IJCESA
International Journal of Community Empowerment & Society Administration
Volume 2 Issue 4 October 2025 / Paper Id: IJCESA-V2I4P108/ Page No: 60-67

Original Article

Short-form Video Use and Sustained Attention: A Narrative Review (2019–2025)

Keith Robert Head
School of Nursing and Health Sciences, Capella University, MN, USA

Received Date: 15 August 2025 Revised Date: 17 September 2025 Accepted Date: 20 October 2025

Abstract: *The explosive growth of TikTok and short-form media has revolutionized the social media habits of Gen Z and Millennials, leading to concerns about attention span in these user demographics. This narrative review covers literature published between 2019 and 2025, investigates the association between short-form video use and perception. Studies have shown that heavy use of TikTok and similar short-form media is associated with shorter attention spans, poorer academic performance and abnormal white matter in the brain linked to behavioral control, raising questions about excessive use and addiction. Young users seemingly of all ages, including perhaps in particular younger ones, may be especially susceptible to attention impairment as their brains continue to develop. Although current research methods have their limitations, the evidence suggests that frequent short-video use is associated with poorer cognitive functioning. Intervention in the form of education and clinical management is advocated for these areas and the need born from increase risk taking behaviour requiring further longitudinal investigations, research investigating long term consequences.*

Keywords: *Adolescent Cognitive Development, Digital Attention Deficit, Short-Form Video Content, Social Media Consumption, Screen Time.*

I. INTRODUCTION

TikTok has become a sensation since 2019. No other platform has grown in popularity faster over the last five years, and its short-form videos have fast become on of the most dominant forms of digital culture. The app repeatedly plays short 15 tos videos back-to-back based on an autoplay algorithm with rapid stimuli changes, creating shifts between continuous streams of new content with nearly no user-initiated transition between the videos. It has been attributed with the popularisation of a new kind of social media, short-form videos. As of January 2024, the United States had close to 150 million monthly active TikTok users (MAU) and usage was particularly high among young people. It is one of the most frequently used social media apps for Generation Z) 2 Recent figures show that somewhere between 62–85% of Americans between the ages of 18-29 use TikTok on a regular basis (Gottfried, 2024). This widespread use has led to increasing concern over the platform's potential influence on cognitive development, specifically with respect to young users' attention spans. Plenty of commentators fret that exposure to the short-form media, from TikTok's ceaseless stream of bite-size videos to Buzzfeed listicles, is "killing" attention spans, in what some have colloquially labelled as "TikTok Brain". Teachers and parents report teenagers who find it hard to concentrate in school or with lengthy tasks, a problem they typically blame on too much constant social media scrolling (Crispo, 2024). These considerations are supported by evidence of the negative relationship between digital media multitasking, attentional resources and distractibility. In light of TikTok's unique structure — an algorithm-curated feed of super-short, personalized videos intended to engage ad infinitum — it's worthwhile considering how exactly the platform might be shaping attention in younger users.

Attention span, which involves the ability to sustain focused attention on some stimulus or task over time without distraction, is a basic cognitive skill upon underpinning several academic skills in that it is essential for academic achievement, job performance and daily life as well. The developmental neurosciences have provided conclusive evidence that executive attention systems, such as those projected to support sustained attention and cognitive control, experience significant maturation throughout the period of adolescence and emerging adulthood, rendering youth populations susceptible to environmental influences that might interfere with normal developmental trajectories. Traditional concerns regarding media effects and attention have focused on television watching and screen time more generally, however thanks to TikTok's specificity there are new considerations to be had. Algorithm-driven feeds, carefully crafted by the platform, serve personalized content tailored to maintain attention interest through novelty (e.g., never-ending new content), reward (after a short wait), and various unrelated alternatives (Kim.et al., 2024).

Early discourse and theorising has proposed that short-form media, such as TikTok, supplies quick rewards and new stimuli at an average rate of every 15–60 s per video, and conditions the brain to become expecting of constant stimulation which reduces its tolerance for long periods of time spent focussing on less immediately rewarding tasks. On

the other hand, supporters argue that TikTok has educational and creative value and app's brevity of attention is only bad if consumed at expense of all other activities. However, until recently very little empirical evidence on these questions existed. This review endeavours to address this gap by examining studies (2019–2025) of short form use and attention span. We concentrate largely on TikTok (and other similar short-video apps and forms of media) to capture the impact of this platform, with studies on overall screen time or other types of social media not covered unless data specific to short-form media are presented. The key questions that were addressed include: what impact does the use of short-form media have on users' attention (behaviorally and neurologically)? How is short-form media use related to academic or daily functioning in the area of attention? Do some subgroups (for example, heavy users or younger adolescents) fare worse? And what exactly could explain those relationships? Through assembling evidences from previous studies, we aim to discern the consistencies and inconsistences in evidence, as well as identification of gaps. This review will take a step toward further enlightenment about "TikTok and attention span" through the eyes of its researchers beyond the headlines. Ultimately, better understanding these relationships will help educators, parents, clinicians and policymakers to weigh the popularity and potential benefits of short form media against its risks to cognitive health.

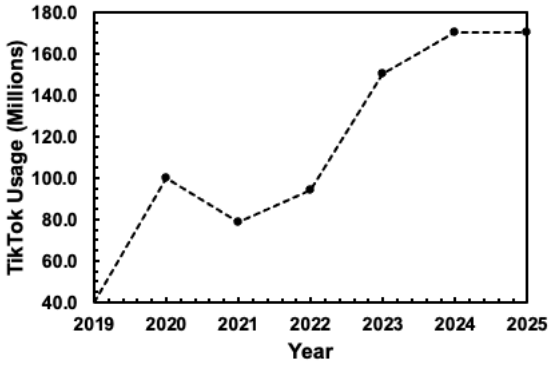

Figure 1 : Usage of Tik Tok in the U.S.

II. METHODS

We performed an extensive search of the literature to find empirical research studies investigating TikTok use and attention span or attentional-related results. We knew from the very beginning that this is an interdisciplinary topic. Our search strategy was therefore broad, aiming to retrieve documents from several educational databases such as PsycINFO, PubMed, ERIC, EBSCOhost, ResearchGate, Academia and Google Scholar. Search terms were jointed the keywords of the platform (such as "TikTok," "short-form video," "short video app,""Reels," "Shorts," "short video, " and "short-form") combined with attention related ones (including ("attention span","sustained attention","focus", "concentration", "attention deficit"). We additionally hand-searched the reference lists of relevant articles and recent review papers on social media and cognition to identify any further references. Our initial search period of interest was 2019-20258 for publications in English, but we included earlier literature or research from outside the United States when it made significant contributions to our areas of inquiry. In addition to preference for peer-reviewed material, preprints and grey literature from reputable repositories were included based on methodological quality and direct applicability. Both quantitative and qualitative study designs were included, but greater emphasis was placed on quantitative empirical research focusing on measurement of attention factors.

Our search initially identified 81 candidate publications from our extensive search. After de-duplication and title/abstract screening, 32 sources were identified for full-text review. We excluded from these the ones that did not meet this criteria when read in detail (for example, studies on "social media use" without isolating TikTok effects, or clinical commentaries without empirical data). The final review synthesis is informed by 14 main studies and reports that specifically explored the relationship of TikTok or short-form video use to attention outcomes. These include cross-sectional surveys, correlational studies using psychometric scales, experimental or quasi-experimental studies (e.g. cognitive testing before/after short-form media exposure), and neuropsychological research. We also removed articles that did not separately report short-form video effects, editorials, and reports without primary data. We gathered information on study design, participant characteristics, measures of attention administration conditions, main findings and authors' interpretation. Due to heterogeneity of the modes, no formal analysis could be done. Rather, we use narrative synthesis in which findings are clustered around predominant themes.

In the analysis, we judged the strength of evidence regarding short-form media's effects on attention span in terms of convergence and discordance among independent studies. When provided, effect sizes or levels of significance for the links between short-form media use and attention measures are presented. In order to provide context for our

confidence in the concluding statements made by each study, a further criterion we considered was the methodological quality (e.g. sample size, objective vs. self-report measures of attention). This review identified three main themes that govern our review: (1) conclusion of decrease in attention and ability to focus, (2) effect on performance and education, (3) neurobiological effects and changes of dopamine system. Since this research was based solely on publicly available secondary sources and did not involve any direct participation of human subjects, it was exempt from IRB review and approval. In the presentation of results, we synthesize evidence to answer the review questions and in the discussion we consider mechanisms, practical implications and areas for future research.

III. ANALYSIS

High frequency and long concentration of usage (eg, app-specific across short-form media like TikTok) are features of youth and young adults' use of apps found throughout literature. Afternoon lunch hour in Tokyo, The Associated Press turned on Tokyo's local radio programs providing information and soothed listeners with popular music that people cannot yet enjoy.. Survey data show teens and young adults often while away hours daily watching short videos on apps like TikTik. Estimations may range, but daily durations spent by TikTok-users are estimated at an average of 59 to 95 minutes/ day-each comprising usage hundreds of video clips on the same day (Galanis et al., 2024; von Fedak & Langlais, 2024). Such extensive use offers plenty of chances for quick attention shifts between pieces of content. These types of use patterns have left mental health professionals and educators to wonder if a connection exists with attention challenges. Even before researches took notice, pediatric doctors called TikTok a "dopamine machine" that conditions kids to crave immediate rewards and issued warnings about their ability to withstand tasks devoid of the platform's fast-moving gratification (Burhan & Moradzadeh, 2020).

These concerns were beginning to be supported by some empirical research since 2019. The data is the same regardless of whether you ask them about themselves, or independently evaluate ATTENTIONAL SPAN in self-report and experimental data across ideas of "heaviness" versus lightness to non-users. Notably, "attention span" can be measured in various ways. Some studies include subjective reports (users rating their own attention, or teachers reporting student behavior) while others include objective measures of a behavioral measure of sustained attention. Nevertheless, the consistency of the overall set of results aligned with the same direction indicates that increased use of TikTok is related to worse sustained attention and a combination include negative academic achievement and behavioral outcomes.

A. Reduction in Attention Capacity

Although limited attention span research exists, there is some evidence of a negative relationship between hours of TikTok and short-form video viewing (short-form video use) and self-reported attentiveness. One of the studies by Alghamdi and Aljabr (2024) conducted an online survey on more than 200 young adult TikTok users (mean age ~23, most were workers) as to therapeutic effect on cognition. They discovered that time spent on TikTok was strongly related to an inability to pay attention, as reported by the participants. Greater number of hours per day watching TikTok or reporting higher emotional attachment to TikTok were significantly associated with poorer attention scores. The findings of the present study indicate that the severity of attention problems in everyday life is associated with two factors, the amount of exposure to TikTok and psychological dependence on it.

Officers and do their usual exercise bubbles are not shown each other.Similar relationship between heavy use of short-form videos, TikTok with complaints of difficulty concentrating has been among adolescents and college-aged students. The impact of reels was also found in research by Trendeline Haliti-Sylaj and Alisa Sadiku (2024), who found that college students exposed to frequent viewing a short form video "reels" (including on TikTok) were significantly less able to sustain attention than moderate users. This loss of attention was not merely a subjective feeling; rather, it reflected concrete results such as difficulty in maintaining engagement or focus. In a second self-reported study of 1,047 college students from China, the researchers looked at the association between short-form video addiction and procrastination. Short-form video addiction directly predicted an increase in procrastination and both direct effect and indirect through attentional control were significant, with the impact of short-form video addiction on attentional control being weaker for students scoring higher on boredom proneness (Xie et al., 2023). In a study of 44 Chinese university students that used both self-report and eye-tracking tools, researchers found that those addicted to short-form video viewing exhibited reduced attention in relation to when the participants watched videos as well as afterward. High usage also increased fixation counts, decreased duration of fixations during watching task, and deteriorated subsequent attention tasks as compared to non-addicted users, demonstrating short-form video addiction was correlated with decreases in both sustained attention and the ability of focusing when process information. (Chen et al., 2022). Another 1086 Chinese adolescent students study found that short video use intensity was positively correlated with short video addiction, "TikTok brain" (self-perceived mood improvement), and impaired attention control (Ye et al., 2025).

Although further work is needed, these initial findings indicate that TikTok and other short-form video platforms may be detrimental for attention span. What is particularly worrying, however, is the much worse outcomes faced by those already vulnerable to addiction. Curiously, the more people are prone to being bored, the less they seem to be affected in their attention by video addiction – presumably because they may not get as immersed or sucked into the repetitive material. More study is required on the cognitive outcomes of consuming short-form video long-term, to determine causation rather than correlation, and whether these attention detriments remain beyond when they've curbed or discontinued use.

B. Impact on Academic Performance

The academic performance is arguably the most frequently studied consequence of watching short videos. A number of studies have looked at whether use of TikTok or other short-form media are correlated with students' engagement and performance in academics, since maintaining attention is vital to learning. The results continue to indicate that heavy TikTok use is related to lower academic performance, and this seems to be (at least partly) explained by reduced attention and procrastination.

Undergraduates investigated by (Haliti-Sylaj & Sadiku 2014) reported elsewhere, short-form video consumption did affect negatively on academic performance as well as attentions pan on undergraduate students. heir study found that students who viewed reels more frequently had significantly lower GPAs, and viewing of reels explained 25% of the variance in academic achievement. Even when other factors like study habits and time spent on coursework were taken into account, heavy reel use was still a strong predictor of lower academic performance – indicating that because viewers often jump from one short piece of content to the next, they're not developing the attention skills needed for success at school. This led the authors to deduce that high-energy but brief content on TikTok and similar services "impairs the academic performance of students," probably as a result of making their brains' lights flicker much faster than they ought in class or while studying. This is also demonstrated in the study of Xie et al. (2023) indicating that short-form video addiction had a higher positive effect on academic procrastination and cause students to postpone homework, queue work and face challengingly with the timetable of their academic anemic motives through both direct influences and also indirect influence by weakened attentional control; it in fact decelerating directly the satisfaction from other resources might have negative effects on weak attentional control leading indirectly to failure academically.

In addition to self-report studies, Asif and Kazi (2024) found a negative association between hours spent on short videos and academic performance in secondary school students. Using a mixed-method approach, they found that greater daily TikTok viewing time was associated with lower exam scores for students based on quantitative data. Qualitative interviews with a sample of heavy users (4+ hours on TikTok per day) supported these findings. And these students confessed to attention problems and challenges focusing on homework, those that didn't interrupt study sessions to check TikTok — but still generally found longer reading assignments "boring" compared with the immediate shots of dopamine they get from online videos. In a systematic review about problematic TikTok use, researchers also found that young users with high scores of TikTok addiction had a higher likelihood to suffer consequences in academia and attention (Jain et al., 25).

In sum, these findings provide strong indication for an association between high-frequency TikTok use and poorer academic performance by reducing the time spent on academic tasks where students are able to maintain their concentration. The more that the focus decreases, the less is understood and remembered, and as a result one's grade point average plummets. In addition to indicators of inattentiveness, using TikTok also seems to drive procrastination. It's not just a decreased quality of study that students are feeling as a result of their distractions or inability to focus: they may also actually be studying less too, as they put off doing work for one chance to scroll through videos. This twofold effect-reduced concentration when studying and increased academic task avoidance-is likely to augment the adverse effects on students' academic achievement. Not all findings, however, are entirely negative with respect to educational settings. Aziz and Dali (2023) explored TikTok's application in a learning context, and found that short-form video clips—when well integrated into lessons—increased student engagement and could positively impact memory for certain knowledge areas.

C. Neurobiological Impact

Moreover, independent of behaviors, short-form media (including TikTok) has been posited to exert strong neurobiological influences on brain structure and function. Preliminary studies indicate that short form media use could influence the dopamine reward circuitry in a way similar to substance based addictive pathways (Zhang & Li, 2025). It delivers quickfire hits of rewarding stimuli that activate the brain's dopamine-led reward centres in a powerful way. Each quick video provides an instant hit, prompting a toot of dopamine in the brain's reward circuitry and rewarding a cycle of expectancy. Over time, the brake is undermined by this pattern of ever-frequent dopamine spikes: since people

have more and more difficulty once again restraining their impulses early in the cycle to say “no” to addiction’s call for immediate gratification (reÄthymia.) This behavior parallels a gambling-like intermittent schedule of reward. This hyperactivation is indicative of the hijacking of the mesolimbic dopaminergic pathway, whereby fast attentional shift on platforms such as TikTok and Instagram Reels result in multivalve release of dopamine leading to strong reinforcement loops (De et al., 2025). It’s this neuropsychological profile characterized by impulse control, novelty preference, low patience for delayed rewards, and little capacity to remain focused that people have colloquially been calling “TikTok brain,” in reference to the weighted prevalence of it among heavy TikTok users.

Preliminary neuroimaging and neurophysiological studies have started identifying links between excessive use, and structural and functional brain abnormalities. Yan et al. (2024) identified as those scoring high in short-video use tendencies, were characterized by notably low biological indicators of prefrontal executive function (e.g., reduced midfrontal theta power on EEG), along with a lack of self control. Supporting evidence is provided by MR studies from Gao et al. (2025) who demonstrated that, compared with control subjects, individuals with video addiction had higher gray matter volume in the reward system regions and increased neural activity in the dorsolateral prefrontal cortex, posterior cingulate cortex, temporal pole, and cerebellum. These changes indicate reward-processing regions expanding, but also hyperactivity in decision-related areas due to the repeated short-video stimulation. This neurobiological activity may mediate the behavioral effects such as impairments of attention and learning seen in heavy users of short-form media where reward circuits are being calibrated to crave constant stimulation over sustained cognitive effort. Consistent with these neurobiological theories, the Chinese adolescent study of 1086 young people mentioned earlier found that heavy short video use was associated with increased mood-enhancement motivations through watching videos (TikTok brain). This was in its turn correlated with addiction-related symptoms and reduced attentional control, which collectively provided behavioral support to the proposed dopaminergic mechanisms (Ye et al., 2025).

Although initial evidences support the neurobiological implications of repetitive exposure to short form media, it is crucial to highlight that this area of study is in its infancy and large voids still need to be addressed. Recorded works Are mostly in form of small size cross-sectional studies with little sized samples. While these early findings suggest emerging changes in dopamine reward circuitry and prefrontal executive control, there is limited longitudinal imaging evidence from ongoing neural development. This gap has led to no definitive conclusions about whether differences in use reflect adaptations to media exposure or (quite the opposite) pre-existing vulnerabilities that predispose some people toward heavy use. The long-term neurobiological effects of this type of short-form media consumption are yet to be understood, however further studies that explore underlying mechanisms and ascertain the degree to which brain changes may be reversed upon reduction or cessation of use would be beneficial.

IV. DISCUSSION

A. Synthesis of Findings

Cumulatively, the evidence from recent research indicates substantial challenges to sustained attention among young audiences in TikTok and related video-based short content platforms. The pattern seen in the data is robust, across multiple domains of cognition and academics. Addicted TikTok users experience a decrease in attention scope: these differences appear when comparing heavy and non-heavy users both subjectsively, through self-report (a heavy user on average spend at least 2 hours per day on TikTok), and objectively), with studies evidencing that witnessing over 2 h of TikTok videos per day corresponds to measurable cognitive strain with respect to light-users or abstainers. This association seems to be dose-dependent, with lower scores in attention correlated to daily use. These academic consequences are particularly worrisome and demand further investigation as students with greater consumption rates of TikTok exhibit not just lower GPAs, but also more procrastination behaviors, and lower engagement with complex academic materials. These behavioral changes seem to have neurobiological substrates, with initial neuroimaging studies demonstrating differences in prefrontal executive function and reward-related brain regions in heavy users. Considering the convergence of results based on a variety of methodologies, populations and varying cultural contexts, evidence for a link between watching short-form videos and attention difficulties can be said to be compelling.

B. Mechanisms

A range of interrelated mechanisms seem to underpin the negative association between TikTok and short-form media use and attention span. The most explicit involves the hijacking of dopaminergic reward trajectories by the platform through schedules of intermittent reinforcement. Every video transition is a small dose of dopamine that combines into the ultimate reinforcement loop, conditioning people to demand an endless stream of new videos and instant gratification. This isn't a mere aspect of the human condition, but neurobiological conditioning over time to demand for higher rewards and weaker tolerance of sustained participation in less immediately rewarding activities. This conditioning is similar to what is seen with drugs of abuse. And the algorithmic curation of content means it is also

entirely possible to Never See Something You Don't Agree With, keeping you locked into an echo chamber. Simultaneously, quick switching between non-related pieces of content seems to fragment thought so much as to not allow the fundamentals for deeper immersion of the mind and sustaining attention. Users are trained to consume information in short, disjointed snippets rather than staying focused on full narratives or challenging ideas. This cognitive "splintering," might explain why heavier users perceive trouble with sustained readings tasks or marathon academic lectures. The perpetual accessibility of platform on mobile devices adds another layer of attentional distraction, as users develop checking habits that break up focused work stints and short-circuit the development of deep concentration states.

C. Developmental Vulnerability

The Neurobiological impact Raising questions about the long-term effect of short-form media on children and young people who are brain functionally developing. With youth and young adults', intake takes place during sensitive periods of personal maturation when executive forms of control are yet to mature, and socialization formative years persist. Young people, whose prefrontal cortices are still developing into their mid-20s, are particularly susceptible to the attention-fracturing influence of short-form media. The design features of the platform seem to take advantage of this developmental vulnerability, altering standard pathways of attention development. Yet the research also reveals significant contrasts in individual vulnerability. There is a stronger relationship between TikTok use and attention deficits among users with previous addictive tendency. Yet, whether resilient or not, students with strong self-regulating skills as well as those who have a broad variety of leisure activities may be somehow shielded from the harshest effects on attention. These between-individual differences imply that a universal message about uses of short form media may be less effective than selective interventions based on specific risk profiles. To put it bluntly, you can't have it both ways. This demands increased knowledge of subgroups of users who are most at risk for developing severe attention problems and, in turn adjusting preventive measures.

D. Academic Implications

The serious effects on student performance caused by this form of surfeit of stimulation calls into question educational activities amidst the proliferation of short-form media. Old-school teaching methods that require the sustained attention of long lectures or reading assignments might find themselves increasingly at odds with the cognitive patterns inculcated by platforms such as TikTok. Teachers say they are fighting against an increasing struggle to keep students engaged, and many have observed a significant fall-off in student attention span when it comes to complex content over several minutes of time without a break or stimulation change. Many students who utilize these resources repeatedly claim to have shorter attention spans and difficulty concentrating on tasks. This poses a hard challenge for teachers and parents on the question whether to cater teaching methods to address reduced attention or not, versus perhaps working re-build students' stamina for sustained focus. Some schools have started exploring micro-learning models that deconstruct the content into smaller and more digestible chunks, but this threatens to exacerbate fragmented attention already present. Other strategies include explicit instruction of attention-management skills, and scheduled technology-break times during the school day. It's evident that institutions of higher education will have to create comprehensive strategies that acknowledge the reality of altered attention patterns while simultaneously preserving and rebuilding capacities for deep, sustained engagement with complex material.

E. Clinical and Mental Health Considerations

The attentional hindrances of excessive TikTok consumption bring up significant clinical concerns for mental health clinicians. The high-using symptom profile is characterized by significant attention problems, distractibility, and difficulties finishing tasks, with striking similarity to attention deficit hyperactivity disorder. This overlap becomes a diagnostic issue for clinicians because it is difficult to differentiate technology-induced attention problems from neuropsychological disorders. These neurobiological findings of altered reward circuitry also suggest that they may be related to addictions in some individuals who display tolerance, withdrawal (ie inability to not check platform) and continued use despite detrimental effects. Mental health professionals are reporting that individuals are presenting with TikTok or short-form media usage, which is impacting academic/occupational/social impairment. This calls for the use of special assessment and intervention procedures, including specialized expertise. Interventions must target both the (over) use and attentional deficits that persisted despite reduced (use). The reversibility of these attention effects is an open question, but early data suggest that structured digital detoxes and sustained attention training exercises can improve sustained attention.

F. Limitations

Although there have been valuable lessons from recent studies of short-form media and attention, there are several methodological issues. The empirical base of research is still in its embryonic phase, with a notably sparse

number of studies that have been done to date, particularly those within the United States. The predominance of cross-sectional and correlational studies preclude clear, causal conclusions regarding whether use leads directly to attention deficits or instead whether those with existing difficulty attending are simply attracted disproportionately to the platform. Lack of studies on longitudinal attention change is a significant void in the field. The majority of studies in this area heavily depend on self-report measures of short-formmedia use, as well as attention difficulties, which may lead to potential biases regarding social desirability and self-reflection. Those studies that have used objective measures of attention applied different kind of tests, making comparisons between them difficult. Another potential issue is that much of this research has been conducted on relatively homogeneous samples (or some sub-samples thereof), making it difficult to generalize to different aged members or other populations. The fast pace of transformation in media and platforms provides a further challenge, because features and algorithms change all the time, which changes the mental effects and timeliness of current research. Cultural-level factors may also influence the association between short-form media use and attention, but research has somewhat focused on Western or East Asian cultures at the expense of understanding global effects.

G. Directions for Future Research

There is a need for a research agenda to be developed that uses varied methodological directions to fill current gaps in knowledge. Longer term studies following users for months to years would determine whether such short-term attention deficits reflect the reversible consequences of temporary [cognitive] optimisations or sustained cognitive alterations. Experimental protocols in the present study with manipulation of exposure to TikTok and short-form media set under controlled environment would have enabled causal relationship claims with independent variables interference. Studies using neuroimaging techniques in larger and more heterogeneous samples with standardized examination protocols are also needed to investigate the underlying neurobiological basis of attention fluctuations. Future studies should also explore risk, protective and resilience mechanisms that could mitigate adverse attention effects. Intervention studies comparing different approaches to short-form media use management, balance with attention capacity and recommendation on the part of users, parents and educators could assist in achieving evidence-based guidelines. Experimental studies that compare effects of different types and manners of encoding short-form video would illuminate whether some observed effects are unique to TikTok, or generalize as trends in consuming short-form media altogether. Future research should also consider other favorable uses of short-form video for educational or skills acquisition purposes, and specific scenarios in which brief engaging content could facilitate learning, not obstruct it.

V. CONCLUSION

Studies from various fields connect heavy consumption of TikTok and short-form media with three main effects: quantifiable attention slip, deteriorating school performance and neurobiological change. These results generalize beyond specific symptoms to a pattern of internet use in which platforms exploit developmental vulnerabilities in brain reward systems, to seize users' attention and produce long term changes in cognitive processes. The reported academic effects (e.g., lower GPA, more procrastination and inability to handle complex materials) as manifested expressions of underlying cognitive alterations that might affect developmental trajectories require further longitudinal studies. Different vulnerabilities of users, with possible predisposition towards addiction and higher propensity for boredom would lend to differential susceptibility (Tian et al.) —thus arguing against a one-size-fits-all prevention strategy in favor of tailored treatments according to pre-existing risk profiles.

These attention issues merit the attention of educators, mental health professionals and families as social media use evolves. The question for schools, teachers, and parents becomes: Should we reconstruct our pedagogical practices for an age of little snaps or try to restore attention spans through the teaching of attention management and technology-free blocks in students' schedules? Mental health practitioners need to frame the assessment process of technology-related attention challenges and underlying neurodevelopmental conditions, while considering the addiction-like tendencies apparent in some users. Thus, as the media landscape continues to transform at a breathtaking pace to optimize engagement, it's not just a matter of temporary (cultural) adjustments taking place, but rather intergenerational modification of cognitive function during sensitive periods of cerebral maturation. The question is whether the creative and social benefits of these platforms weight against the growing cognitive toll they represent for a generation whose attention inherently influences their ability to manage information in an ever more complicated world.

A. Interest Conflicts

Conflict of Interests the author declares that there is no conflict of interests regarding the publication of this paper.

VI. REFERENCES

[1] Abdul Aziz, H. A., & Mohd Dali, S. Z. (2023). More than just engaging? TIKTOK as an effective educational tool. *International*

Journal of Education, Psychology and Counseling, *8*(52), 133–142. https://doi.org/10.35631/ijepc.852011

[2] Alghamdi, R., & Aljabr, N. (2024). The impact of TIKTOK on employees' attention span. *International Journal of Professional Business Review*, *9*(11). https://doi.org/10.26668/businessreview/2024.v9i11.5144

[3] Asif Saniya Kazi, M. (2024). Examining the influence of short videos on attention span and its relationship with academic performance. *International Journal of Science and Research (IJSR)*, *13*(4), 1877–1883. https://doi.org/10.21275/sr24428105200

[4] Burhan, R., & Moradzadeh, J. (2020). Neurotransmitter Dopamine (DA) and its Role in the Development of Social Media Addiction. *Journal of Neurology & Neurophysiology*, *11*(7), 1–2.

[5] Chen, Y., Li, M., Guo, F., & Wang, X. (2022). The effect of short-form video addiction on users' attention. *Behaviour & Information Technology*, *42*(16), 2893–2910. https://doi.org/10.1080/0144929x.2022.2151512

[6] Crispo, N. (2024, March 5). *Tiktok Brain: Can we save children's attention spans?* Richmond Journal of Law and Technology. https://jolt.richmond.edu/2024/03/06/tiktok-brain-can-we-save-childrens-attention-spans/

[7] De, D., El Jamal, M., Aydemir, E., & Khera, A. (2025). Social media algorithms and teen addiction: Neurophysiological impact and ethical considerations. *Cureus*. https://doi.org/10.7759/cureus.77145

[8] Galanis, P., Katsiroumpa, A., Moisoglou, I., & Konstantakopoulou, O. (2024). The Tiktok Addiction Scale: Development and validation. *AIMS Public Health*, *11*(4), 1172–1197. https://doi.org/10.3934/publichealth.2024061

[9] Gao, Y., Hu, Y., Wang, J., Liu, C., Im, H., Jin, W., Zhu, W., Ge, W., Zhao, G., Yao, Q., Wang, P., Zhang, M., Niu, X., He, Q., & Wang, Q. (2025). Neuroanatomical and functional substrates of the short video addiction and its association with Brain Transcriptomic and cellular architecture. *NeuroImage*, *307*, 121029. https://doi.org/10.1016/j.neuroimage.2025.121029

[10] Gottfried, J. (2024, January 31). *Americans' social media use*. Pew Research Center. https://www.pewresearch.org/internet/2024/01/31/americans-social-media-use/

[11] Haliti-Sylaj, T., & Sadiku, A. (2024). Impact of Short Reels on Attention Span and Academic Performance of Undergraduate Students. *Eurasian Journal of Applied Linguistics*, *10*(3), 60–68. https://doi.org/10.32601/ejal.10306

[12] Jain, L., Velez, L., Karlapati, S., Forand, M., Kannali, R., Yousaf, R. A., Ahmed, R., Sarfraz, Z., Sutter, P. A., Tallo, C. A., & Ahmed, S. (2025). Exploring problematic TikTok use and mental health issues: A systematic review of empirical studies. *Journal of Primary Care & Community Health*, *16*. https://doi.org/10.1177/21501319251327303

[13] Kim, I. (Andrew). (2024). Exploring the cognitive and social effects of Tiktok on adolescent minds: A study of short-form video consumption. *International Education and Research Journal*, *10*(9), 44–46. https://doi.org/10.21276/ierj24769489007345

[14] von Fedak, V., & Langlais, M. R. (2024). Tiktok too long? examining time on TikTok, psychological distress, and the moderation of TikTok motivations among college students. *Psi Chi Journal of Psychological Research*, *29*(2), 129–139. https://doi.org/10.24839/2325-7342.jn29.2.129

[15] Xie, J., Xu, X., Zhang, Y., Tan, Y., Wu, D., Shi, M., & Huang, H. (2023). The effect of short-form video addiction on undergraduates' academic procrastination: A moderated mediation model. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1298361

[16] Yan, T., Su, C., Xue, W., Hu, Y., & Zhou, H. (2024). Mobile phone short video use negatively impacts attention functions: An EEG study. *Frontiers in Human Neuroscience*, *18*. https://doi.org/10.3389/fnhum.2024.1383913

[17] Ye, J.-H., Zheng, J., Nong, W., & Yang, X. (2025). Potential effect of short video usage intensity on short video addiction, perceived mood enhancement ('tiktok brain'), and attention control among Chinese adolescents. *International Journal of Mental Health Promotion*, *27*(3), 271–286. https://doi.org/10.32604/ijmhp.2025.059929

[18] Zhang, S., & Li, S. (2025). How short video addiction affects risk decision-making behavior in college students based on fNIRS Technology. *Frontiers in Human Neuroscience*, *19*. https://doi.org/10.3389/fnhum.2025.1542271