.

A Chinese study was published with the goal of studying the impact of short-video addiction on the quality of sleep of college students(16). Overall. 25,2% students had problems with sleep quality. In our study, 38% of the respondents had a PSQI ≥ 8.
Additionally, several previous studies have shown that short video addiction has a major impact on college students' sleep quality(17) (18).

There is a positive correlation between college students' scores on short video addiction and their sleep quality, but procrastination and physical activity scores have a negative correlation(16). Short video addiction directly affects college students' sleep quality, indirectly through physical activity and procrastination behavior. Those findings confirm the results of our study.

The most important factor linked to sleep disruption is smartphone use, particularly in bed time(19)(18). Thus, scrolling short videos on the phone for extended periods of time before bedtime is likely to increase sleep procrastination behaviors and lower the quality of sleep. Internet use causes procrastination before bed, which has a detrimental impact on both the quantity and quality of sleep(20).

Reduced nighttime procrastination can assist college students improve their sleep quality, especially those who have a nocturnal sleep pattern. Research indicates that student' sleep length is significantly impacted by bedtime procrastination(21).

Zhe et al. also confirm the value of exercise in reducing addiction to short videos, procrastinating, and enhancing the quality of sleep(16).

Short-video addiction does not only affect students´ sleep but also their academic performance. It is linked to impairments in attentional control and increased distractibility, which negatively affect academic

performance(22). Attentional control, the cognitive function that regulates attention allocation, is crucial for focusing on relevant tasks while suppressing distractions (7)(23).

Short-form video addiction is thought to disrupt this ability, as studies on highly stimulating media, like television, show that such content hampers the ability to maintain attention on other tasks (24).

The fast-paced, highly arousing nature of short-form videos further exacerbates this effect, diverting cognitive resources toward visual and emotional stimuli rather than task-related functions(25)(26)(27).

This impairment in attentional control increases distractibility, making it harder to focus on academic tasks. Students with weakened attentional control are more susceptible to distractions, such as watching videos, even when they intend to concentrate on studies(28).

Neurologically, an imbalance between executive control and the reward network, seen in conditions like internet gaming disorder, may contribute to this issue(27). Reduced executive control leads individuals to prioritize immediate rewards (e.g., watching videos) over long-term goals (e.g., academic achievement), fostering procrastination (29)(30). Thus, short-form video addiction impairs attentional control, increasing distractibility and promoting academic procrastination.

CONCLUSION:

In conclusion, significant concerns regarding the influence of short-form video platforms on mental and academic well-being have been raised by their rapid rise, especially among students.

According to our study, a considerable number of Moroccan university students suffer from short-form video addiction, with many of them spending excessive amounts of time on sites like Instagram and TikTok. Academic performance is eventually hampered by this misuse, which is linked to impaired sleep quality, more procrastination, and decreased attentional control. The addictive power of short-video apps, characterized by their fast-paced content and immediate gratification, interfere with the cognitive functions required for long-term focus and concentration.

These findings underscore the need for targeted interventions to mitigate the effects of short-form video addiction, promote better time management, and encourage healthier habits, such as physical activity, to improve both sleep quality and academic outcomes. As this issue gains more attention, future research should continue to explore effective strategies to address these growing concerns and help students balance their digital engagement with academic and personal well-being.

LIMITATIONS AND BIAS DISCUSSION: While this study provides valuable insights, several limitations must be acknowledged:

- **Selection bias:** The use of Facebook groups for participant recruitment may have led to a non-representative sample, primarily including students who are highly engaged with social media.
- **Self-reporting bias:** Data collection relied on self-reported responses, which may be subject to recall bias and social desirability effects.
- **Lack of causality:** As previously discussed, correlation does not imply causation. Future research should employ experimental or longitudinal designs to better understand causal mechanisms.

BIBLIOGRAPHY:

1. Tikhonov MN, Bogoslovskii MM. Internet addiction factors. Autom Doc Math Linguist. 1 mai 2015;49(3):96-102.

2. Pu, Y.X, Yang, D.H, Yan, W.Y. The relationship between negative life events and short video addiction among college students: the mediating role of self-compensatory motivation. J Nanjing Univ Trad Chin. 2023;Med, 24, 204-210.

3. Zhang N, Hazarika B, Chen K, Shi Y. A cross-national study on the excessive use of short-video applications among college students. Comput Hum Behav. 1 août 2023;145:107752.

4. Olasina G, Kheswa S, | |. Exploring the factors of excessive smartphone use by undergraduate students. Knowl Manag E-Learn Int J. 26 avr 2021;13(1):118-41.

5. Zarate D, Hobson BA, March E, Griffiths MD, Stavropoulos V. Psychometric properties of the Bergen Social Media Addiction Scale: An analysis using item response theory. Addict Behav Rep. 6 déc 2022;17:100473.

6. Buysse DJ, Reynolds CF, Monk TH, Berman SR, Kupfer DJ. The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. Psychiatry Res. mai 1989;28(2):193-213.

7. Derryberry D, Reed MA. Anxiety-related attentional biases and their regulation by attentional control. J Abnorm Psychol. mai 2002;111(2):225-36.

8. Chen IH, Chen CY, Pakpour AH, Griffiths MD, Lin CY, Li XD, et al. Problematic internet-related behaviors mediate the associations between levels of internet engagement and distress among schoolchildren during COVID-19 lockdown: A longitudinal structural equation modeling study. J Behav Addict. 10 févr 2021;10(1):135-48.

9. Zhang X, Wu Y, Liu S. Exploring short-form video application addiction: Socio-technical and attachment perspectives. Telemat Inform. 1 sept 2019;42:101243.

10. Biznext. (2018). In Chinese) billion new user bonus quest: User report on TikTok and kuaishou user. http://tech.qq.com/a/20180409/002763.htm.

11. Gao W, Liu Z, Li J. How does social presence influence SNS addiction? A belongingness theory perspective. Comput Hum Behav. 1 déc 2017;77:347-55.

12. Liao M. Analysis of the causes, psychological mechanisms, and coping strategies of short video addiction in China. Front Psychol. 2024;15:1391204.

13. Qin Y, Omar B, Musetti A. The addiction behavior of short-form video app TikTok: The information quality and system quality perspective. Front Psychol. 6 sept 2022;13:932805.

14. Chalermchutidej W, Manaboriboon B, Sanpawitayakul G, Theppiban S, In-Iw S. Sleep, social media use and mental health in female adolescents aged 12 to 18 years old during the COVID-19 pandemic. BMC Pediatr. 14 août 2023;23(1):398.

15. Vansoeterstede A, Cappe E, Lichtlé J, Boujut E. A systematic review of longitudinal changes in school burnout among adolescents: Trajectories, predictors, and outcomes. J Adolesc. févr 2023;95(2):224-47.

16. Zhao Z, Kou Y. Effect of short video addiction on the sleep quality of college students: chain intermediary effects of physical activity and procrastination behavior. Front Psychol. 11 janv 2024;14:1287735.

17. Cain N, Gradisar M. Electronic media use and sleep in school-aged children and adolescents: A review. Sleep Med. 1 sept 2010;11(8):735-42.

18. Dissing AS, Andersen TO, Nørup LN, Clark A, Nejsum M, Rod NH. Daytime and nighttime smartphone use: A study of associations between multidimensional smartphone behaviours and sleep among 24,856 Danish adults. J Sleep Res. déc 2021;30(6):e13356.

19. Aili K, Åström-Paulsson S, Stoetzer U, Svartengren M, Hillert L. Reliability of Actigraphy and Subjective Sleep Measurements in Adults: The Design of Sleep Assessments. J Clin Sleep Med JCSM Off Publ Am Acad Sleep Med. 15 janv 2017;13(1):39-47.

20. Liu H, Ji Y, Dust SB. « Fully recharged » evenings? The effect of evening cyber leisure on next-day vitality and performance through sleep quantity and quality, bedtime procrastination, and psychological detachment, and the moderating role of mindfulness. J Appl Psychol. juill 2021;106(7):990-1006.

21. Zhu Y, Huang J, Yang M. Association between Chronotype and Sleep Quality among Chinese College Students: The Role of Bedtime Procrastination and Sleep Hygiene Awareness. Int J Environ Res Public Health. 23 déc 2022;20(1):197.

22. Xie J, Xu X, Zhang Y, Tan Y, Wu D, Shi M, et al. The effect of short-form video addiction on undergraduates' academic procrastination: a moderated mediation model. Front Psychol. 15 déc 2023;14:1298361.

23. Hopfinger JB, Slotnick SD. Attentional Control and Executive Function. Cogn Neurosci. janv 2020;11(1-2):1-4.

24. Swing EL, Gentile DA, Anderson CA, Walsh DA. Television and video game exposure and the development of attention problems. Pediatrics. août 2010;126(2):214-21.

25. Ophir E, Nass C, Wagner AD. Cognitive control in media multitaskers. Proc Natl Acad Sci U S A. 15 sept 2009;106(37):15583-7.

26. Peng M, Chen X, Zhao Q, Zhou Z. Attentional scope is reduced by Internet use: A behavior and ERP study. PloS One. 2018;13(6):e0198543.

27. Moisala M, Salmela V, Hietajärvi L, Salo E, Carlson S, Salonen O, et al. Media multitasking is associated with distractibility and increased prefrontal activity in adolescents and young adults. NeuroImage. 1 juill 2016;134:113-21.

28. Ma M, Li M, Wang Q, Qiu A, Wang T. Online self-regulated learning and academic procrastination: A moderated mediation model. Psychol Sch. 2022;59(9):1856-72.

29. Dong G, Lin X, Hu Y, Xie C, Du X. Imbalanced functional link between executive control network and reward network explain the online-game seeking behaviors in Internet gaming disorder. Sci Rep. 17 mars 2015;5(1):9197.

30. Brand M, Wegmann E, Stark R, Müller A, Wölfling K, Robbins TW, et al. The Interaction of Person-Affect-Cognition-Execution (I-PACE) model for addictive behaviors: Update, generalization to addictive behaviors beyond internet-use disorders, and specification of the process character of addictive behaviors. Neurosci Biobehav Rev. sept 2019;104:1-10.