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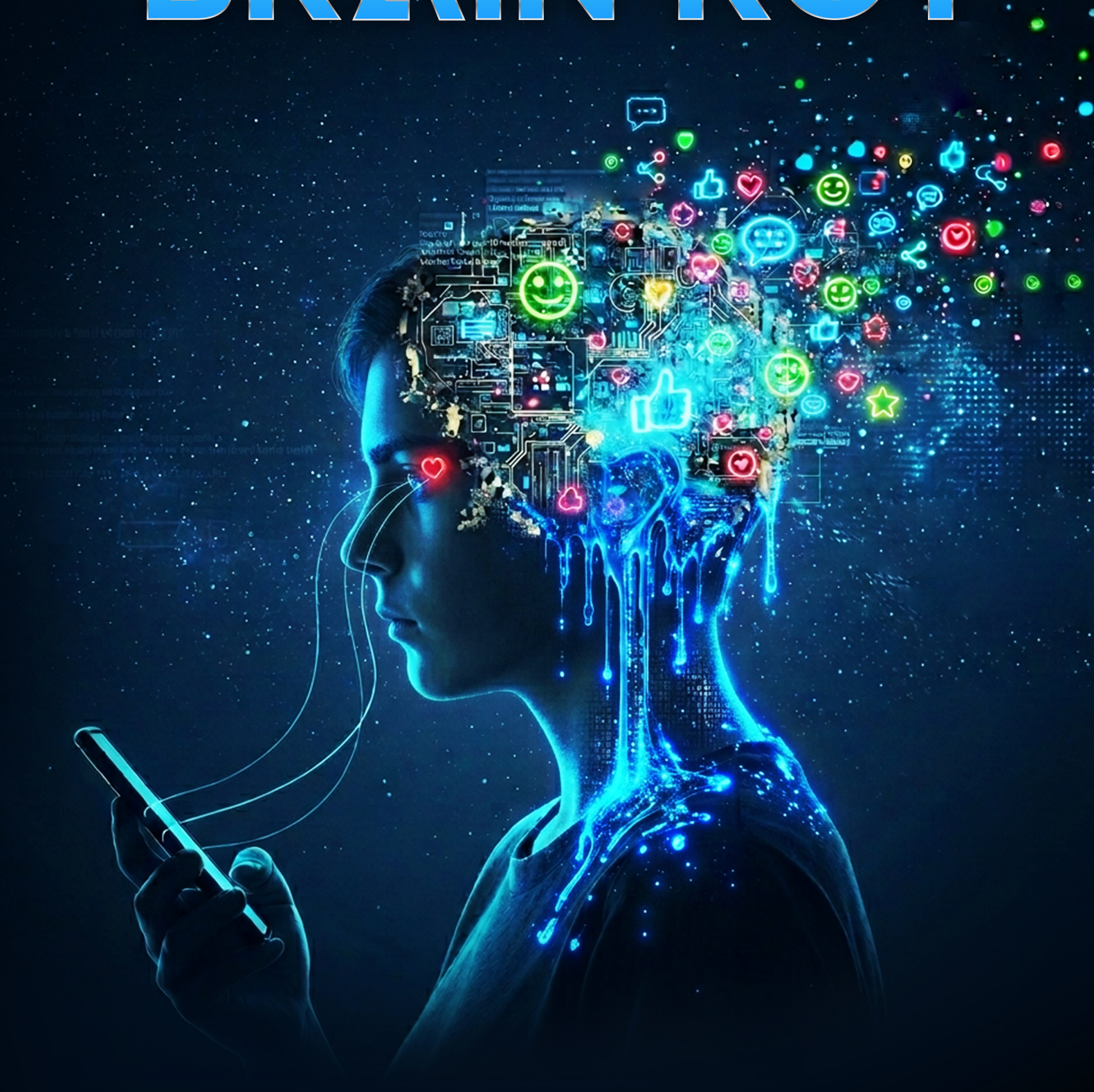
BRAIN ROT



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PREFACE

In recent years, we have witnessed that almost every conversation with young people, teachers, and parents begins with the same phrase: “They can’t focus like they used to.” Although this statement is often explained by concepts such as attention deficit, loss of motivation, or digital addiction, the picture observed in life points to a shift that goes beyond these schemas and is more complex and multidimensional. Today, the experience of young people is often described with an ironic but extremely striking concept: brain rot.

Rather than treating this concept, which appeared as a joke in popular culture, as a simple buzzword, this book is the product of an effort to understand the cognitive, emotional, and social changes it signifies from a social sciences perspective. In this study, brain rot is not treated as a medical diagnosis or an individual flaw; rather, it is approached as an analytical viewpoint that reveals the effects of the digital age on learning, attention, and meaning-making.

The speed, continuity, and intense stimulation offered by digital environments are restructuring the individual’s cognitive system, transforming skills such as attention, patience, deep thinking, and psychic resilience. Particularly with the rise of short, fast, and fragmented content consumption, a noticeable resistance to long texts, delayed rewards, and mentally demanding processes has emerged. This situation affects not only academic achievement but also the individual’s mental health, social relationships, and self-perception.

This book addresses brain rot through the sub-dimensions of cognitive fatigue, cognitive load, emulation, and depersonalization; it thoroughly examines the cognitive-emotional functional patterns shaped by young people’s digital life practices. However, this work aims not only to diagnose the situation but also to offer a perspective of repair and reconstruction. Approaches such as single-tasking, attention training, and non-digital consumption practices demonstrate that weakened attention processes can be strengthened. In this context, rather than painting a bleak picture, the book carries a scientific optimism that attention and learning skills can be regained in the digital age.

This work aims to create a space for educators, researchers, parents, and anyone seeking to understand their own attention in the digital age. The fundamental hope is that this discussion around the concept of brain rot will open the door to structural and educational solutions, rather than individual blame.

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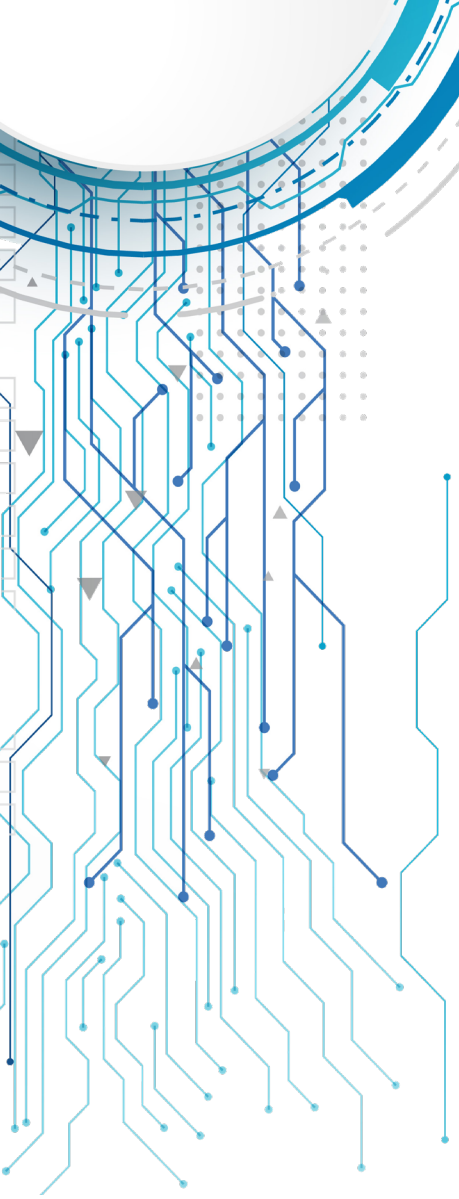


CHAPTER 1

BRAIN ROT

The Anatomy of the Digital Age

The digital age has fundamentally transformed the way humans access information, think, and process attention. Being constantly online normalises short attention spans and instills cognitive habits focused on rapid consumption. This trend weakens an individual's mental continuity and capacity for deep thinking. Brain rot is one visible outcome, showing as cognitive exhaustion, attention deficit, mental fatigue, and shallow thinking patterns. These arise with excessive digital content consumption. This situation is not just an individual attention problem; it reflects a societal awareness crisis. Constant diversions to short videos, fast content transitions, and algorithmic loops drain mental energy. This erodes depth of thought and weakens the production of meaning, abstraction, and critical reasoning. The process shapes learning habits, emotional responses, and identity formation in young people, especially during their developmental years.

Frequent digital platform use turns users' attention into a measurable resource and interrupts mental labour. Brain rot must not be seen as the passive result of technology but as a product of how digital systems direct user behaviour. More time spent in front of screens strains our cognitive capacity and leaves lasting effects on learning, memory, and thinking. Brain rot marks a new mental era defined by scarce meaning in an age full of information. The mind loses depth in a constant stream of stimuli. Rapid consumption breeds intellectual shallowness. This problem affects not just individual performance but also cultural productivity and social communication. In this age of fast digitalisation, understanding this mental "wear and tear" is now a fundamental intellectual issue of our time.

The term brain rot has emerged as a culturally meaningful expression, often used to describe cognitive decline and related symptoms in individuals, particularly in an increasingly digitalised, accelerated society. Compared to its medical counterpart, which can describe specific neurological and psychological conditions, "brain rot" is a more colloquial term that reflects a societal perception of decline encompassing various cognitive and social dysfunctions. This distinction between medical and cultural terminology highlights societal attitudes towards brain health and the stigmatisation of cognitive decline. Firstly, "brain rot" generally refers to the consequences of prolonged exposure to factors that lead to mental decline, such as a sedentary lifestyle, excessive screen time, and insufficient mental activity (Abramson et al., 2007). This cultural term has come to be widely used to describe not only the clinical aspects of conditions such as dementia or Alzheimer's, but also the daily cognitive fatigue observed in younger demographic groups frequently exposed to rapid information consumption and environmental stressors. In this context, brain rot symbolises a broader existential concern about mental health amid modern technological pressures (Falade et al., 2022).

Unlike the clinical term addressing the pathophysiological aspects of brain health, "brain rot" reflects social narratives about cognitive decline that are less stigmatised than traditional medical classifications. It has gained some traction as an accessible, relatable descriptor for phenomena such as forgetfulness, distractibility, and emotional detachment that may stem from contemporary lifestyle choices or environmental pressures (Ramalingam et al., 2019). It has thus become part of cultural discussions on mental health and contributed to the understanding that cognitive health is linked not only to biological factors but also to lifestyle (Falade et al., 2022). Sociologically speaking, this term can shed light on important considerations regarding social behaviours and norms. The rise in media consumption, video games, and social networks is associated with cognitive impairment and reduced attention span across various age groups. These phenomena have sparked discussions about the pressures of modernity on mental and neurological health (Srirachanikorn, 2025). Falade et al. (2022) note that the term brain rot, therefore, reflects cultural sentiments about technology's role in transforming cognitive habits and an awareness of the potential negative consequences of these transformations on an individual's mental acuity and social abilities. The social implications also exist, as individuals affected by such cognitive complications are able to express their frustrations about mental decline without fear of social judgment, which is often associated with formal diagnoses (Ozkirli et al., 2025). From a different perspective,the fact that problems such as excessive overcrowding, economic inequalities, and inadequate access to mental health services can exacerbate brain health issues necessitates that brain health be perceived as a social problem, blended with clinical understanding, beyond being merely a medical issue (Abramson et al., 2007).

This blending can actually be seen as an indication that brain rot does not originate in a laboratory but rather in the depths of the internet, that is, in the language of young people who experience it firsthand. This situation is the strongest evidence that brain rot is not primarily a medical disorder, but rather a widespread feeling of mental fatigue and dullness caused by the digital age. However, brain rot should not be seen merely as an individual weakness or a simple consequence of excessive exposure to technology. The system that pushes individuals into this mental fatigue is not random but the product of conscious design. In other words, there is a fundamental economic driving force behind brain rot.

The most valuable resource for digital platforms is individuals' attention. This economic model compels platforms to develop relentless algorithms that maximise the time users spend on their screens (Menczer et al., 2020). These algorithms, which exploit our brains' cognitive weaknesses, turn individuals into passive consumers, paving the way for brain rot. The seeds of mental dullness are sown in this cycle of 'endless scrolling' (Myllylahti, 2018). In fact, the Attention Economy is a concept that posits attention as a scarce commodity in a world saturated with information and stimuli. Within this framework, large digital platforms—particularly social media and short-video applications such as TikTok and Instagram—have implemented mechanisms to capture and retain users' attention for extended periods. In this context, platforms act not only as tools for social interaction or content sharing, but also as active participants in a competitive market (Song et al., 2021). The attention economy is fundamentally based on the principle that user attention can be commercialised in a

manner similar to traditional resources such as data. Companies use algorithms that analyse user behaviour to optimise content delivery and increase engagement. These algorithms prioritise instant rewards through eye-catching visuals, likes, and shares, as well as a continuous stream of content that keeps users in a state of constant consumption (Ye et al., 2022). Design features implemented by these platforms, such as infinite scrolling, autoplay, and frequent notifications, are deliberately structured to encourage compulsive viewing and rapid interactions that can negatively impact users' cognitive capacities over time (Klug et al., 2021). Research has shown that these digital platforms employ mechanisms that force users into consumption mode. One such mechanism is short videos. Engaging significantly with short videos can lead to cognitive overload, reducing attention span and hindering users' ability to focus on longer content (Walla and Zheng, 2024). This is concerning for young users because it causes sudden spikes in dopamine levels in developing brains (Ye et al., 2022).

The effects of this consumption pattern extend beyond individual psychological impacts. It has the capacity to drive broader societal changes in behaviour and culture. With the ubiquity of mobile devices, social media plays a central role in shaping how individuals perceive reality, communicate, and form emotional bonds (Villa-Ruiz et al., 2021). Given the rapid dissemination of information and the formats of everyday interactions, users may notice a decline in their abilities in deeper relational and cognitive processes, which can contribute to increased feelings of isolation and superficial interactions (Srirachanikorn, 2025). Furthermore, platforms such as TikTok use persuasive designs to encourage users to remain on the platform. The interaction of social validation mechanisms, such as likes, shares, and comments, increases engagement by prompting users to return frequently for the feedback and social reinforcement these interactions provide. This continuous feedback loop can create a dependency on instant social approval, potentially leading to a decline in personal willpower and self-confidence over time. Therefore, these digital platforms not only facilitate social interaction but also actively shape behaviours that align with consumption patterns that support corporate objectives (Han et al., 2021). It can be argued that this dependency, often referred to as "short video addiction," may lead to significant behavioural and psychological dysfunctions, including difficulties with sustained attention, increased anxiety, and challenges in academic performance (Klug, 2020; Wang et al., 2023). The appealing nature of short video content can essentially numb the user experience, draw viewers deeper into consumption, and simultaneously blur the line between entertainment and meaningful engagement (Ye et al., 2022).

The growing perception of human attention as a scarce resource creates a cultural and economic environment in which competition for limited engagement intensifies, particularly in information environments saturated with digital platforms such as social media and short-video apps. The algorithms developed by these platforms are designed to maximise user engagement by exploiting psychological vulnerabilities, thereby extending the time individuals spend consuming content (Törnberg, 2025; Luque et al., 2020). A key psychological target here is the fear of missing out, the anxiety felt at the possibility of missing out on enjoyable experiences others are having. This phenomenon is prevalent on social media, where users feel compelled to constantly check for updates to stay connected and informed. Platforms exploit this insecurity by sending notifications about friends' activities, trending

topics, and viral content, which collectively drive higher engagement (Lee et al., 2021). The design of these algorithms sustains the integrated engagement cycle by feeding users' emotional needs and insecurities (Bhargava and Velasquez, 2020). Another critical psychological vulnerability here is the innate human desire for social validation. Social media platforms increase engagement by facilitating mechanisms such as likes, shares, and comments that provide instant positive feedback and validation. Each notification or 'like' triggers the release of dopamine, a brain chemical associated with pleasure and reward. This creates a reinforcement cycle in which users constantly seek validation through online interactions, and the time they spend in front of the screen increases as they chase the next reward (Luque et al., 2020). In fact, seeking validation in this way creates stronger behavioural tendencies than consistent rewards. Users are driven to constantly refresh their feeds in the hope of encountering appealing content (Lorenz-Spreen et al., 2019; Colicev et al., 2018).

Social media platforms' algorithms reinforce cognitive biases, such as confirmation bias, which leads individuals to favour information that supports their pre-existing beliefs. These platforms capitalise on this by selecting content tailored to users' interests, often creating echo chambers that reinforce specific viewpoints without exposing users to differing perspectives. Individuals in these echo chambers are constantly confronted with information that aligns with their own views. In this environment, individuals focus on accepting ideas similar to their own. This environment encourages users to spend more time in their preferred digital spaces, thereby increasing their online time. User participation increases when content is regularly presented in a specially prepared format. Thus, individuals move away from behaviours that would develop their capacity for thinking, such as evaluating and analysing different ideas (Cinelli et al., 2020; Strizhakova et al., 2021). In fact, this environment of dependency demonstrates how digital platforms have developed a disposable, "mindless" consumption model where users interact with content passively rather than actively. These consumption patterns reinforce the idea that social media is an escape from reality, neglecting the development of critical thinking and emotional regulation skills. As users engage more with fast, consumable content on platforms like TikTok, they may struggle to participate in longer-lasting, more meaningful social activities. As a result, individuals may remain in an environment that leads to anxiety and dissatisfaction (Lee et al., 2021; Xiao and Su, 2022).

Given that social media's current goal is to maximise our time spent on platforms, the most important tool they use to achieve this is short-form video (TikTok, YouTube Shorts, Instagram Reels). The rise of these formats radically separates our media consumption habits from traditional methods and rapidly deepens the brain-rot effect. The growing number of viewers for short-form video platforms such as TikTok and YouTube Shorts reflects broader changes in viewer behaviour and content engagement, fundamentally differing from traditional media consumption in several key ways. These differences stem from the inherent characteristics of short-form video content, which prioritise brevity, engagement, and interactivity. They differ sharply from traditional media tools such as television and print publications, which require more passive consumption (Guan, 2023; Rovira and Luque, 2021).

Short video formats typically offer brief content lasting from a few seconds to a minute. This brevity is designed to capture and sustain users' attention in the rapidly changing digital environment (Yla-Anttila, 2020). In contrast, traditional media typically involves longer formats requiring sustained attention, such as extended television programmes or feature films. The fast-paced consumption model of short videos appeals to the modern viewer's declining attention span, encouraging frequent, immediate interaction with content (Meier, 2021; Firth et al., 2019). Platforms hosting short videos are inherently interactive, offering users the opportunity to create content through actions such as liking, commenting, and sharing (Ormen and Gregersen, 2022). This interaction fosters a participatory culture in which viewers become co-creators of content and engage more actively than passively with media. Traditional media generally does not offer real-time interaction; instead, interaction is limited to ratings, viewer letters, or social media discussions that occur outside the viewing experience (Plantin and Punathambekar, 2018). The key difference here is personalised content. Social media platforms use algorithms to provide users with personalised content streams based on their viewing behaviour and preferences. This personalised approach ensures viewers are consistently presented with content tailored to their interests, thereby significantly increasing the time they spend consuming. Traditional media consumption lacks this level of personalised interaction and generally operates with a more general audience approach (Chaudhary and Niroula, 2024). The importance of these fundamental differences lies in how they reflect and shape user experiences and cultural dynamics within society. The shift towards short-form video reflects broader societal trends towards faster-paced lives and declining attention spans. This change is further amplified by a digital ecosystem that rewards quick and entertaining content over longer, more thoughtful engagement. This cultural shift has implications for various aspects of society, including mental health, cultural production, and the marketing economy (Dijck and Poell, 2013; Cui et al., 2016; Li, 2022).

As a result of this situation, short videos have been shown to accelerate brain rot in individuals. Unlike traditional media consumption, this video format is designed to keep our brains in a state of constant, intense stimulation. Rapid cuts, sudden sound changes, and constant visual novelty trigger dopamine release in the brain's reward centre while also causing mental fatigue. This uninterrupted barrage of stimuli prevents the rest phase, which is vital for the brain's information processing and consolidation into long-term memory, and significantly increases mental exhaustion (Arouch et al., 2025). At the same time, as average video duration shrinks to seconds, an individual's ability to focus on a text, book, or complex problem for more than five minutes uninterrupted diminishes. This leads to a decline in higher-level cognitive functions such as deep thinking, critical analysis, and problem-solving. Finally, these formats reinforce the dominance of passive consumption. Rather than consciously choosing what to watch, the user surrenders to a pre-curated algorithmic stream that offers only the next instant gratification (Chiossi et al., 2023). This passive viewing state fuels mental laziness and feelings of lostness or emptiness, which are significant symptoms of brain rot. Therefore, the rise of short video formats is not merely an entertainment preference; it is the most effective tool in this economic approach to accelerate cognitive decline (Yan et al., 2024).

Causes of Brain Rot and Cognitive Effects

"We shape our tools;
then our tools shape us."
Marshall McLuhan

The external symptoms of brain rot, such as distraction and mental fatigue, are not merely the consequences of a digital lifestyle. These symptoms are evidence that our brain chemistry is being silently reprogrammed. In addition to the threats posed by the tools social media platforms use to turn individuals into passive consumers, a greater problem arises from these tools directly attacking our brain's most fundamental motivation and reward mechanism: the dopamine cycle. Smartphones function as the most sophisticated "reward machines" of the modern age. Every notification sound, every new swipe, and every like triggers a rapid, powerful, and unpredictable chemical reaction in the deepest layers of the brain. This creates a vicious cycle that drives us to consume more and reinforces the brain's mental dullness. In fact, an individual's constant search for satisfaction through social media channels can lead to changes in how they experience pleasure and motivation, resulting in addictive behaviour (Chavez et al., 2025).

Dopamine is a neurotransmitter of critical importance to the brain's reward system and plays a significant role in reinforcing behaviours that lead to pleasurable outcomes. The ventral tegmental area (VTA) is an important region in this reward circuit and transmits dopaminergic signals to various brain regions, including the nucleus accumbens (NAc), which plays a key role in reinforcing appetitive behaviours (Qiu et al., 2023). When people engage in activities that provide instant gratification, such as browsing social media, watching short videos, or playing video games, dopamine is released in anticipation of these rewards. This instant pleasure increases the expectation of similar rewards from subsequent behaviours, creating a cycle in which individuals seek repeated stimulation (Wegmann et al., 2025). Consistent reinforcement of behaviours through dopamine release can alter the brain's reward sensitivity over time. As behaviours associated with instant gratification lead to repeated dopamine surges, the brain begins to adapt by downregulating dopamine receptors, reducing its sensitivity to natural rewards and increasing the amount of stimulation required to reach previous levels of pleasure (Li and Zhou, 2025). This is concerning as it may lead individuals to require constant or increasing levels of stimulation from sources of instant gratification to experience pleasure, contributing to the development of a compulsive behaviour-characterised addiction cycle even when faced with negative consequences (Liu et al., 2021).

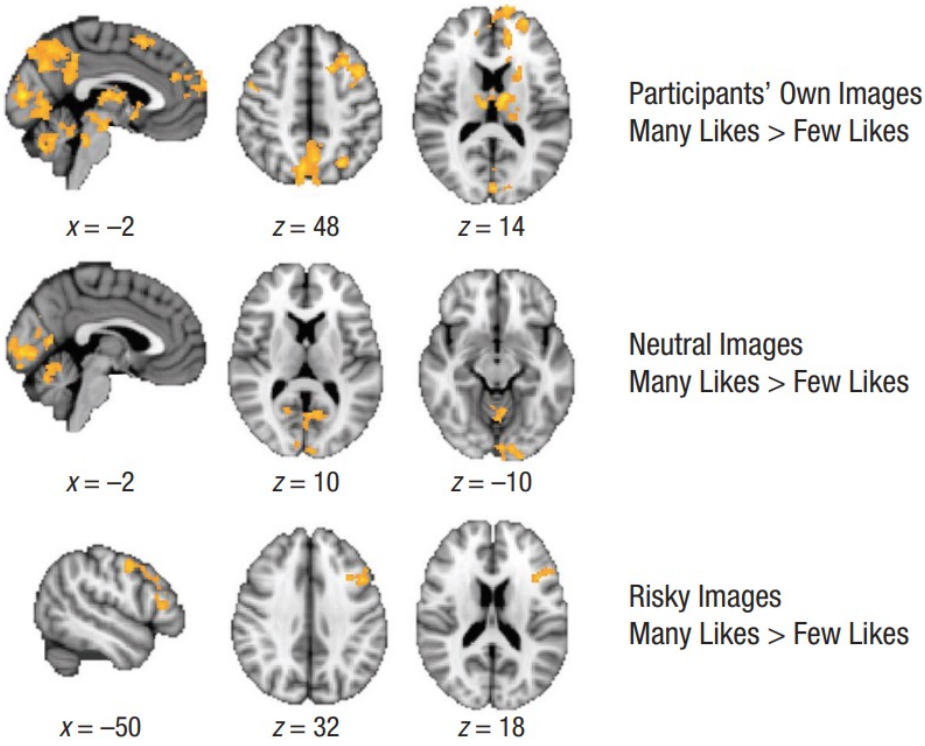


Figure 1. The Effect of the Number of Likes Seen on Social Media on Young People's Brains (Sherman et al., 2016)

For example, the brain images used in the study by Sherman et al. (2016) (see Figure 1) clearly show how the number of likes seen on social media affects young people's brains. In the study, young people were shown photographs on a screen resembling Instagram, some of which had many likes and others few. Brain images revealed a significant increase in activation in the nucleus accumbens, a region of the reward system, particularly among young people who viewed photos with many likes. This region is directly involved in dopamine release and is activated when a person experiences feelings such as "I am being rewarded," "I have won," or "I have been approved." In other words, the brain processes social media likes in almost the same way as it processes physical rewards. Furthermore, photos with high like counts elicited stronger activation in the medial prefrontal cortex, which is associated with self-perception and social evaluation processes. This reveals that young people interpret the number of likes not just as visual information, but as an indicator of their own social value. In contrast, when photos containing risky behaviour were shown, reduced activation was observed in the prefrontal regions that normally govern impulse control, risk assessment, and rational decision-making (see Figure 2).

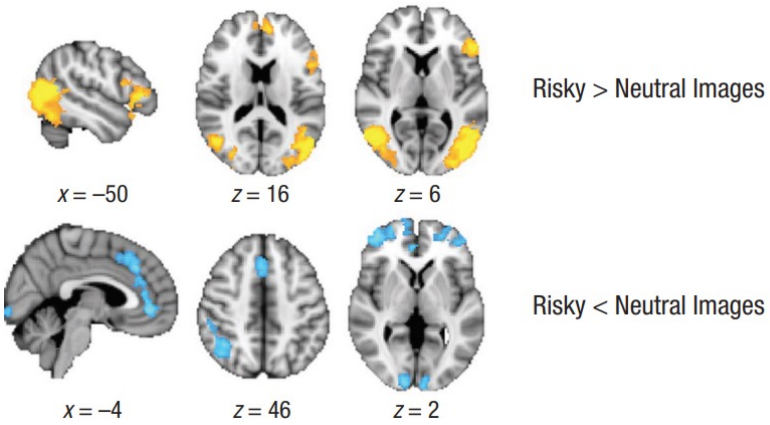


Figure 2. Activation in Prefrontal Regions Governing Impulse Control, Risk Assessment, and Rational Decision-Making as a Result of Exposure to Harmful Content on Social Media (Sherman et al., 2016)

In other words, social media can weaken the system that should act as a brake in the adolescent brain, especially when encountering risky content. When these findings are considered together, the picture emerges that the number of likes on social media creates a strong reward response in young people's brains, triggers social comparison processes, and can also weaken self-control mechanisms. This explains at a neurobiological level why digital environments are so effective, particularly among young people, and why excessive use can lead to behavioural and cognitive changes.

The relationship between instant gratification and addiction can be conceptualised through several mechanisms:

Behavioural Reinforcement:

The cycle of seeking instant gratification inherently reinforces itself. Because instant rewards feel good, individuals are inclined to repeat the behaviour, leading to a feedback loop that strengthens the neural pathways associated with it. Over time, this compulsion can overshadow other rewarding experiences and lead to reduced participation in dopamine-unrelated activities, such as physical exercise or social interactions (Liu et al., 2023).

Depersonalization:

As the brain becomes accustomed to high levels of dopamine release from instant gratifiers, individuals may experience diminishing returns in their dopamine responses and require increasingly larger stimuli to derive pleasure. This depersonalization forms the basis of many behavioural and substance addictions, as individuals strive to recapture that initial 'high' feeling, which becomes increasingly difficult to achieve (Qiu et al., 2023).

Decision-Making Impairment:

Constant instant gratification impairs the brain's ability to delay satisfaction and make decisions based on long-term benefits. Instead, individuals prioritise short-term rewards, leading to impulsivity and a lack of planning for future consequences (Chavez et al., 2025).

Cognitive Impairments:

Research indicates that excessive reliance on instant gratification platforms may impair attention mechanisms and cognitive processing. Individuals may struggle to concentrate on tasks requiring sustained effort, potentially leading to greater dependence on quick, pleasurable stimuli available through digital channels (Li and Zhou, 2025).

Emotional States:

Short-term activities that provide instant rewards often serve as coping mechanisms for stress and negative emotions. Engaging in behaviours that provide instant gratification can temporarily alleviate discomfort or anxiety, and as individuals associate these activities with emotional relief, they reinforce this cycle (Wegmann et al., 2025). This emotional reinforcement deepens the path to addiction as behaviours become synonymous with stress relief (Wang and Shen, 2025).

Understanding how constant instant gratification alters the dopamine cycle is crucial for developing effective strategies for addiction prevention and treatment. This awareness can contribute significantly to various areas at both the societal and individual levels. Firstly, recognising the addictive nature of instant gratification behaviours can help shape public health policies to regulate the frequency and level of exposure to highly stimulating environments, such as social media platforms (Li, 2023). Additionally, educational programmes focused on developing emotional regulation and delayed gratification skills can support individuals, particularly young people, in establishing more balanced and healthy relationships with digital content, thereby preventing the formation of compulsive behaviour patterns (Nishitani et al., 2025). Furthermore, the holistic use of behavioural therapies, mindfulness-based practices, and physical exercise can break the cycle of addiction by helping restore the sensitivity of dopamine receptors and regulate the functioning of the reward system. Such interventions provide an effective foundation not only for combating addiction but also for improving overall mental health (Li et al., 2023).

Understanding the neurobiological consequences of changes in the dopamine cycle due to constant instant gratification can explain not only how addiction begins but also why it becomes so persistent. When exposed to intense stimuli at short intervals, the brain recalibrates its reward system, becoming less sensitive to naturally satisfying experiences. This drives the individual towards increasingly frequent and potent stimuli. Thus, the dopamine system evolves into a cyclical model based on the pursuit of instant gratification rather than sustainable balance. This neurochemical restructuring not only forms the basis of behavioural addictions but also has profound effects on an individual's motivation, attention, and self-control capacity. At this point, the rapid rise and fall of dopamine can affect motivation and focus (Matsumoto et al., 2016).

In fact, the continuous, artificially elevated dopamine flow induced by social media can cause a difficult-to-reverse adaptation in the brain's reward system. The brain begins to accept high-intensity digital stimuli as a "normal" level of reward. The most destructive consequence of this high-voltage chemical conditioning is that it instantly renders the natural rhythms of daily life and effort-intensive activities boring and worthless. The natural and delayed satisfaction that comes from long-term work or deep learning becomes unable to compete with the instant and powerful rewards offered by the

digital world. In other words, the rapid release and rapid decline of dopamine fundamentally affect an individual's motivation and ability to focus. This complex relationship is based on the neural mechanisms that govern dopaminergic signalling, particularly how these fluctuations relate to reward processing, learning, and behaviour.

Dopamine release generally occurs in two main forms: phasic and tonic. Phasic dopamine signals are rapid bursts corresponding to reward prediction errors and reflect the difference between expected and actual rewards. These bursts are necessary to reinforce behaviours that lead to positive outcomes and thus increase motivation (Hart et al., 2022). Individuals who engage in rewarding activities, such as consuming virtual content or pursuing instant gratification, experience these dopamine surges, which strengthen the connection between the action taken and the reward received, motivating them to repeat the behaviour (Owesson-White et al., 2008). However, the rapid decline that follows these spikes leads to a phenomenon known as the "dopamine crash," which diminishes the motivational drive shortly after the reward is consumed. This can create a cycle in which individuals increasingly seek instant gratification to avoid the feeling of motivational loss associated with a drop in dopamine levels. Ultimately, the focus on instant rewards can undermine the capacity for sustained effort towards long-term goals. Individuals may begin to favour short-term pleasurable experiences over more important and meaningful tasks that require patience and commitment (Viviani et al., 2019; Guitart-Masip et al., 2012).

The rapid rise and fall of dopamine are important not only for instant gratification but also for attention, focus, and cognitive function. As the brain becomes conditioned to expect quick rewards, the dopaminergic system adapts to prioritise immediate stimuli that provide rapid gratification. The rapid, action-oriented combination of dopamine responses can create an environment in which traditional tasks requiring sustained focus and attention are relatively less rewarding (Rothenhoefer et al., 2019). According to Goedhoop et al. (2022), as individuals increasingly engage in short-term activities such as browsing social media or watching short video clips, they may find it difficult to focus on long-form content or tasks requiring deeper cognitive engagement. The brain's increased sensitivity to quick rewards may lead to a decline in interest in less stimulating activities, making it harder to focus on complex tasks that typically provide delayed gratification (Salas, 2010). Moreover, this shift affects not only focus but also decision-making processes. As dopamine dynamics tend to favour short-term rewards, individuals may develop impulsivity and act on immediate desires rather than making conscious choices that consider long-term consequences. This behaviour is particularly concerning in educational and work environments where sustained attention and motivation are crucial for performance (Whitton et al., 2020).

The interaction between rapid dopamine cycles and the constant desire for instant gratification often has profound effects that lead to addictive behaviours. Excessive participation in activities that provide instant dopamine surges, such as social media interaction, gaming, or other forms of digital content, can create a feedback loop that reinforces dependence on these pleasurable experiences. As users increasingly prioritise these dopamine-driven activities, they may neglect healthier and more fulfilling pursuits such as physical exercise or personal development (Chang et al., 2017). Furthermore,

considering the cumulative effect of repeated exposure to highly stimulating environments, the relationship between dopamine and attention becomes even more complex. Over time, users may require increasingly higher levels of stimulation to achieve the same dopamine high, feeding a cycle of dependency that is difficult to break without intervention (Suri, 2002). This increasing dependence on instant gratification can contribute to broader mental health issues such as anxiety and depression by causing individuals to struggle with feelings of inadequacy stemming from an inability to focus on long-term goals or engage meaningfully with their environment (Pascale et al., 2001).

This new mental regime, associated with the rapid release and rapid decline of dopamine, not only renders the individual apathetic but also cognitively impaired. As the brain is constantly trained by rapid cuts and instantaneous stimuli, it begins to develop a physical resistance to activities requiring high cognitive effort. This situation is the inevitable result of adapting to an environment where attention spans are shortened, and cognitive load rapidly increases. Neurobiologically, this "hyper-aroused" state causes fatigue and reduced functionality in brain regions responsible for executive functions, such as the prefrontal cortex.

Digital media consumption, particularly on platforms that offer fast-paced content like TikTok and YouTube Shorts, encourages superficial processing rather than deep cognitive engagement. This leads to a decline in critical thinking and problem-solving abilities. Individuals exposed to such content become accustomed to quickly digesting information without fostering analytical or reflective thought. The shortening of attention spans due to the rapid flow of information leads to less time for digesting and reflecting on more complex ideas, ultimately weakening the ability to think deeply (Perdomo et al., 2025). Research shows that frequent interruptions from digital media tend to weaken sustained attention, and inconsistent performance on tasks that require deeper engagement may lead to a decline in critical thinking skills (Yuniarti et al., 2024). When individuals become dependent on fast, engaging content to meet their information needs, they may struggle to cope with longer, more challenging texts that require sustained focus and critical analysis. This dependency weakens neural pathways traditionally associated with sustained cognitive processing, thereby reinforcing superficial engagement with content rather than deep learning experiences (Febliza et al., 2023; Cahyono et al., 2024).

The shift towards instant gratification and rapid access to information also diminishes an individual's capacity for complex problem-solving. Regular engagement with fast-paced content promotes a cognitive state that prioritises immediate rewards over critical thinking strategies or comprehensive problem analysis. Dopaminergic pathways activated during rapid consumption reinforce the preference for instant solutions and rewards, which may hinder the ability to engage in systematic and lengthy problem-solving processes typically required in more traditional educational or professional settings (Budiyanto and Ridho, 2024). Research by Yuniarti et al. (2024) shows that technology and digital learning can increase participation, but the inherent distractions in these formats can fragment students' focus and hinder sustainable problem-solving efforts. Since effective problem-solving typically requires comprehensive exploration of multiple perspectives

and prolonged reasoning, favouring simple and quick answers creates a learning environment that prioritises speed over deep thinking.

In other words, the habit of rapidly digesting information through fast content consumption may weaken the neural pathways that facilitate analytical and reflective thinking. This is increasingly observed in the context of growing digital media interaction, where users are exposed to short bursts of information designed for rapid consumption. In fact, when the brain is constantly processing information from various digital sources, it cannot allocate sufficient cognitive resources to a single piece of information. This lack of focused attention leads to fragmented thinking, weakening individuals' ability to synthesise information and connect ideas meaningfully, thereby significantly impeding reflective thought processes (Cardoso-Leite et al., 2021). However, habitual exposure to fast-paced content can create a dependency on superficial processing, leading to decisions based on immediate reactions rather than thoughtful evaluation. Studies also demonstrate that frequent exposure to fast-paced content may reduce activation of brain regions responsible for higher-level thinking, potentially leading to diminished critical thinking and problem-solving abilities (Crone and Konijn, 2018). This is because an individual's adaptation to quick rewards affects the neural networks that support continuous attention, leading individuals to rely on instant sources of stimulation rather than long-term cognitive engagement. In fact, learning and memory formation in humans rely on neuroplasticity, which is the brain's ability to adapt and reorganise itself by forming new neural connections (Baumgartner, 2022; Basheer and Bhatia, 2019; Sasmita et al., 2018). When individuals engage less with analytical and intellectual challenges, their brains may become less adept at forming these critical pathways, leading to a decline in deep learning and critical analysis capacities over time. People's preference for faster and less demanding cognitive tasks weakens the neural architecture that supports complex reasoning (Jones et al., 2024). This lays the groundwork for future difficulties in focusing on detailed and nuanced information. Claiming that rapid access to information and rewards has only cognitive effects can lead to various misconceptions. The shift away from reflective and critical thinking due to rapid information and rewards manifests itself not only cognitively but also behaviourally (Pranathi and Jacop, 2025).

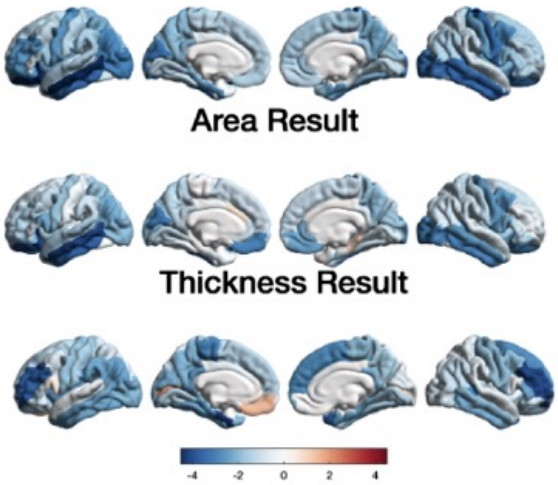


Figure 3. Long-Term Effects of High Screen Activity from Social Media on the Physical Structure of the Brain (Dong et al., 2025)

Dong et al.'s (2025) study clearly demonstrates the long-term effects of excessive social media screen time on the brain's physical structure. The blue tones in Figure 3 show that critical structural measurements on the brain's surface, in terms of volume, area, and thickness, decreased (negative correlation) after two years in adolescents who spent more time in front of screens. In other words, these blue areas can be considered the physiological counterpart of cognitive decline caused by brain rot. This decrease in cortical thickness and volume, particularly in the prefrontal cortex, suggests that the development of brain regions responsible for higher-level cognitive functions in young people, such as reasoning, impulse control, and problem-solving, has been adversely affected. These findings reveal that brain rot is not just a feeling, but also a concrete neurodevelopmental process that affects the structural maturation of the brain and paves the way for future mental health problems.

Individuals may experience increased impulsivity, reduced concentration, and difficulties with structured thought processes when confronted with complex materials or tasks. This change should be considered alarming, particularly in educational settings where the ability to engage with dense texts and solve complex problems is vital for learning and intellectual development (Dikshit and Kiran, 2023).

Traditional learning processes typically rely on textbooks, lengthy articles, and intensive reading that present nuanced arguments to help students gain a deep understanding of a subject. However, impulsivity, limited concentration capacity, and difficulties with structured thought processes, encouraged by short-form digital media, leave students vulnerable when faced with these vital materials. For a mind accustomed to instant gratification, texts offering slow, gradual progression across pages suddenly become an unbearable cognitive burden. In this context, the decline in interest in long texts is not merely a reading preference; it is the clearest indication of how brain rot, by restructuring the cognitive system, weakens the neural pathways critical for learning and intellectual development. Engaging with long texts involves sustained attention and actions requiring cognitive effort. These qualities, which individuals should possess, may be jeopardised by the habitual consumption of short-form digital media. This contrast in media formats prevents the neural mechanisms governing attention and focus from functioning to achieve the intended learning. As individuals become accustomed to receiving quick rewards, the working memory functions necessary for understanding complex, lengthy texts are impaired (Tian et al., 2023). Consequently, as individuals become accustomed to quick solutions offered by short digital content, they may struggle to focus on the longer, more nuanced narratives or arguments typically found in lengthy texts. This situation leads to fragmented learning experiences that distract attention and hinder the comprehension and retention of lengthy texts (Oktarin and Hastomo, 2024). As a result of this experience, when individuals encounter long, more challenging texts, this conditioned preference can manifest as discomfort or fatigue, as there is a conflict between the expectation of instant gratification and the higher cognitive demands of nuanced reading. Over time, this resistance to engaging with complex material may lead to a decline in the value placed on deep engagement and critical thinking skills (Ullah et al., 2024).

Individuals who become dependent on rapid information flow prioritise instant solutions and rewards over critical thinking and comprehensive analysis, driven by a combination of psychological

and neurological factors shaped by their habitual interaction with digital media. This preference is shaped by the effects of digital environments designed primarily to encourage instant gratification and ultimately leads to cognitive changes that hinder deeper cognitive engagement (Cheng et al., 2024). The rapid consumption of information on platforms such as social media and short-video applications is designed to maximise engagement by leveraging the brain's reward systems. Each piece of interactive content activates dopaminergic pathways, leading to instant pleasure and satisfaction. This instant reward cycle reinforces behaviours that support fast and superficial interactions, making the time and effort required for critical thinking—which does not provide such instant gratification—less appealing (Ma and Jiang, 2024). As individuals become accustomed to switching rapidly between tasks or to superficially digesting information, their ability to concentrate on deeper analysis diminishes. This phenomenon, known as cognitive load, hinders critical thinking because mental resources are divided as they attempt to manage environments that require divided attention (Li et al., 2024).

This resistance to long texts and complex thinking is closely related not only to how our brains learn, but also to what they consume. In the erosion of mental capacity, the quality of the content we are exposed to is as decisive as the quantity of time spent in front of a screen. The brain, moving away from content that requires high cognitive effort, naturally gravitates towards material that requires less effort, can be instantly perceived, and consumed quickly. This situation reinforces the dominance of low-quality, superficial, and "meaningless" content (meme culture, fleeting trends, content clutter) that constantly confronts us in the digital ecosystem. The constant feeding of our minds with this low-density, fast-paced, repetitive 'digital food' systematically slows down our cognitive functions, much as an unhealthy diet weakens the body (Jaks et al., 2019). In fact, the constant consumption of low-quality, superficial, and 'meaningless' digital content such as memes, trends, and other fast-paced information fragments negatively impacts cognitive processes, attention, and critical thinking, thereby reducing mental capacity. This is because engaging with superficial content typically encourages fast, superficial processing rather than deep cognitive involvement. As a result of the superficial processing perpetuated by constant exposure to easily digestible media, information is encoded more weakly in long-term memory. This occurs because deeper cognitive efforts, such as analysing and synthesising information, are bypassed in favour of activities that provide quick gratification but are less meaningful. The failure to retain and understand complex topics requiring comprehensive analysis is seen as a consequence of digital content consumption (Kurtz and Gerraty, 2009). According to Ventura et al. (2010), individuals who frequently consume distracting content, such as on social media, are likely to have difficulty sustaining attention for long texts or complex ideas. This effect emerges as the brain becomes accustomed to short-term stimuli, reducing the ability to sustain thoughtful interactions for extended periods. As a result, individuals may feel increasingly restless when attempting to engage with more challenging material. An individual who primarily engages with simple content may not utilise the mental abilities necessary to solve complex problems. Consequently, individuals may encounter difficulties when approaching and solving multifaceted problems that their cognitive training typically prepares them to solve (Schiro et al., 2020). This is because engaging with low-quality digital content often limits cognitive flexibility, i.e., the ability to switch between different concepts or think about multiple concepts simultaneously. Regular exposure

to fast media consumption can reinforce rigid thinking patterns by causing individuals to expect simplicity and speed rather than complexity and depth. This type of cognitive flexibility deficit is considered to limit an individual's ability to engage in detailed discussions or adapt their thinking to new and challenging contexts (Kucker et al., 2024).

Due to the cognitive load and loss of cognitive flexibility resulting from consuming low-quality, superficial, and meaningless content, individuals are finding it increasingly difficult to distinguish between high-quality information and digital noise. This situation can be attributed to the convergence of cognitive, psychological, and environmental factors stemming from the pervasive nature of digital content consumption. The rise of low-quality, superficial media, such as memes and trends, plays a significant role in this situation. The constant flow of information from digital devices overloads cognitive processing abilities, making it increasingly difficult for individuals to effectively prioritise and retain information (Clemente-Suarez et al., 2024). As a result of this cognitive load, individuals struggle to critically evaluate the content they encounter. As users are exposed to excessive information bombardment, their ability to distinguish meaningful content from superficial content diminishes. This reinforces the cycle of superficial engagement (Cho et al., 2024).

Habitual exposure to low-quality content conditions users to interact with information passively rather than actively. The fast-paced nature of social media interactions prioritises quick reactions over thoughtful analysis. An individual's tendency towards superficial interactions can distract from and hinder critical thinking. Consequently, when individuals encounter multiple information sources, they may resort to intuitive processing, making quick judgments without engaging in deeper analytical thinking (Yousef et al., 2025). Individuals often lose the motivation to seek, process, and appreciate higher-quality information. This can create a preference for entertaining but shallow content, further eroding the ability to distinguish valuable information from digital noise (Marsh et al., 2024). In this case, exposure to low-quality information also affects individuals' perception of quality. Consequently, over time, individuals who primarily consume superficial digital content may come to view engaging but less informative material as equally valid, or even preferable, to more substantive content. This can alter the criteria for evaluating information and reduce the cognitive filters individuals typically apply when assessing content validity or reliability. The effects of filtering meaningful and meaningless information diminish as the normalisation of superficial content consumption (Xiao, 2025). As a result of this decline, individuals increasingly prefer experiences that appeal to immediate sensory pleasures. This preference reinforces a cycle in which people become increasingly impatient with detailed content that requires active participation and thought. This sensory satiety limits cognitive engagement, reducing the capacity to pay meaningful attention to and process complex arguments (Auxier and Vitak, 2019).

The Psychological and Social Effects of Brain Rot

"We are increasingly connected to one another, yet strangely more alone."
Sherry Turkle

As explored in detail in previous sections, the consumption of short, superficial digital content driven by the Attention Economy erodes an individual's attention span and deep cognitive processing abilities, laying the groundwork for brain rot. However, this decline is not limited to cognitive functions; it also has complex psychological consequences that profoundly affect an individual's emotional balance and social relationships. The constant expenditure of mental energy on instant gratification triggers emotional exhaustion, while rapid rises and falls in the dopamine cycle reinforce mood swings and a constant feeling of dissatisfaction. When combined with the social comparison mechanisms arising from passive consumption of digital media, this situation inevitably creates tension for mental health and social bonds, unlike traditional learning and social interaction. Therefore, to fully understand the phenomenon of brain rot, it is necessary to go beyond cognitive difficulties and examine the complex correlations and causal links between the most common mental health problems in today's individuals (anxiety, depression, burnout, etc.) and digital consumption habits.

In recent years, the relationship between intensive social media use and individuals' levels of depression has attracted increasing attention. Research shows that the prevalence of digital platforms can exacerbate mental health problems, particularly among vulnerable groups such as adolescents and young adults. This connection is established through various mechanisms. First, intensive social media use is often associated with increased feelings of loneliness and isolation. Wang et al. (2025) emphasise that intensive participation in social media contributes to reduced self-esteem by leading to social appearance anxiety and body control behaviours, which in turn exacerbate depressive symptoms. The superficial connections offered by social media increase feelings of loneliness by failing to provide adequate emotional support.

Secondly, social media platforms create environments conducive to social comparison, where users compare themselves to others' carefully curated lives. Negative self-evaluations arising from social media interactions trigger or exacerbate depressive feelings by creating harmful feedback loops (Yang et al., 2025). Furthermore, as emphasised by Halim et al. (2023), the risk of exposure to cyberbullying is particularly significant among adolescents on social media and is associated with high levels of depression and suicidal thoughts. In addition to this psychological burden, information overload caused by the media can also increase anxiety and depression. Grygarova et al. (2022)

note that media practices such as reading negative or sensational news can exacerbate mental health problems during stressful periods. This cognitive stress, caused by an inability to process excessive amounts of information, is directly related to an increase in depressive symptoms.

The proliferation of behaviours such as spending excessive time in front of screens and scrolling until reaching negative content (doomscrolling) raises significant concerns about their effects on emotional regulation and perception of reality. This is because screen time used in this manner leads to increased anxiety, depression, and behavioural problems, particularly among young people. Furthermore, the high screen exposure resulting from these behaviours disrupts sleep patterns, leading to increased emotional difficulties. Ultimately, this style of social media use can jeopardise an individual's capacity for effective emotional regulation (Trott et al., 2022; Cerniglia et al., 2020; Bahadur and Karaca, 2023; Marciano et al., 2021). The constant flow of information from screens fosters a reactive rather than a reflective mindset, making it difficult for individuals to resort to adaptive emotion regulation strategies, such as cognitive reappraisal (McRae and Gross, 2020). Research indicates that such media consumption habits can lead to a cycle of emotional dysregulation, increase susceptibility to mood disorders, and impair overall mental health (Nasir et al., 2022; Wang et al., 2024). The negative effects of doomscrolling are often exacerbated by a distorted perception of social reality. In such cases, individuals may develop an exaggerated fear of risks and a sense of impending doom. This phenomenon is supported by studies linking alarmist media consumption to increased levels of anxiety and stress (Bahadur and Karaca, 2023). Furthermore, various studies have shown that children and adolescents, in particular, may exhibit delays in emotional understanding and regulation associated with increased screen exposure (Wang et al., 2024; Marciano et al., 2021; Bozatlı et al., 2024). These deficits may manifest as reduced social skills and diminished ability to distinguish between reality and digital content. This can lead to difficulties in forming healthy relationships and adapting to social situations (Bahadur and Karaca, 2023; Marciano et al., 2021). In light of these findings, it is crucial to consider the broader effects of these behaviours on mental health. Inconsistent behaviour patterns fuelled by prolonged screen use can undermine individuals' emotional resilience and weaken their ability to process emotions and effectively overcome life's challenges (McRae and Gross, 2020). These cognitive and emotional deficits can jeopardise an individual's ability to engage with reality in a balanced manner and may lead to detachment or depersonalization behaviours by affecting their judgements, decisions, and interactions with others (Trott et al., 2022).

Depersonalisation is one of the core personality disorders that can be described as a detachment from the self or the external world. Depersonalisation refers to a feeling of detachment from one's thoughts or body and is defined as the external world feeling unreal or dreamlike (Onochie and Verghese, 2025; Watson, 2022; Sasinka et al., 2018). The state of depersonalisation can be so intense that individuals may express that they do not feel like themselves or that their bodies no longer belong to them. This can significantly disrupt the individual's connection with reality and the associated emotional experiences, fostering feelings of alienation in both personal and social contexts (Lanius et al., 2012). For example, individuals exposed to violent media may experience a significant decrease in emotional response and empathy towards the suffering of others. As a result, a

decrease in sympathetic responses and an increase in emotional numbing behaviour may be observed in individuals (Lee et al., 2024; Bushman and Anderson, 2015). This type of depersonalization is particularly evident in children and adolescents who are constantly exposed to violent images on social media platforms, leading to a decrease in sensitivity to violence and potentially normalised aggressive behaviour (Carrasco et al., 2025; Cohrssen et al., 2021). Social media reinforces this effect by frequently bombarding users with graphic content and distressing events, encouraging what Varma (2025) terms a state of "psychic numbing" (Varma, 2025). This numbing diminishes the capacity to emotionally engage with both personal and societal issues, perpetuating a sense of detachment from reality (Castro et al., 2023). Interactions with selected content on social media can further deepen this sense of disconnection by shaping perceptions and creating a mismatch between online experiences and real-life conditions (Sastri et al., 2025; Lee, 2017).

Social media usage creates an environment where depersonalization and disconnection can develop. Algorithms that govern content delivery often prioritise sensational or extreme content to increase user engagement, leading to repeated exposure to disturbing images (Carrasco et al., 2025; Sbeglia et al., 2024). This consistent interaction may reduce individuals' likelihood of responding emotionally to the violence or suffering they observe online (Miedzobrodzka et al., 2021; Sexton-Finck, 2020). Furthermore, social media platforms function as informal networks where traumatic or distressing experiences can be shared rapidly and widely, which may lead to depersonalization among viewers. For example, witnessing online harassment or public violence may initially provoke anger, but with continued exposure, emotional response may diminish, and a more detached perception of such events may develop (Treadwell et al., 2014). Users who are highly engaged with social media may develop altered perceptions of social norms and behaviours, leading them to accept aggressive actions as normal (Kogen and Dilliplane, 2019; Wilson, 2017). As users become desensitised to real-world violence through media consumption, they may also become detached from social realities and attach less importance to violent acts and their consequences (Keum et al., 2022; Lee et al., 2024). In other words, social media users may show less emotional investment or interest in real-life events. This situation may contribute to a sense of detachment from social responsibilities and to a lack of empathy towards others (Call et al., 2002).

In fact, what deepens this situation is the cognitive dissonance individuals experience when their online personalities do not match their offline realities (Janssen et al., 2024). Furthermore, intensive social media use can lead to superficial interactions, which, in turn, can foster a lack of critical thinking. This dependency can impair users' ability to engage meaningfully with complex issues, leading to feelings of helplessness or hopelessness when faced with real-world challenges (Yang et al., 2025). Furthermore, increased time spent on social media contributes to a sedentary lifestyle and poor sleep quality. It can be said that social media overload is associated with deteriorating mental health (Xie et al., 2023). This is because younger generations are known to be less satisfied with social interactions than previous generations and, as a result, experience an increasingly poor mood (Setiarini et al., 2022).

These negative effects on mental health, particularly depression and anxiety caused by loneliness, social comparison, and emotional feedback loops, consume the individual's mental energy and directly target attention and cognitive control mechanisms. The mental fatigue and constant feeling of dissatisfaction caused by brain rot lead users towards faster and more superficial content. Ironically, this type of content becomes the fundamental driving force that deepens attention deficit (Park et al., 2019; Wu et al., 2023). In fact, this situation can be explained by cognitive overload, behavioural patterns, and certain neurological changes caused by digital interaction. The constant bombardment of information from social media platforms places excessive strain on the brain's ability to process and focus on important tasks, leading to cognitive overload. The intensive use of short video-based platforms, in particular, leads to reduced attention levels by inefficiently using cognitive resources. Accordingly, users' cognitive resources are frequently redirected to manage the flow of digital content, diminishing their ability to sustain attention on meaningful tasks (Walla and Zheng, 2024). This ultimately results in cognitive fatigue, combined with impaired deep thinking and concentration. In fact, individuals who become accustomed to consuming fast-paced content that requires little cognitive engagement risk compromising their ability to concentrate on complex tasks. The impulsive nature of social media interactions conditions the brain to prefer instant gratification, making it difficult to exert effort on activities that provide delayed satisfaction, such as studying or engaging in lengthy academic tasks (Kakambog et al., 2025). This cycle can be more severe in individuals who already experience attention difficulties. Both the intensity of social media use and addiction-like behaviours can exacerbate attention-related problems. This suggests a two-way relationship in which individuals prone to attention deficits may perpetuate their cognitive difficulties by engaging intensively with social media (Boer et al., 2019).

Another significant factor that increases mental distraction is multitasking on social media. Heavy media multitasking, which involves using multiple media formats simultaneously, is known to be detrimental to attention span. Kokoç's (2021) study shows that multitasking on social media negatively affects attention control and often leads to a decline in academic performance. Individuals' difficulty filtering out distractions can further exacerbate the attention deficit typically seen among heavy social media users by reducing their ability to focus on a single task. Underlying this increase is the brain's neurophysiological response. Heavy media multitaskers often exhibit altered activity patterns in brain regions associated with attention control, leading to distraction from primary tasks, and these changes may have long-term effects on cognitive development (Gorman and Green, 2016). Heavy social media use before bedtime, as noted by Hamilton and Lee (2021), can disrupt sleep patterns, leading to increased fatigue and stress. Adolescents who prioritise social media due to its perceived importance are generally more prone to daytime sleepiness and stress, which can exacerbate attention problems by contributing to poor sleep quality and impaired mental health.

Attention deficit and cognitive fragmentation are merely the initial symptoms of brain rot. The brain's constant overload from instant gratification and media multitasking (Gorman and Green, 2016) can trigger chronic stress, leading to emotional and physical exhaustion. Indeed, a constantly fragmented mind struggles to manage the demands of daily life, and this cognitive struggle is

increasingly linked to rising stress levels among young people due to heavy social media use (Mark, 2023).

Individuals who use social media intensively cannot process the enormous amount of information on it with this mental activity. This leads to cognitive overload, leaving individuals feeling overwhelmed by the volume of content demanding their attention (Slavin et al., 2018). This is because the dense information content on social media exposes individuals to more negative or misleading content. As a result, decreases in well-being and increases in stress levels are observed (Marciano et al., 2022). In particular, young users who compare themselves to others based on carefully selected moments in online feeds can develop feelings of low self-esteem and inadequacy, which can affect their well-being. Negative comparisons arising from social media use among young people lead to feelings of inadequacy and reduced self-confidence, thereby increasing stress levels (Sarıalioğlu and Oluç, 2024; Churiwala et al., 2022).

In addition to this psychological burden, social media is a platform where negative interactions frequently occur, including cyberbullying, which is a well-documented source of stress for young people. According to Shannon et al. (2022), experiences of online harassment can exacerbate pre-existing mental health issues by increasing anxiety, depression, and stress. Furthermore, the phenomenon known as Fear of Missing Out (FOMO) is significantly amplified through social media. Young people feel compelled to stay constantly connected and engage with their peers' updates to avoid feelings of exclusion. This pressure leads individuals to feel the burden of being always available and responsive, increasing stress that can lead to burnout. This constant search for social approval and participation can multiply emotional tension (Ana, 2021). Particularly as a result of excessive social media use and consequently FOMO, individuals develop a compelling need to check notifications and updates. This situation, which can be considered a form of addiction, can lead to unhealthy consumption habits that manifest as digital stress, such as the behaviour of constantly maintaining one's online reputation and presence on social media (Amin and Khan, 2020). At the core of this situation lies the practice of self-presentation on social media and the desire to be seen by others. This phenomenon has profound effects on individual self-confidence and identity development, particularly among young people. This is because the way individuals present themselves online increasingly shapes their self-worth and perceptions of identity.

Individuals generally equate their self-confidence with the attention they receive online, including likes, shares, and comments. The intensive use of social media can lead to low self-confidence among adolescents. It can be said that the need for external validation can significantly weaken self-perception (Woods and Scott, 2016). When young people frequently compare their lives to the carefully crafted, idealised images presented by others on social media, they may feel inadequate or less valuable, leading to a decline in self-esteem. Since fluctuations in online validation can determine emotional states and self-evaluation, this reflection of self-worth can be unstable (Yang et al., 2023). In fact, the act of self-presentation online is often accompanied by comparisons with peers that emphasise physical appearance, lifestyle, and social status. The pressure to present a positive identity can increase stress levels in individuals and encourage behavioural responses that prioritise image over self. The

carefully crafted nature of online identities distorts reality and shapes harmful ideals that many young people feel compelled to achieve (Meeus et al., 2019). In other words, young people may become dependent on digital validation to shape their identities. Receiving positive feedback, such as likes or comments, can temporarily boost self-confidence. Conversely, negative interactions or a lack of interaction can lead to internalised feelings of worthlessness. In fact, the interaction between social media and self-confidence, driven by peer approval, often shapes an individual's self-evaluation. This dynamic reveals how external social media effects can either strengthen or undermine personal identity development (Nagesh et al., 2019; Vincente-Benito and Ramirez-Duran, 2023).

The formative years of adolescence are critical for identity development. Social media allows young people to explore different aspects of their identity by presenting themselves. However, pressure to conform to certain online personas can lead to a fragmented identity. This fragmentation can hinder authentic self-expression and create a sense of detachment from one's true self (Banyai et al., 2017). The constant need to display an idealised self can increase anxiety and stress by making individuals feel compelled to maintain a certain image. The resulting stress can have detrimental effects on mental health and overall well-being, further complicating issues of self-confidence and identity (Charoenwanit et al., 2025).

In fact, adolescence is a critical developmental stage characterised by identity exploration, peer influence, and social norms. Social media use and exposure to content during this period have a decisive impact on personality. This is because social media platforms offer a wide variety of content that serves as a model for adolescent behaviour. Frequent exposure to peers and influencers who exhibit certain behaviours, from fashion choices to lifestyle habits, increases the likelihood of Emulation. In the context of social media, adolescents observe behaviours they find appealing or that align with their developing sense of identity and gradually internalise them (Vannucci et al., 2020). This effect is further amplified by adolescents' tendency to shape their identity through their online presence, often leading them to imitate behaviours that reflect their desired self-image. This transformation increases adolescents' opportunities to observe and subsequently imitate their peers' behaviours. The immediacy of social media interactions can amplify the effects of peer influence, as social reinforcements such as likes and comments encourage adolescents to imitate behaviours that receive positive feedback within their online communities (Nesi et al., 2018). Indeed, social comparisons are also crucial in this context. Adolescents frequently engage in upward and downward social comparisons while navigating social media, which can affect their self-confidence and, consequently, their behaviour. These comparisons can have negative effects on self-image, leading adolescents to imitate the behaviours of individuals they perceive as more successful or attractive (Qi et al., 2024). This constant comparison may lead adolescents to change their own behaviour to conform to the behaviour shown in their feeds, driven by a desire for similar approval and recognition (Guo et al., 2024). The social media culture, with its instant and widespread access, can create an environment where adolescents often feel compelled to conform to certain standards displayed by online influencers and peers. This is because adolescents may use social media to guide their behaviour according to what appears valuable in their social circles (Reich et al., 2021; Lyons and Berge, 2012).

The excessive reliance on virtual validation mechanisms for individual identity and self-worth is one of the most significant indicators of the psychological effects of brain rot. However, this digital dependency not only transforms the individual's inner world but also dramatically alters their social functioning and the quality of their relationships with others (Samra et al., 2022). Individuals who define their self-worth through the pursuit of validation begin to neglect the complex emotional and social skills required for face-to-face interactions as they direct their energy towards the screen. When non-verbal cues such as intonation, pauses, or micro-expressions in a real-life conversation are replaced by emojis and short reactions in rapid digital interactions, our social skills and, most importantly, our capacity for empathy systematically deteriorate (Mehdizadeh, 2010).

Face-to-face interactions involve a complex interplay of verbal and non-verbal communication cues, including body language, facial expressions, and tone of voice. Digital interactions, particularly through text-based platforms, significantly reduce exposure to these fundamental non-verbal cues. In particular, reliance on digital communication can diminish the ability to effectively recognise emotional cues, which are crucial for social interaction. As individuals engage more with online communication, they may lose the skills needed to read social cues and respond appropriately in real-life situations (Waytz and Grey, 2018). This is because, by its nature, social media prioritises superficial relationships that emphasise quantity over quality. As young people focus on establishing online connections, they may neglect the depth and sincerity required to develop strong interpersonal relationships. Therefore, rather than a direct decline in social competence, young individuals need to understand these relationships in nuanced ways (Guarnaccia et al., 2024). For young individuals who cannot control this difference, particularly intensive social media use can increase anxiety and social withdrawal. As a result, face-to-face interaction skills may further diminish. This is because many young people experience social anxiety stemming from fear of comparison and negative evaluation, thereby inhibiting their willingness to engage in face-to-face social interaction. This anxiety can act as a barrier to participating in constructive social interactions and may intensify feelings of isolation (Nabi and Wolfers, 2022).

In fact, social isolation increases the time spent on social media. This intense time spent on social media exposes individuals to a rapid flow of content, which, in turn, leads to cognitive overload. Young individuals who are constantly exposed to notifications and updates may find it increasingly difficult to focus during face-to-face communication. Such distractions hinder the emotional bond necessary for empathy in social interactions (Gautier et al., 2021). According to Wilson et al. (2007), the loneliness resulting from this impeded emotional bond can significantly contribute to cognitive decline, potentially paving the way for serious diseases such as Alzheimer's. It is suggested that as individuals feel lonely, they may withdraw from social interactions, disrupting their cognitive interactions with others and feeding a cycle of isolation. As a result of this feeding, as cognitive functions decline, individuals may withdraw socially and feel increasingly inadequate in engaging in social interactions. An inability to process social cues and engage in meaningful conversations can lead affected individuals to withdraw from social networks, further increasing their sense of isolation (Brenowitz et al., 2018). This situation can also impair emotional regulation skills. Individuals who struggle to effectively manage social interactions may gradually reduce their efforts to socialise due

to impaired emotional health (Gallaway, 2017). As a result, increased social media use can also affect brain pathology. Following prolonged social media use, the inability of superficial online interactions to provide meaningful connections, lacking the depth necessary for real relationships, can alter brain regions involved in memory and cognition. These neurobiological changes play a supporting role in social processing disorders. These effects can deepen with advancing age (Uquillas et al., 2018; Santiago et al., 2023; Walter and Sandsmark, 2023).

Deepening social isolation and loss of empathy reveal the psychological consequences of brain rot. However, this mental erosion does not remain solely at the behavioural or emotional level; the superficial interaction format that weakens our face-to-face skills inevitably transforms the language we use itself. The dependence on speed, instant gratification, and short-form content not only shortens our attention span but also superficialises the communication tools that shape our ability to express and understand complex ideas. Now, rather than presenting long, detailed ideas, there is a prevailing tendency to express complex emotional or cognitive states with simple labels, rapidly changing jargon, and visual abbreviations. This situation directly affects both the content and the depth of communication. This new digital language sacrifices depth of meaning in the name of efficiency and speed. This new form of communication created by the younger generation creates a cultural identity on the one hand, but on the other hand, it jeopardises the process of conveying and understanding complex ideas, which is the fundamental function of communication. In fact, this situation is the ultimate result of accelerated cognitive decline caused by brain rot.

The rapidly changing, superficial language of digital culture, particularly among Generation Z and Generation Alpha, undermines the depth and complexity of communication. This shift, which includes slang, abbreviations, and playful language developed under the influence of social media, has different effects on how individuals express themselves and interact with others. Young people increasingly prefer fast and concise forms of communication that prioritise brevity and immediacy. Slang and informal language are common on heavily used platforms such as Twitter and Instagram, often resulting in a communication style that lacks depth and complexity. In fact, linguistic richness is sometimes sacrificed for speed and visual appeal. This situation also leads to the emergence of more humorous or simpler messages. This change in communication styles has the potential to limit participation in more complex discussions that require ideas to be expressed in detail (Puspita and Ardianto, 2024).

The use of simplified language and abbreviations learned through social media and used in daily life can hinder the development of critical thinking and reflection skills. As individuals become accustomed to digesting content quickly, they may struggle to engage deeply with material that requires analysis or synthesis. This superficial interaction can lead to a tendency to accept information at face value, without questioning its validity or consequences or evaluating it critically (Becker, 2021). This acceptance also influences how individuals form their identities. Generation Z and Generation Alpha often use these language forms to establish group identity and social belonging while maintaining their social lives. Slang and abbreviations now serve as cultural markers, shaping how young people express their experiences and values (Paoleti and Mujahidah, 2025). While this linguistic creativity fosters a sense of community among young people, it limits the variety of expression necessary

for emotional depth, a fundamental component of interpersonal communication. Young people's emphasis on brevity and meme culture in their expressions makes it difficult to establish genuine emotional connections. This new form of expression, which has found widespread use through social media and threatens the depth of language, diminishes the ability to convey complex emotions or achieve empathetic understanding. In fact, the informal nature of digital communication can pose challenges for young people who must navigate more formal settings where traditional language standards apply. The frequent use of non-standard spelling, emojis, and coded language erodes the foundations of effective written and verbal communication, negatively impacting academic or professional competence (Melissa et al., 2024; Puspita and Ardianto, 2024).

As can be seen here, brain rot not only weakens an individual's ability to think deeply and express complex emotions, but also disrupts the structure of the common language that underlies the most basic social bonds. A mind conditioned to seek instant gratification avoids expressions that require long-term memory and contextual knowledge. This avoidance manifests itself in the excessive speed and superficiality of memes, jargon, and abbreviations characteristic of digital culture (Evizariza, 2025). This new language maximises speed at the expense of the permanence of meaning. As a result, one generation communicates through rapidly changing, instantaneous references, while the other, using traditional language that carries the cultural and historical weight of these references, drifts further apart without understanding each other. In other words, the rapid development of digital language, particularly among younger generations who use slang, memes, and abbreviations, creates a semantic gap between older and younger individuals (Slavin et al., 2018). Thus, this different language structure affects intergenerational communication and can hinder the transmission of social memory and cultural knowledge. The informal, often fragmented nature of digital communication can lead to misunderstandings across generations. Older individuals, who rely on more structured and explicit forms of language, may struggle to interpret the context-specific slang and memes commonly used in younger generations' interactions. This incompatibility can create barriers, leading to frustration and disengagement during conversations. As a result, shared historical knowledge and traditions, which are vital elements of social memory, risk being misinterpreted or lost entirely (Setiarini et al., 2022).

The meaning conveyed in digital language is often heavily dependent on contexts and cultural references that are familiar only to specific groups. The use of memes typically involves inside jokes, cultural interpretations, and references that may not be passed down across generations. While younger audiences may assume a shared understanding based on exposure to contemporary cultural phenomena, older adults may be unfamiliar with these references, which can increase divisions in understanding and connection (Wu et al., 2023). In fact, many young people prioritise communication appropriate to social media, emphasising brevity and informality. Representations of social memory, which typically require extensive discourse, may be affected by these linguistic shifts. The tension between instant, contextual communication and abstract discussion can disrupt efforts to share intergenerational historical narratives (Slavin et al., 2018). Consequently, this increasingly inaccessible form of communication makes the transfer of cultural knowledge difficult (Churiwala et al., 2022).

Ways to Protect Against Brain Rot and Mental Resilience

"There is a gap between stimulus and response;
and within that gap lies our power to choose our response."
Viktor Frankl

The limitless flow of stimuli in the digital age constantly tests an individual's attention, mental continuity, and inner peace. People today, especially younger generations, suffer from mental hunger amid an abundance of information; they live in a cognitive world trapped in cycles of instant gratification. The way to escape this contemporary form of cognitive wear and tear, dubbed "brain rot," is not only to disconnect from digital tools but also to restore the mind to balance, self-control, and sustainable attention capacity. In this context, restructuring one's own cognitive ecosystem, i.e., learning to manage attention, set limits on stimuli, and re-establish dopamine balance, has become a fundamental skill. Digital detox practices that individuals incorporate into their daily lives, such as consciously limiting information flow, using time in a planned manner, increasing offline social interactions (family and friend gatherings), and maintaining mindfulness-based practices, are seen as effective methods for preventing the formation of brain rot or mitigating its effects (Yılmaz and Aktürk, 2025). Digital detox and dopamine detox strategies do not merely restrict technology use; they enable individuals to establish a healthy relationship with their own neuropsychological processes. These strategies are critical for regaining mental clarity, extending attention span, and rebuilding internal motivation independently of external stimuli.

Digital Detox

A digital detox is a period during which individuals intentionally reduce or eliminate their use of digital devices and social media platforms. This practice aims to reduce the negative effects of excessive digital interaction, such as stress, anxiety, and cognitive overload, allowing individuals to reconnect with themselves and their surroundings without being constantly distracted by technology. The goal of digital detox is not merely to distance oneself from technology, but to develop healthier habits that support mental health and social interactions (Mirbabaie et al., 2022).

Research in the field of mental health shows that reducing exposure to digital stimuli can lead to the renewal of cognitive resources, increased focus, and a reduction in anxiety and depressive symptoms. For example, disconnecting from constant digital interaction is seen as quite beneficial in helping individuals regain their attention. This makes it easier for individuals to focus better on offline activities that enhance their well-being (Setiarini et al., 2022; Syvertsen, 2020). Furthermore, undertaking a digital detox can reduce the negative emotional responses associated with constant online interaction among digital tool and social media users, leading to greater emotional resilience

and improved mental health. It is known that these individuals generally feel more peaceful and satisfied after distancing themselves from digital platforms (Wu et al., 2023). This is because avoiding digital media can strengthen interpersonal relationships by fostering more meaningful face-to-face interactions. Reducing screen time significantly increases overall life satisfaction by supporting the development of social skills and emotional bonds in offline environments (Slavin et al., 2018).

Digital detox is a conscious awareness process that aims to preserve attention, emotional balance, and mental clarity by restructuring an individual's relationship with technology. This approach is not limited to reducing screen time; it requires the individual to reassess their digital interactions, their purposes for using them, and their psychological responses. Digital detox practices can be examined along two main axes: primarily emotion-focused and problem-focused strategies (Mirbabaie et al., 2022).

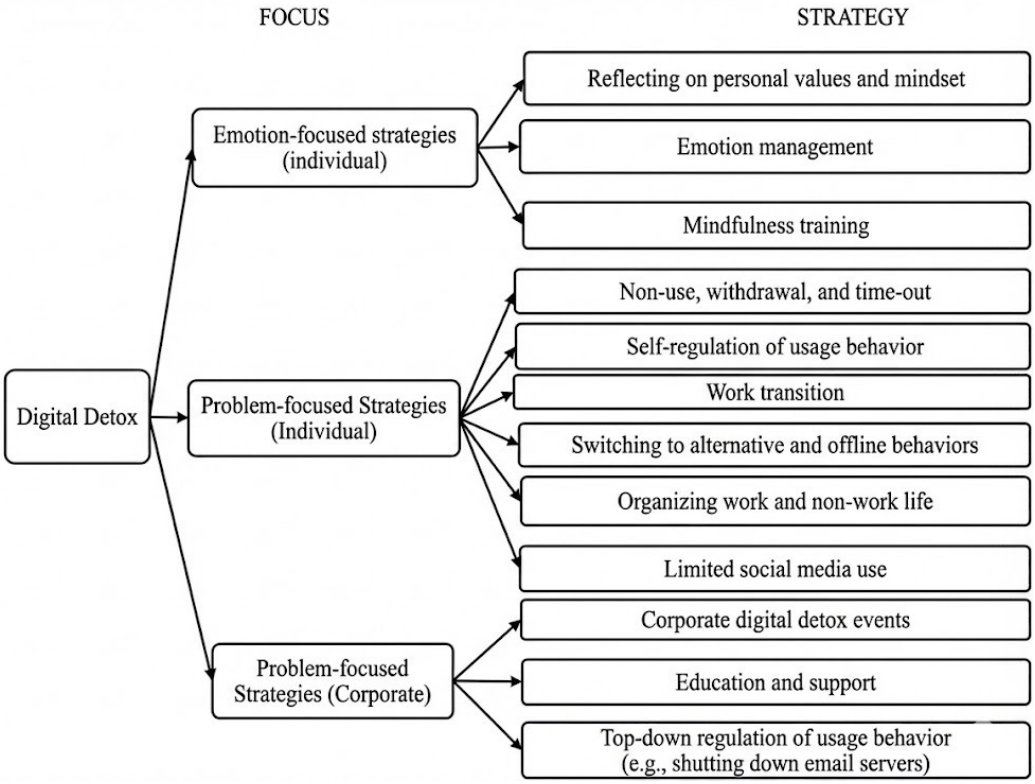


Figure 4. Digital Detox Applications (Mirbabaie et al., 2022)

1. Emotion-Focused Strategies (Individual Level)

Emotion-focused strategies focus on developing the individual's ability to recognise and manage their emotional responses while regulating their technology use. In this context, reviewing personal values and mental attitudes makes the individual's approach to technology more conscious (Syvertsen and Enli, 2019). Emotion management practices help balance stress, anxiety, and feelings of social comparison triggered in digital environments. Furthermore, mindfulness-based practices break automatic digital behaviour cycles by enabling individuals to focus on the present moment. Such strategies transform technology use from an escape or automatic response into a conscious choice (Pfaffinger et al., 2020).

2. Problem-Focused Strategies (Individual Level)

Problem-focused strategies aim for direct behavioural changes in the individual's relationship with digital tools. Limiting usage, taking breaks, or disconnecting for specific periods allows the cognitive system to regain balance (Braukmann et al., 2018). Regulating one's own usage behaviour is an effective method, particularly in breaking the addiction cycle in social media usage. Practices such as limiting social media use, utilising digital wellbeing applications, engaging in offline activities, and clearly separating work and life domains contribute significantly to reducing digital fatigue. These strategies help individuals regain a sense of control at both the neuropsychological and behavioural levels (Przybylski et al., 2021; Syvertsen and Enli, 2019).

3. Problem-Focused Strategies (Organisational Level)

At the organisational level, digital detox involves organisations implementing structural changes to prevent digital overload and distraction. Top-down regulation of usage behaviours (e.g., shutting down email systems at certain times) alleviates the pressure on employees to be constantly online. Corporate digital detox activities strengthen social connectedness by encouraging employees to interact face-to-face. Training and support programmes establish a culture of digital awareness and increase employees' mental resilience. Thus, digital detox goes beyond being an individual initiative and becomes an organisational health policy (Görland and Kannengieber, 2021; Karlsen, 2020).

Practical Steps for Digital Detox

Overcoming the effects of brain rot requires systematically disengaging the automatic pilot control that the attention economy has established over our brains, rather than relying on individual willpower. The goal is not to reject technology entirely, but to break the cycle of cognitive dependency and re-establish conscious control. This process can be approached in three stages:

Table 1. Three-Stage Plan for Recalibrating the Mind

Stage No.	Scheme Name and Purpose	Core Actions and Mechanism
Stage 1	Hard Reset (Breaking the Cycle)	Shocking the dopamine reward system and resetting the baseline reward threshold.
		Defined Digital Fast / Gradual Reduction
		Radical Application Cleanse
Stage 2	Environmental Control (Maintaining Focus)	Redesigning the environment to make brain rot more difficult, rather than relying on willpower.
		Setting Clear Boundaries / Selecting Notifications
		Making the Screen Boring (Grey Tinting)
		Physical Boundaries
Stage 3	Cognitive Repair (Building Resilience)	Reinforcing weakened attention muscles and integrating healthy lifestyle habits.
		Single-Task Training
		Mindfulness and Thinking / Boredom Programming (Default Mode Network)
		Participation in Physical Activities / Social Support
		Consuming Non-Digital Content

Stage 1: Hard Reset and Gradual Reduction (Breaking the Cycle)

The primary goal of this stage is to reset the baseline reward threshold and manage withdrawal symptoms by applying a "shock" to the brain's overstimulated dopamine system.

1.Defined Digital Fast (Hard Reset):

Individuals can reduce their use by gradually establishing technology-free periods throughout the day or week, rather than eliminating all digital elements immediately (Churiwala et al., 2022). This gradual progression can help minimise feelings of deprivation that may accompany an abrupt halt. However, prior to this gradual approach, practising a "Digital Fast" by abstaining from all stimulating digital platforms except for work and urgent communication for a specific period of 24 to 72 hours cuts off the brain's constant exposure to cheap dopamine flow and signals the first signs of the natural reward system beginning to heal (Bhavana, 2024).

2.Radical Application Cleanse:

It is critical for users to delete all applications that could be considered time traps, such as social media and short video platforms, which feed the endless scrolling cycle on their phones. Deleting apps rather than hiding them can prevent impulsive use, as reinstalling and logging in again when desired requires extra effort (Anderson, 2024).

Stage 2: Environmental Control and Structural Boundaries

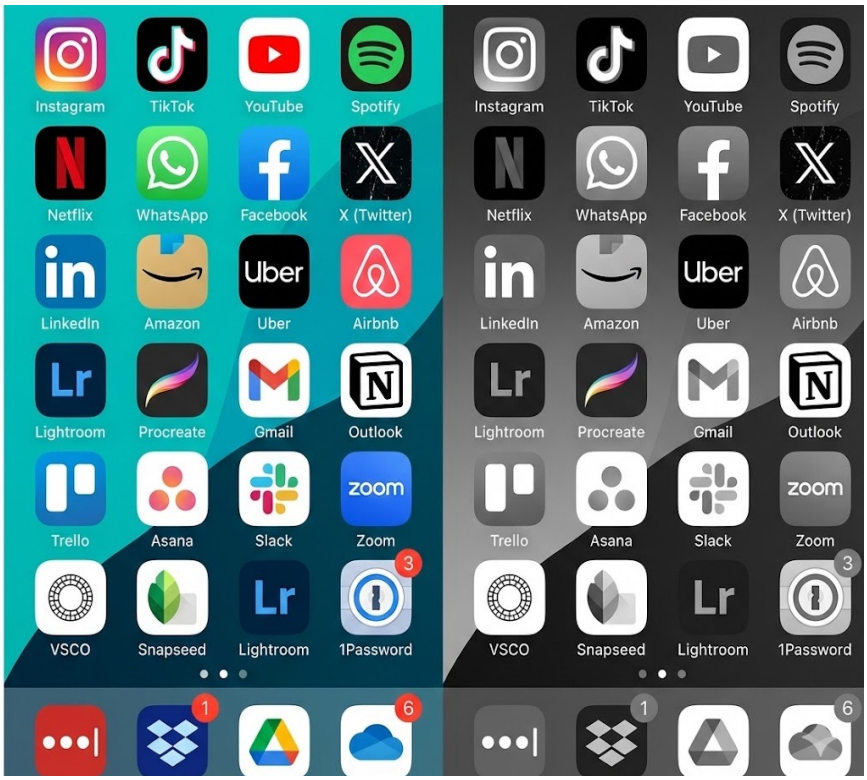
This stage involves structurally redesigning the environment to make the brain-dulling process more difficult and focus easier, rather than relying on the individual's willpower.

3.Setting Clear Boundaries and Choosing Notifications:

Setting specific times for digital use can help create a structure that promotes balance. Times should be set aside for work, social media, and leisure activities to establish a healthier relationship with technology. To reinforce these structural boundaries, turning off all app notifications (audible, visual, and vibrating) except for direct calls and specific instant messages from people makes it easier to reclaim control of attention from algorithms (Desal, 2024).

4.Dulling the Screen and Physical Boundaries

Neurologically, setting the phone's colour settings to "Grayscale" mode prevents bright colours (red notification dots) from triggering the reward centre, making usage more tedious (Snider, 2025). Furthermore, defining specific off-limits areas for the phone within the home and, in particular, keeping the bedroom free of digital devices physically prevents digital content consumption before sleep and upon waking, while creating space for the brain to consolidate information overnight (Stanley, 2024).



Stage 3: Cognitive Repair and Building Mental Resilience

Strengthening attention and focus skills is essential during the digital detox process. This lays the foundation for long-term mental well-being.

5.Mindfulness and "Boredom" Programming:

Practising mindfulness during the detox period (Park et al., 2019) can help individuals reconnect with themselves and increase their awareness of their surroundings. Taking 5-10 minute breaks during the day to simply sit or look out the window reactivates the brain's default functions (daydreaming, thinking) that have been eroded by brain rot.

6.Participation in Physical Activities and Social Support:

Incorporating physical activities into daily routines can provide alternative outlets for socialising and fulfilment. Offline hobbies, sports, and face-to-face interactions enrich the detox experience and promote holistic health. Furthermore, inviting friends or family to detox can increase motivation and a sense of responsibility. Encouraging healthy social interactions contributes to the overall effectiveness of the detox experience (Ho et al., 2019).

7.Monotasking and Transitioning to Non-Digital Consumption:

To repair weakened attention, training should focus solely on a single task, using various attention-gathering tools. This is seen as an important exercise in developing resistance to detailed, lengthy text by forcing the brain, accustomed to short, fast formats, to engage with non-digital content, such as reading a physical book or magazine (Krebs and Kuhn, 2025).

Considering these strategies, digital detox can be an effective way to reduce the mental strain caused by excessive digital interaction. By participating in digital detox programmes, individuals can regain cognitive resources, improve emotional well-being, and enhance interpersonal relationships. Implementing structured strategies that encourage conscious engagement with technology helps establish a healthier relationship with digital media and promotes a more balanced and fulfilling life in an increasingly digital world.

Dopamine Detox

Dopamine detox is a behavioural intervention designed to reduce the overstimulation of the brain's reward system. This intervention is particularly associated with activities that provide instant gratification, such as social media, video games, and excessive screen time. The primary goal of dopamine detox is to rewire the brain's reward pathways, enabling individuals to develop a more balanced relationship with stimulating activities and greater self-control over their impulses. This concept is based on the understanding that habitual exposure to rapid rewards can diminish the capacity to derive pleasure from more mundane, less stimulating activities (Stanley, 2024).

Excessive exposure to digital media and other sources of instant gratification can lead to increased anxiety, stress, and various mental health issues. Several studies (Cunningham et al., 2021) supporting this notion indicate that digital detox programmes can lead to improvements in the mental health of individuals experiencing mild to moderate depressive symptoms. Furthermore, it is necessary to implement specific actions to eliminate the negative effects of digital overstimulation on psychological and emotional health (Snider, 2025).

What Can Be Done to Implement Dopamine Detox?

The most fundamental step in dopamine detox is becoming aware of the behaviours that feed the addiction cycle. Activities such as social media use, online gaming, binge-watching series, or constantly checking notifications are the main sources that trigger the brain's reward system at short intervals. Identifying these behaviours allows one to understand which stimuli are directing mental energy. By recognising which activities have become compulsive, individuals can develop a conscious plan to limit these behaviours. Keeping a "trigger diary" during this process is a useful way to observe situations in which digital urges increase (Alamgir, 2022; Cardoso-Leite, 2021).

One of the most effective ways to restore dopamine balance is to systematically reduce the time spent on digital media. Rather than a sudden, complete cut-off, gradually reducing usage time provides a more sustainable and cognitively less stressful transition (Brevers and Turel, 2019). Daily or weekly digital windows can be set as targets. Limiting social media use to specific time slots only in the morning and evening is one habit that can support this process. Furthermore, planning weekends as full detox days can allow the brain to take a short break from the const

ant flow of dopamine. In this way, the individual learns to rebalance their reward expectations (Uncapher et al., 2017). However, one important point to note here is that it is as important to be aware of the nature of the replacement behaviours as it is to distance oneself from digital stimuli. Activities such as reading, nature walks, engaging in art, exercising, or pursuing a physical hobby stimulate the brain's dopamine cycle in a more balanced way. These activities create long-term internal pleasure

and a sense of achievement rather than instant gratification. Physical activity can increase dopamine receptor sensitivity, leading to improvements in mental clarity, energy, and self-control. Therefore, regularly engaging in non-digital activities can support the sustainability of dopamine detox (Mitten, 2018; Rosso et al., 2018).

Another way individuals can control their dopamine levels is through mindfulness practices. These practices enable individuals to recognise their urges to engage with digital content and make conscious choices rather than responding automatically. Practices such as meditation, deep breathing exercises, or journaling help reduce mental distraction by focusing the individual's attention on the present moment. Mindfulness contributes to strengthening executive functions (attention control, planning, decision-making). In this respect, mindfulness is a powerful tool in combating cognitive fatigue and emotional instability, which are key symptoms of brain rot (Hollingsworth and Redden, 2022). Measurement in behavioural change processes ensures the continuity of mindfulness. Recording the cognitive and emotional changes the individual experiences during detox makes progress visible. Setting daily or weekly goals (e.g., reducing time spent on social media by 30% or reading for 30 minutes every day) both increases internal motivation and provides a tangible sense of achievement. Furthermore, recording behavioural progress in writing feeds the brain's reward system through a sense of self-efficacy rather than external stimuli (Jimura et al., 2010; Teper and Inzlicht, 2013).

Rather than completely rejecting digital content after the detox period, consciously reintegrating it into life is seen as an important step in controlling digital technologies. The aim in this process is to focus on quality rather than quantity. For example, adopting preferences such as only seeking information on specific topics on social media and focusing on learning-oriented content rather than entertainment consumption allows individuals to benefit from the useful aspects of the digital world while maintaining cognitive balance. This process strengthens the individual's media literacy and self-regulation skills (Twenge, 2019; Zahrai et al., 2022). Furthermore, in addition to this controlled use, individuals' shift towards activities that provide long-term satisfaction rather than instant gratification can reduce the dopamine system's hypersensitivity. Cognitively challenging activities such as meditation, deep reading, creative writing, or complex problem-solving are important tools for balancing dopamine release. This is because when rewards are not immediately obtained, the brain's prefrontal cortex becomes more active, strengthening neural networks associated with self-control and patience. Thus, individuals can relearn the cognitive stability provided by long-term satisfaction instead of seeking quick rewards (Deserno, 2015).

One behaviour users frequently engage in when using digital tools is multitasking. Engaging in multiple tasks simultaneously in a digital environment (e.g., messaging while watching a video) can lead to micro-increases in dopamine levels, but it also reduces mental efficiency. Focusing on a single task, on the other hand, reduces cognitive load and deepens learning (May and Elder, 2018; Uncapher et al., 2017). As Carnes et al. (2015) point out, when attention is sustained on a single stimulus, the quality of information processing and memory consolidation increases. Therefore, in the digital detox process, focusing on a single task is one of the key steps to regaining mental clarity. Activities that encourage creativity and critical thinking, in particular, stimulate the dopamine cycle in a healthier

way . Activities such as writing, painting, participating in discussions, or learning a new skill activate the brain's prefrontal cortex and support long-term attention capacity. These types of activities increase an individual's mental resilience by counterbalancing the superficiality caused by the fast-paced consumption culture (Jimura et al., 2010). It is important to note that dopamine detox practices should be seen not only as a short-term mental refreshment tool but also as a process component that rebuilds cognitive flexibility and emotional balance in the long term. These practices encourage the brain's reward system to function more evenly, replacing behaviour cycles based on instant gratification with sustainable forms of motivation (Deserno et al., 2015). As the state of constant stimulation decreases, the individual's attention span increases, emotional reactivity decreases, and cognitive focus capacity increases. Long-term dopamine detoxification results in significant improvements, particularly in executive functions of the prefrontal cortex. This supports the strengthening of higher-level cognitive skills such as self-control, planning, and decision-making. This process also increases the individual's life satisfaction. This is because the emotional fluctuations associated with rapid dopamine fluctuations are replaced by a more stable internal balance (Perlmutter, 2020).

In the constantly stimulating environment of the digital age, dopamine detox is not a withdrawal but rather a regaining of mental control. When an individual regains the ability to direct their attention by choice, they can free themselves not only from digital addictions but also from superficial thinking and cognitive exhaustion. Thus, dopamine detox goes beyond reducing the effects of brain rot; it becomes a conscious life practice and a cornerstone of mental resilience. Dopamine detox and environmental control strategies can be considered an important step in breaking the cycle of brain rot and relieving the brain from neurological overload. However, this reset process alone is not sufficient to permanently establish mental resilience. This is because cognitive abilities such as deep reading, sustained concentration, and complex thinking, which we have not used for a long time due to brain rot, are now beginning to deteriorate. Regaining these abilities, increasing cognitive capacity, and regaining the ability to focus require structured exercises that strengthen new and healthy mental pathways.

Numerous mental exercises can be performed to increase focus duration and cognitive capacity. These exercises can be categorised as cognitive training, physical activity, and mindfulness or meditation techniques. In general, these exercises can improve the brain's executive function, attention, and working memory.

Cognitive Training Programmes

Cognitive training programmes are specifically designed to develop cognitive domains such as attention and working memory. According to Melby-Lervag and Hulme (2013), working memory training can be effective for individuals with attention deficit/hyperactivity disorder (ADHD). Furthermore, studies have shown that cognitive training programmes delivered through specially designed digital games can increase executive functions and processing speed in healthy young adults (Nouchi et al., 2013). Furthermore, computer-assisted cognitive rehabilitation has been shown to be effective in this process, with significant improvements in cognitive outcomes observed in individuals included in various clinical studies (Messinis et al., 2017; Hatami et al., 2021).

Physical Activities

It is known that regular physical exercise also supports increased focus and cognitive capacity. Exercise during young periods, such as adolescence, is known to significantly benefit attention and working memory (Liu et al., 2025). Furthermore, regular exercise provides significant cognitive benefits in memory and executive functions, particularly in healthy older adults (Zheng et al., 2020; Nouchi et al., 2013). Moreover, the concept of exercise games, which combine cognitive tasks with physical exercise, has emerged as an effective strategy for enhancing individuals' cognitive performance (Mantovani et al., 2024). Participating in activities such as daily walking or nature walks as part of exercise helps individuals refresh their minds by interacting with nature. These activities, which also pave the way for new cognitive discoveries, foster a problem-solving mindset by cultivating creative thinking through time spent in nature without social media (Hsieh, 2021). Exercises performed through nature walks strengthen individuals' mood and energy levels, expanding their capacity for creative and critical thinking (Hamamous and Benjelloun, 2023).

Mindfulness and Meditation

Mindfulness practices, particularly focused meditation exercises, can improve cognitive control and working memory. Short mindfulness breathing exercises, in particular, can increase working memory capacity. This aspect of mindfulness training has been shown to improve cognitive functions (Quek et al., 2021). Furthermore, in individuals with cognitive impairment, combining physical and mental activities to increase mindfulness has been shown to support cognitive processes such as concentration (Xu et al., 2023). Regular mindfulness practice creates an environment conducive to creative discovery by enabling individuals to understand their thoughts and feelings more deeply (Marsh et al., 2018).

In conclusion, cognitive training, physical activity, and mindfulness-based mental exercises can significantly increase concentration span and expand cognitive capacity. In addition, individuals need to prioritise creativity to protect themselves against the effects of Brain Rot and become more resilient to this process. Incorporating non-digital activities into daily life is important in this regard, as it encourages creativity and critical thinking. For example, participating in artistic activities such as painting, drawing, and crafts can significantly develop creative thinking. These activities enable individuals to express their emotions and ideas in new ways. In fact, participating in applied art projects can develop cognitive flexibility and innovation (Baird et al., 2012). Furthermore, studio environments where individuals can experiment with materials and techniques often lead to deeper critical reflection on their work, thereby developing both creativity and critical thinking skills (Clemente-Suarez et al., 2024).

Individuals experiencing brain rot may experience a significant decline in creativity due to exhaustion from consuming others' social media content. Activities such as writing, which can be preferred to social media content, particularly for developing creativity, can help delay or eliminate these consequences of brain rot. This is because reflective writing prompts individuals to deeply analyse their experiences, thoughts, and feelings, thereby enhancing cognitive processing and creative engagement (Le, 2023). When narrative writing is combined with peer feedback sessions, it

enables the collective discovery of ideas and the synthesis of diverse perspectives, further enriching critical analysis (Buxton et al., 2022). Individuals' participation in collective learning environments involving teams can support collaborative reflective thinking. Activities such as group discussions and collaborative problem-solving projects encourage individuals to share knowledge and develop solutions collectively. Groups often benefit from different perspectives, leading to innovative outcomes. This is because collaborative work not only fosters creativity but also develops critical thinking by challenging individuals to defend their ideas and consider different perspectives (Chang and Min, 2024).

Digital Detox

While digital detox strategies and dopamine detox free the brain from instant dopamine addiction and reset the cognitive system, lasting mental health and cognitive functioning require establishing a Healthy Digital Diet. A digital diet is a fundamental framework comprising strategies and practices for managing technology and online interactions. This diet focuses on quality over quantity, providing protection against excessive screen time that can lead to cognitive overload and reduced attention span (Schmuck, 2020). The main principles of this diet include Mindful Consumption (avoiding sensational content and choosing high-quality, reliable sources), setting limits on Balanced Screen Time, and limiting exposure to negative emotional content to protect mental health (Green et al., 2022). Particularly on social media, individuals can counterbalance the negative mental environment fostered by brain rot by curating their feeds to include uplifting or educational content and engaging in meaningful interactions rather than passive viewing (Pourarian et al., 2025). Furthermore, incorporating non-digital activities such as physical exercise, art, or nature walks into daily routines to enhance cognitive flexibility and creativity (Arora, 2024) is vital. Regular intermittent detoxes (Green et al., 2022) help restore mental clarity and prevent burnout, enabling individuals to maintain a conscious relationship with digital devices. This holistic approach continuously supports mental health and cognitive functions by ensuring that cognitive inputs are deliberately selected.

In the digital age, creating a healthy mental diet means consciously organising our cognitive environment and adopting practices that support mental health, increase focus, and encourage creativity. The fundamental principles that guide the creation of this mental diet are as follows:

Limiting Digital Overload

The first principle is to recognise and reduce digital overload. Constant exposure to digital stimuli can lead to cognitive fatigue and reduced attention span (Green et al., 2022). Research shows that excessive screen time and constant notifications can impair cognitive performance and mental health (Schmuck, 2020). To counteract this, individuals should set clear boundaries for digital media consumption, such as limiting social media use and optimising notification settings. Implementing digital detox periods, during which users stay away from digital devices, can also promote mental clarity and health (Brevers and Turel, 2019).

Purposeful Consumption

Another important principle in an individual's digital diet is the purposeful consumption of information. In an age of abundant information, selectively engaging with high-quality, relevant content can improve cognitive processes. Actively selecting reliable sources encourages conscious decision-making. This has been shown to develop critical thinking skills, particularly in the context of new information (Pandey, 2018). Furthermore, attempting to consume different perspectives also encourages critical thinking (Pourarian et al., 2025).

Participating in Active Learning

Participating in active learning is crucial for cognitive development. Tasks requiring active participation, such as problem-solving, discussions, or memory exercises, can enhance cognitive abilities by encouraging higher-order thinking. Techniques such as deliberate practice in specific areas of interest or knowledge can lead to deeper understanding and better retention of information. Furthermore, integrating real-world applications or projects can significantly enhance learning outcomes (Chae and Park, 2023).

Incorporating Physical Activity

Regular physical activity contributes to cognitive function and mental health. Physical exercise improves mood, increases cognitive flexibility, and develops problem-solving skills. Including activities such as walking, running, or group sports not only helps reduce stress but also encourages sociocultural interactions that contribute to a balanced mental state (Liu et al., 2025; Hamamous and Benjelloun, 2023). In addition to physical exercise, incorporating activities such as arts and crafts or nature walks into daily routines can increase cognitive flexibility and creativity and counterbalance the potentially overwhelming effects of digital consumption (Arora, 2024).

Strengthening Social Connections

Building and maintaining social connections plays a crucial role in emotional resilience and overall cognitive health. Engaging in meaningful conversations or collaborative projects with peers can boost creativity by encouraging new ideas and perspectives. Social interactions serve as important mental exercises that keep cognitive skills sharp and highlight the value of communities that support and encourage individual development.

Mindful Consumption

Individuals should take care to avoid sensational or distracting content and select high-quality, reliable sources of information. Purposeful engagement with diverse media encourages conscious decision-making and supports critical thinking. Limiting exposure to negative or emotional content significantly improves mental health (Green et al., 2022).

Balanced Screen Time

Setting limits on screen time is crucial. Research shows that excessive screen exposure can lead to cognitive overload and reduce attention span. Implementing specific limits during the day or planning device-free times can increase focus and creativity (Schmuck, 2020).

Social Media Management

Developing a healthy relationship with social media platforms requires curating one's feed to include only uplifting or educational content, which creates a more positive mental environment. Engaging in meaningful interactions rather than passive consumption can also increase overall participation and engagement (Pourarian et al., 2025).

Using a Mental Filter

In the digital age, where excessive information competes for our attention, it is crucial to become our own mental "filter" and adopt a selective approach to information. This task requires the development of critical thinking skills, digital literacy, and self-awareness. Several strategies, supported by relevant research, can help individuals effectively filter the information they encounter:

1. Developing Digital Literacy

Digital literacy encompasses the skills necessary to navigate and evaluate the vast world of online information. It includes the ability to critically analyse sources, distinguish reliable information from misinformation, and synthesise information effectively. Developing digital literacy is vital for individuals to avoid misinformation and other online challenges (Guess and Munger, 2022). Educational interventions aimed at developing these literacy skills empower individuals, particularly adolescents, enabling them to critically analyse levels of meaning and relevance and gain greater control over various health determinants through the use of information (Taba et al., 2022).

2. Developing Critical Thinking Skills

Critical thinking is essential for effectively filtering information. It is important to develop critical thinking skills from an early age to enable individuals to navigate online environments and recognise potential biases and threats (Diehl et al., 2024). Participating in exercises that encourage analytical thinking, such as debates, negotiations, or problem-solving activities, helps strengthen the ability to assess the reliability and relevance of information (Indah et al., 2022). It is also important to systematically evaluate information through thoughtful questioning and reflection. These practices develop an individual's ability to distinguish valuable insights from unnecessary noise (Ninghardjanti and Dirgatama, 2021).

3. Practising Mindful Consumption

Incorporating mindfulness into how we consume digital content can significantly enhance our filtering abilities. Mindful consumption involves being present while interacting with information and considering how it aligns with one's values and beliefs. In fact, being mindful in processing digital information is important. By pausing for a moment before reacting and considering the source, purpose, and potential impact of the information, individuals can become more mindful in their interactions (Tynnyi, 2021).

4. Establishing Personal Criteria for Evaluating Information

Individuals can create a personal framework or a list of criteria to evaluate the information they encounter. Key elements may include the reliability of the source, the presence of evidence supporting the claims, the author's potential biases, and the relevance to the individual's interests or needs. This

process demonstrates the necessity of developing digital literacy and critical thinking skills, which are crucial for examining and critically evaluating digital content. Having a structured approach helps in making quick decisions about which information is worth further investigation or dismissal (Maltby et al., 2024).

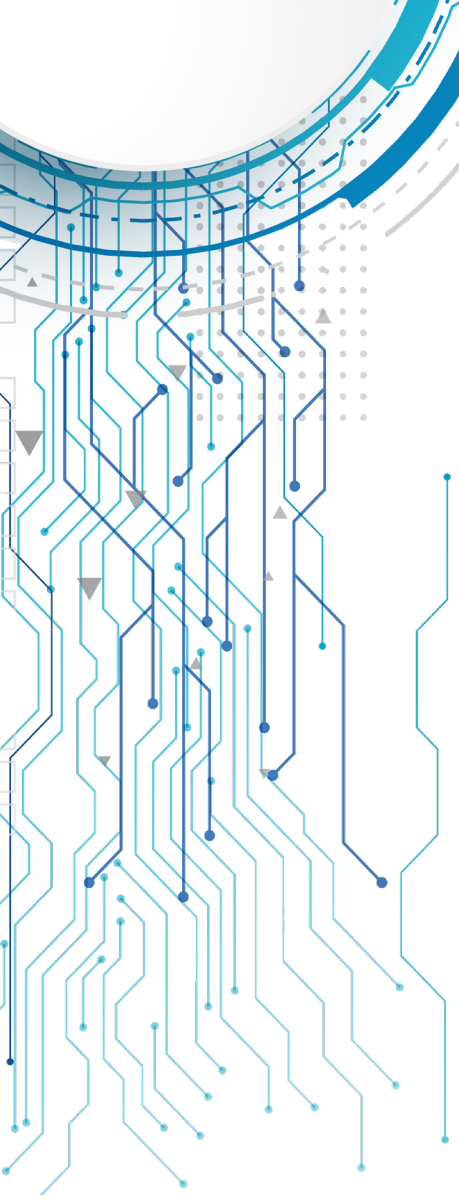
5. Utilising Different Perspectives

To develop a multifaceted approach to information filtering, it is beneficial to draw on diverse perspectives and ideas. Exposure to different viewpoints develops cognitive flexibility and encourages critical analysis of one's beliefs. Exposure to and utilisation of multiple perspectives can enhance one's analytical skills and help identify biases in information. Participating in discussions, forums, or communities that challenge one's assumptions can enrich understanding and develop the ability to filter information wisely (Chen, 2025).

6. Using Technology Carefully

Modern technology offers tools and applications that can help filter information. For example, using information aggregators that organise content according to personal interests can minimise exposure to unnecessary distractions. Tools that flag or identify biased news sources can also help decide which information to engage with. However, individuals should be mindful of their digital footprint and carefully consider how technology shapes their interactions with information (Rusydiyah et al., 2020).

Acting as our own mental filter and adopting a selective approach to information is a multifaceted process that requires developing digital literacy, critical thinking, conscious consumption, and using supportive tools. By actively engaging in the strategies outlined above, individuals can build a more robust cognitive framework that enables them to navigate the complexity of the information environment effectively. This not only enhances individual decision-making but also contributes to a more informed and discerning society



CHAPTER 2

What Influences Brain Rot in Young People?

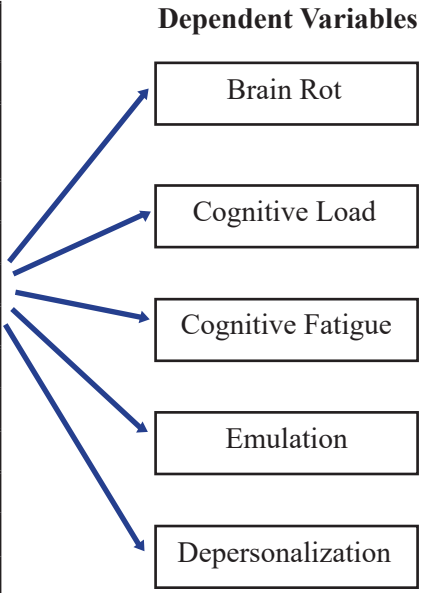
This section explains how demographic variables and variables related to internet and social media use affect brain ageing in young people. The research conducted in this regard describes how 14 variables affect brain rot and its dimensions: cognitive load, cognitive fatigue, emulation, and depersonalization.

Method

This section presents the necessary information about the study's structure, describing how 14 variables affect brain rot in young people. The model, population, and sample of this research, as well as the statistical methods used to evaluate the data collected with data collection tools, are explained.

Table 2. Research variables

Independent variables
1. Time spent using social media applications during the day
2. Frequency of social media use during time spent with family or friends
3. Time of day when social media is used most frequently
4. Age at which first joined a social media platform
5. Age at which they first obtained a smartphone
6. Most frequently used social media application
7. Monthly data allowance on their smartphone
8. Type of educational institution attended
9. Grade level
10. University entrance exam score type
11. Age range
12. Gender
13. Father's educational level
14. Mother's educational level



This study, designed according to the causal comparison model, investigated the extent to which 14 variables specific to young people affect brain rot and how these variables differ. The causal comparison model aims to understand the causes and consequences of a variable (e.g., an event, situation, or problem). Within this model, at least two groups are compared in studies to describe the causes of a specific outcome (Büyüköztürk et al., 2013). For this purpose, in studies designed according to the causal-comparison model, the groups to be examined are first determined based on the research problem. In this study, categorical variables such as the age at which young people first obtained a mobile phone, their mother's level of education, gender, age range, etc., which could affect brain rot in young people, were determined. Subsequently, brain rot in young people was examined with respect to differences across these categorical variables.

The independent variables of the study are shown in Table 2. These variables are: the amount of time spent using social media applications during the day, which are thought to affect brain rot in young people; the frequency of social media use during time spent with family or friends; the time of day when social media is used most; the age at which they first joined a social media platform; the age at which they first acquired a smartphone; the most frequently used social media application; the monthly GB allowance of the internet package on their smartphone, the type of institution they attend, their grade level, their university entrance exam score type, age range, gender, and their father's and mother's education levels. The dependent variable of the study is brain rot in young people and its sub-dimensions: cognitive load, cognitive fatigue, emulation, and depersonalization..

Population and Sample

The study population consists of approximately 12,747,023 individuals enrolled at universities and K12-level secondary education institutions in Turkey. To ensure the quantitative representativeness of young people in the universe, the necessary calculations were performed using Cohen's (2013) power analysis to determine the sample size. A 95% confidence interval ($\alpha = 0.05$) and 80% statistical power ($1-\beta = 0.80$) were used to determine the sample size. The effect size was assumed to be medium ($\delta = 0.8$). These parameters are commonly used values in the literature based on Cohen's standard power analysis method (Cohen, 2013; Cohen et al., 2007; Guenter et al., 2023; Natarajan et al., 2022). Considering the research population and the parameters determined by Cohen (2013), it was decided that the required sample size should be at least 1066 individuals.

A multistage sampling method was used to select the study sample. First, stratified sampling was used to ensure that the subgroups in the population were fully represented in the sample. For this purpose, the Turkish population was divided into seven strata based on geographical regions. Subsequently, the provinces in which the application would be carried out were selected at random within each region. Clusters were determined from those provinces based on universities and secondary education. Individuals were included in the sample using simple random sampling from the determined clusters. Some demographic variables related to the sample are presented in the tables below.

Table 3. Demographic Characteristics of the Sample

Size	Subcategory	f	%
Gender	Female	765	47,786
	Male	836	52,214
Class	9th Grade	262	16.36
	10th Grade	256	15.99
	11th Grade	203	12.67
	Year 12	211	13.17
	University 1st Year	116	7.24
	University 2nd Year	172	10.74
	University 3rd Year	180	11.24
	University 4th Year	201	12.55
Age	14-16 years old	555	34.66
	17-19 years old	471	29.41
	20-22 years old	272	16.98
	23 years and older	303	18.92

47.8% of the participants were female (n=765) and 52.2% were male (n=836), indicating a balanced gender distribution in the sample. Regarding educational level, the majority of participants were high school students. Students in Year 9 (16.36%), Year 10 (15.99%), Year 11 (12.67%) and Year 12 (13.17%) comprised approximately 58% of the sample. At the university level, the participation rate is around 42%; within this group, the highest rate is among 4th-year students at 12.55%, while the lowest is among 1st-year students at 7.24%. When examining the age distribution, those aged 14-16 have the largest share at 34.66%; this is followed by the 17-19 age group at 29.41%, the 20-22 age group at 16.98%, and individuals aged 23 and above at 18.92%.

Data Collection Tool

Two types of data collection tools were used in the research process. One was the General Situation Questionnaire, and the other was the Brain Rot Scale.

Survey on Variables Affecting Brain Rot

The "Survey on Variables Affecting Brain Rot" was developed to collect data on factors that may contribute to brain rot in young people. During this process, the relevant literature in psychology and neurology was reviewed to identify the basic parameters thought to influence brain ageing in young people. To obtain valid and reliable data on these parameters, behaviours affecting young people's use of the internet and social media were identified, and questionnaire items appropriate to these behaviours were prepared. The prepared questions were combined with the instructions and demographic information section to create a "draft survey form". To evaluate the draft form on scope, content, structure, applicability, and content validity, opinions were sought from three experts who have conducted studies in the fields of psychology of religion and

developmental psychology. The experts rated each item in the questionnaire as "1=not appropriate", "2=needs significant revision", "3=needs minor revision", "4=very appropriate". The agreement between the experts' evaluations was analysed using Kendall's Concordance Coefficient (Kendall's W). The analysis revealed no statistically significant difference between the experts' opinions (Kendall's W = .219, p = .152). In addition, two language experts reviewed the draft form for language, expression, and wording, and necessary revisions were made based on their suggested corrections.

Brain Rot Scale

The Brain Rot Scale was developed by Yılmaz and Aktürk (2025). The Brain Rot Scale consists of 18 items across four subscales. The Brain Rot Scale is a 5-point Likert-type measure. The cognitive load factor of the four-factor brain rot scale ranges from 5 to 25 points. The cognitive fatigue factor can range from 6 to 30 points. The lowest score possible on the emulation dimension is 4, and the highest is 20; on the depersonalization factor, the lowest is 3, and the highest is 15. Considering the scale as a whole, the lowest possible score is 18, and the highest is 90. Yılmaz and Aktürk (2025) established the construct validity of the scale through AFA and DFA analyses. McDonald's Omega (ω) and Cronbach's Alpha (α) coefficients were calculated to evaluate the internal consistency level of the scale. The analyses revealed that Cronbach's Alpha and McDonald's Omega coefficients were above 0.70 for all subscales and the total scale.

Data Analysis Method

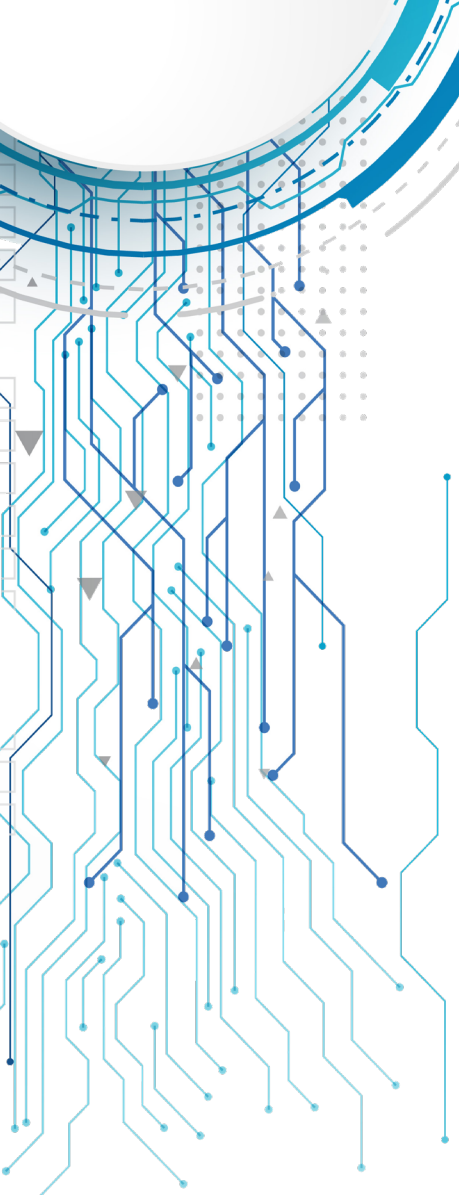
The data collected within the scope of the research were first examined for outliers using Z scores. According to Tabachnick and Fidell (2007), unidirectional outliers in research data can be identified using Z scores. The Z values for the scale and sub-dimension scores in the research data were examined. As a result of these examinations, 34 data points with Z values outside the range of -3 to +3 were excluded from the analyses. The normality assumptions for the data set used in the analyses were assessed using skewness and kurtosis.

Table 4. Normality Values of Research Data

Scales	Sub-dimensions	Skewness Coefficient	Kernel Coefficient
Brain Rot	Cognitive Load	.433	-.333
	Cognitive Fatigue	.080	-.384
	Emulation	-.053	-.348
	Depersonalization	.757	.879
	Brain Rot	.213	.002

The normality assumptions of the data set collected regarding the Brain Rot Scale for young people were tested using skewness and kurtosis coefficients (Table x). The skewness and kurtosis coefficients for the dimensions of the Brain Rot Scale ranged from -0.384 to 0.879. According to George and Mallery (2016), for the normality assumptions of the dataset to be met, skewness and kurtosis values should be between -2 and +2. Within the scope of the research, when the skewness

and kurtosis coefficients of the Brain Rot Scale scores were within these values, it was assumed that the scores met the normal distribution assumptions of the data set. For this reason, the analyses were performed using parametric tests. In the comparison between groups, the “independent t-test” was used for two groups and “Analysis of Variance (ANOVA)” was used for three or more groups. The homogeneity of the groups was tested using the Levene test. To identify the source of differentiation in the dimensions where differentiation emerged as a result of the ANOVA test, Tukey’s test was used if the variances were equal, and Tamhane’s T2 was used if they were not equal. Effect sizes for the analyses in the study were calculated using eta-squared. A significance level of $p<.05$ was accepted in the study.



CHAPTER 3

RESEARCH FINDINGS

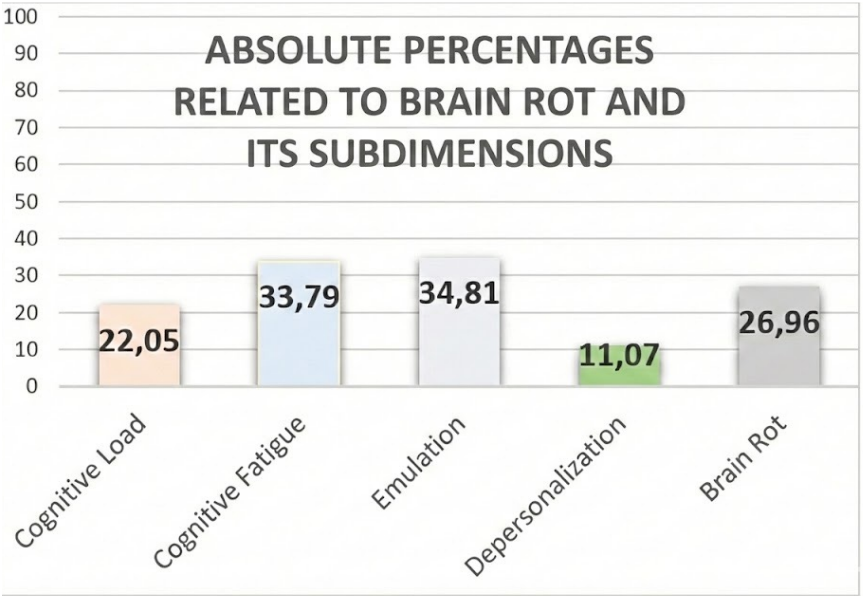
Research Findings

This study examines the brain rot scale across four subscales (Cognitive Load, Cognitive Fatigue, Emulation, and Depersonalization).

Table 5. Participants' mean scale scores for brain rot and its subscales

Scale and sub-dimensions	Arithmetic Mean
Cognitive Load	2.28
Cognitive Fatigue	2.72
Emulation	2.78
Depersonalization	1.66
Brain Rot	2.43

When examined in terms of scale sub-dimensions, the area where young people experience the most brain rot is Emulation (=2.78), while the area where they experience the least brain rot is Depersonalization (=1.66).



Graph 1. Absolute Percentage of Brain Rot and Its Subdimensions

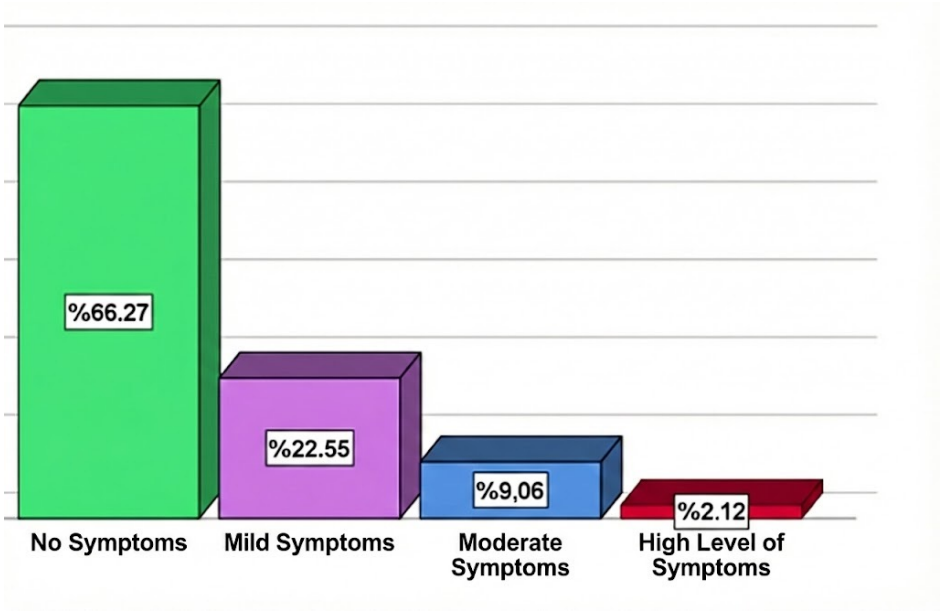
Approximately 22% of the young people in the research group exhibit variability in the cognitive load sub-dimension of brain rot. Young people exhibit approximately 34% variability in cognitive fatigue and approximately 11% variability in depersonalization. In terms of sub-dimensions, emulation shows the highest variability, at approximately 35%. In terms of scale scores, young people generally exhibit approximately 27% variability in brain rot.

1-2=No signs of brain rot

3. Some brain rot symptoms

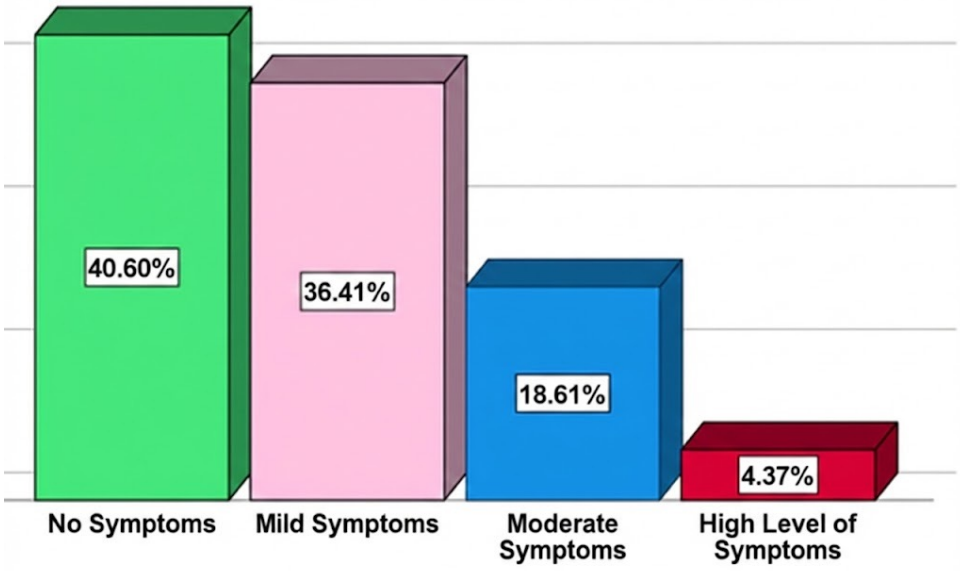
4=Presents symptoms of brain rot

5=Highly exhibits symptoms of brain rot



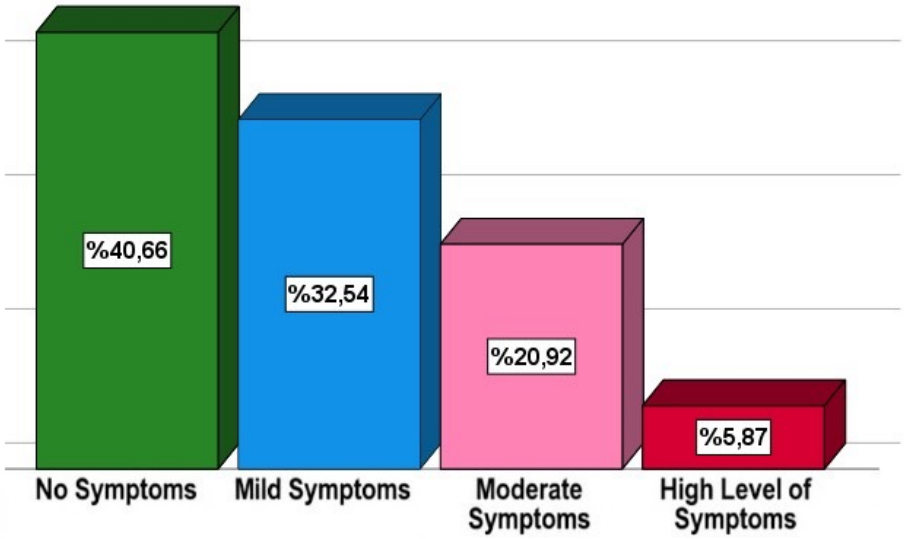
Graph 2. Prevalence of symptoms related to the cognitive load sub-dimension of brain rot

Approximately 66% of the young people in the research group reported no symptoms related to the cognitive load sub-dimension of brain rot, while approximately 34% reported symptoms in this area. The percentage of young people with the highest level of these symptoms is 2.12%.



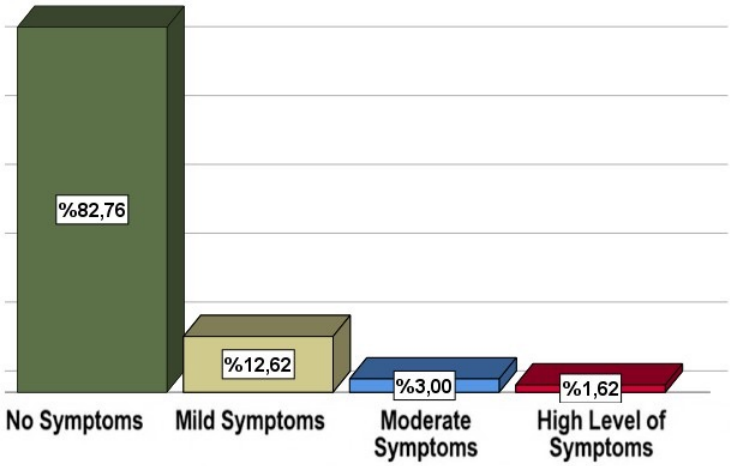
Graph 3. Prevalence of symptoms related to the cognitive fatigue sub-dimension of brain rot

When examining rates of young people experiencing variability in the cognitive fatigue sub-dimension of brain rot, approximately 41% had no cognitive fatigue symptoms. Approximately 59% had symptoms of cognitive fatigue at varying levels, with 4.37% experiencing high levels.



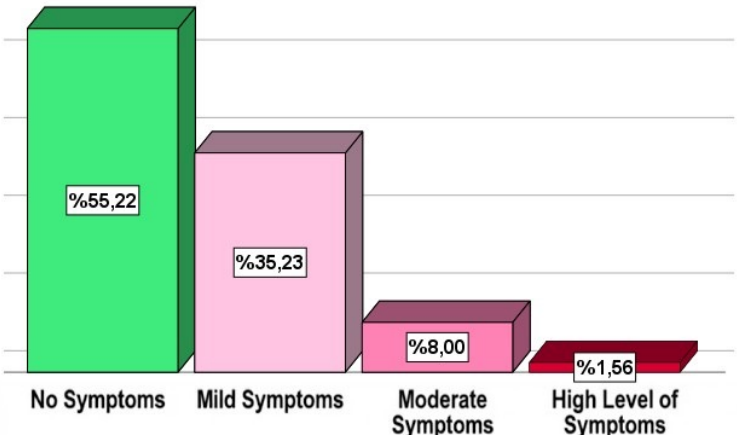
Graph 4. Prevalence of Symptoms Related to the Mimicry Subdimension of Brain Rot

Among young people, approximately 41% do not exhibit emulation symptoms associated with brain rot. In this sub-dimension, 49% of young people exhibit emulation symptoms, while approximately 6% exhibit them at a high level.



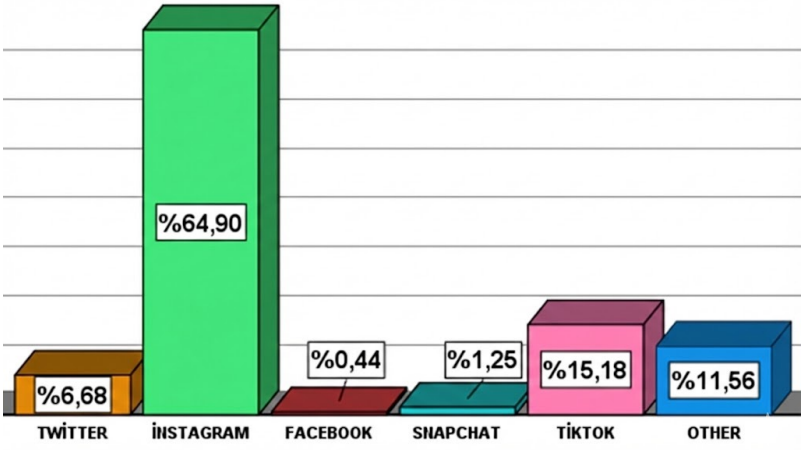
Graph 5. Symptom Rate Related to the Depersonalization Sub-Dimension of Brain Rot

Approximately 83% of young people in the research group do not have symptoms related to the depersonalization dimension of brain rot. The remaining approximately 17% of young people have symptoms related to brain rot. 1.62% of young people have a high level of symptoms in the depersonalization sub-dimension of brain rot.



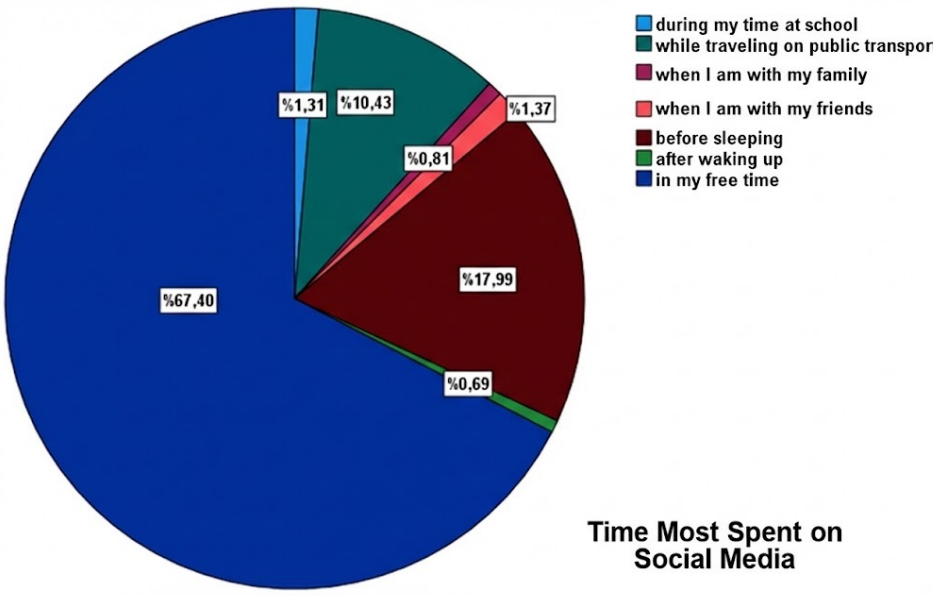
Graph 6. Rates of Having Symptoms Related to Brain Rot

Approximately 55% of young people in the research group do not exhibit symptoms related to brain rot. Approximately 45% of young people exhibit symptoms related to brain rot. While approximately 35% of young people exhibit these symptoms to a slight degree, 8% to a moderate degree, and 1.56% to a high degree.



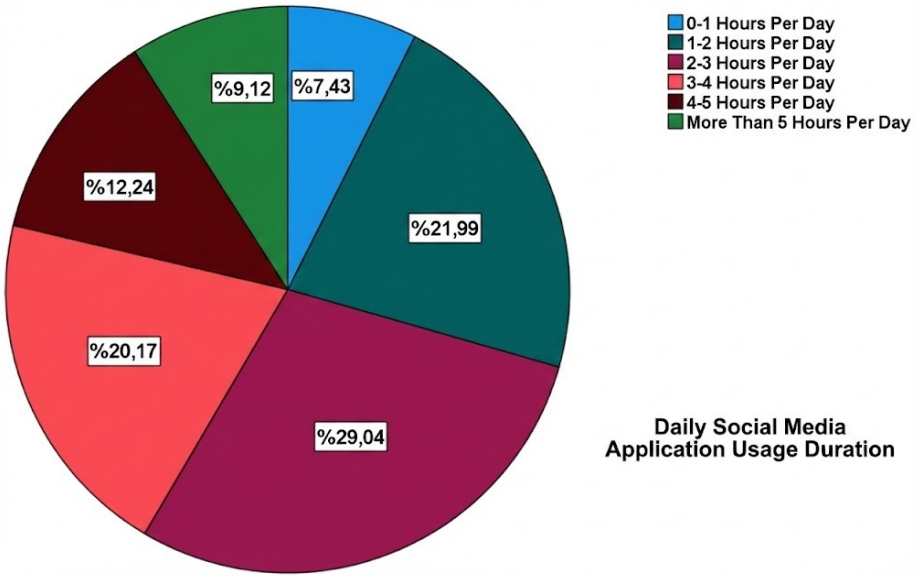
Graph 7. Most Frequently Used Social Media Platforms

According to the graph, the most preferred social media platform among participants is Instagram, with a user rate of 64.90%. This finding shows that the vast majority of the sample is oriented toward visual-sharing and interaction platforms. TikTok ranks second and stands out with a 15.18% share, reflecting the growing popularity of short-form video content, particularly among young users. In contrast, Twitter (6.68%), Other platforms (11.56%), Snapchat (1.25%), and Facebook (0.44%) are used at relatively low rates. Facebook's particularly low usage rate indicates that the platform has largely lost its influence among young users. This situation creates a similar picture across different cultures. According to Gottfriend and Park's (2025) study, the social media platforms most preferred by young Americans are Instagram and TikTok. Data from the Turkish Statistical Institute (TÜİK, 2025) also confirms this situation. According to this data, household social media usage in Turkey shows that Instagram is the most widely used application.



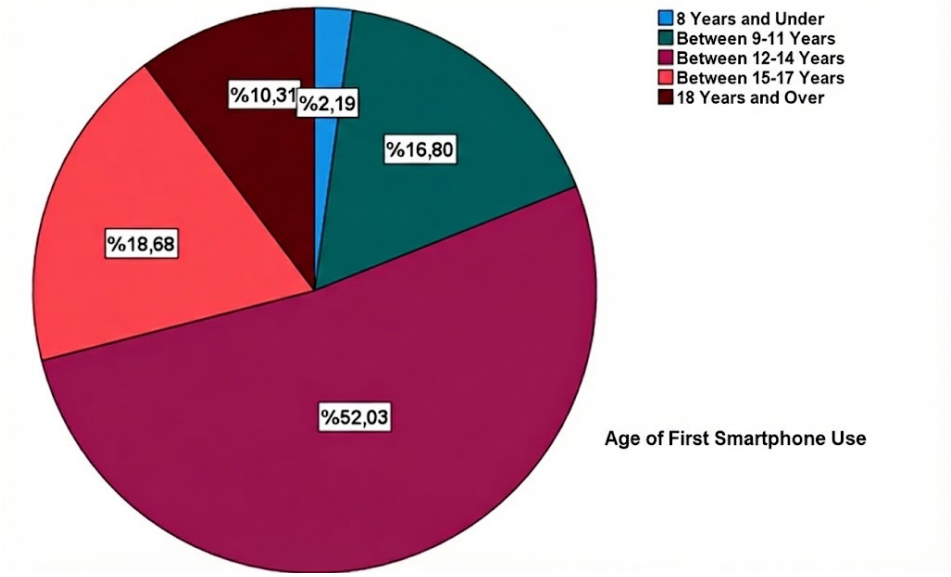
Graph 8. The Time Period When Social Media Is Most Used

Graph 8 shows the time periods during which participants use social media the most. According to the data, the vast majority of participants (67.40%) use social media in their free time. This finding reveals that social media use primarily serves as a means of leisure and entertainment. The fact that social media use before bedtime (17.99%) ranks second indicates that it has become part of individuals' end-of-day routine. When other time periods are examined, it is seen that social media usage rates are relatively low after waking up (10.69%) and while travelling on public transport (1.31%). The fact that social media usage is quite limited during time spent with family (0.81%) and friends (0.43%) shows that individuals engage with social media more during their personal time.



Graph 9. Daily Social Media Application Usage Time

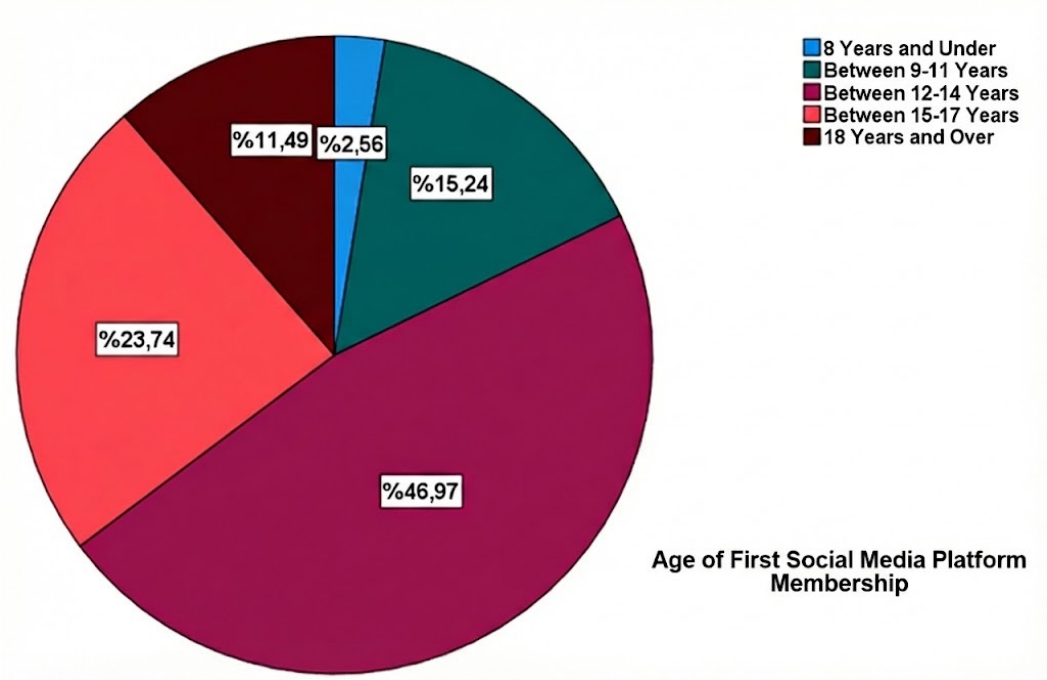
Graph 9 shows the distribution of participants' daily time spent on social media applications. According to the data, the highest percentage of participants uses social media for 2–3 hours per day (29.04%). This is followed by usage periods of 1–2 hours per day (21.99%) and 3–4 hours per day (20.17%). These percentages indicate that the majority of the sample spends 1-4 hours per day on social media. In contrast, usage rates of 4–5 hours per day (12.24%) and more than 5 hours per day (9.12%) represent users who may constitute a risk group in terms of social media addiction. The low usage rate of 0–1 hours per day (7.43%) indicates that individuals who avoid social media are in the minority. Various statistics on social media usage also reveal a similar situation. According to Saini (2025), the average time spent on social media worldwide is approximately 2 hours and 31 minutes. For users within Turkey, this time is calculated as 2 hours and 43 minutes (TİSK, 2025). Anderson et al. (2024) state that this time is between 4 and 5 hours for adolescents and young adults.



Graph 10. Age of First Smartphone Use

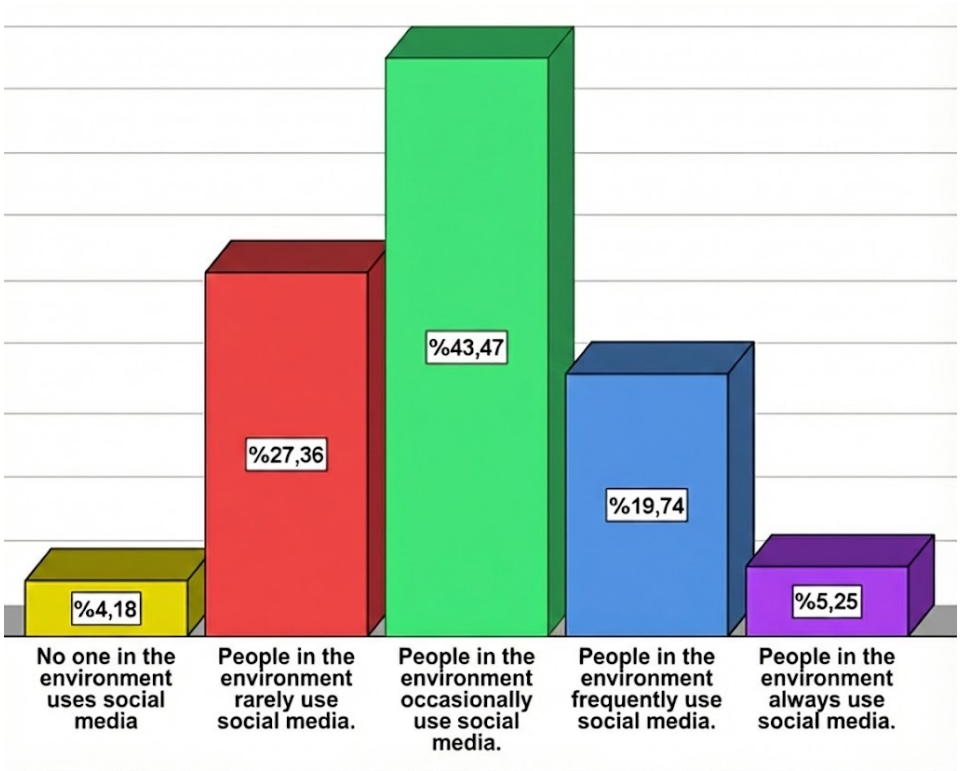
The most dominant finding in Figure 10 is that the vast majority of participants (52.03%) started using their first smartphone between the ages of 12 and 14. This percentage represents more than half of the sample and shows that the acquisition of the first smartphone largely coincides with secondary school (or the early stages of adolescence). The second largest segment, with a rate of 18.68%, is the 15-17 age group. This indicates the existence of a significant segment that transitioned to smartphones during high school. Close to this rate (16.80%) is the 9-11 age group (late primary school). 10.31% of participants began using their first smartphone at age 18 or older (during adulthood). The lowest frequency in the sample belongs to the 8 years and under group, at 2.19%. This finding shows that starting to use a personal smartphone in very early childhood (under 8 years old) is a relatively rare occurrence in this population. The community in which individuals under 18 live, family structure, and socio-economic factors can play a significant role in smartphone use. According to the OECD (2025) report, the rate of technological device ownership among children under 15 with high socioeconomic status is 96%, while among those with low socioeconomic

status, it is less than 27%. However, according to Musto (2025), 60% of parents reported that their children began using phones at ages 11-12. According to Barzilay et al. (2025), the age group with the highest rate of first smartphone use is 12 years old. However, children who start using smartphones at an early age can face fundamental problems at the mental, physical, and psychological levels.



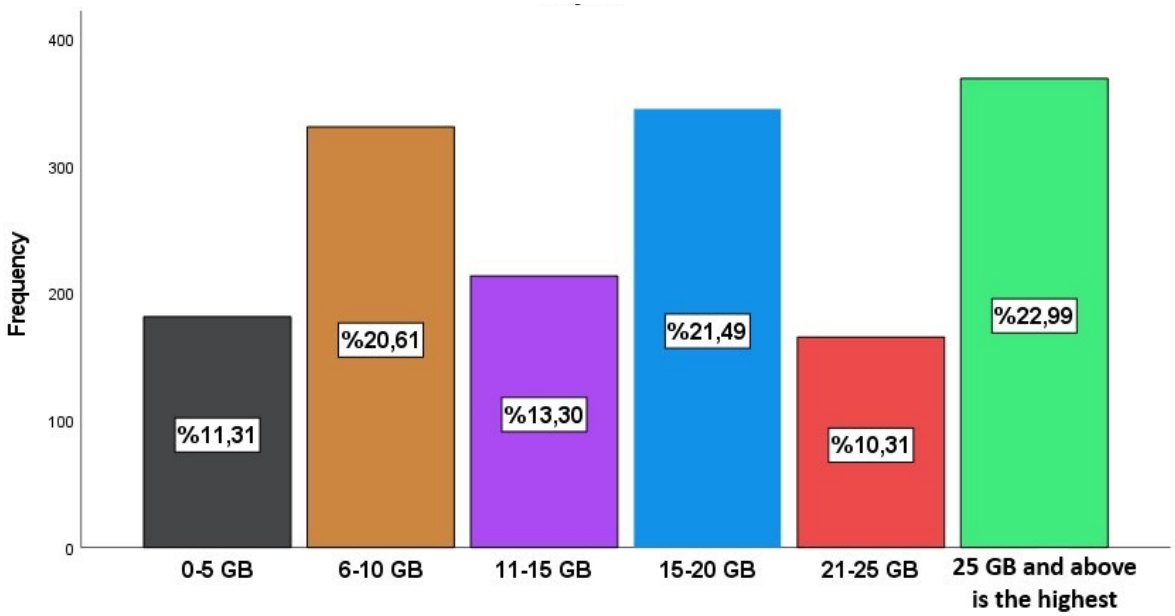
Graph 11. Age Distribution of First Social Media Platform Membership

The most striking finding of the graph is that 46.97% of participants, i.e. almost half, first joined social media between the ages of 12 and 14 (early adolescence or secondary school age). This reveals that the central tendency for joining social media in the population studied is in this age group. The second-largest segment, at 23.74%, belongs to the 15-17 age group (mid-adolescence or the high school period). This finding shows that participation in social media continues at a high frequency during high school years. 15.24% of participants joined social media between the ages of 9 and 11 (pre-adolescence/late primary school). This indicates that social media use begins at a significant rate even before early adolescence. 11.49% of participants created their first accounts at age 18 or older (adulthood). This segment represents a minority group within the population that adapts to social media later. The lowest rate in the sample (2.56%) belongs to the 8 years and under group. This indicates that social media membership in early childhood, below the legal age limit (usually 13), is statistically rare. These findings on young individuals' social media usage show characteristics similar to those of age-of-use effects emerging across different geographies and cultures. Koch et al. (2025) also found that the average age of social media participation is 13. Similarly, Dennen and Bagdy (2022) stated that the age of first social media use is 12.5 years old. BEE SECURE (2024) and Thiagarajan et al. (2025) also reached similar findings, stating that the age of first social media use is 13.



Graph 12. Social Media Usage During Time Spent with Family and Friends

The lowest rate (4.18%) corresponds to situations where no one in the environment uses social media. This indicates that situations where digital tools are completely excluded from social gatherings are quite rare. Situations where individuals in the environment rarely use social media rank second at 27.36%, suggesting that a significant proportion of participants limit their social media use during social interactions. The highest rate (43.47%) belongs to the "occasional" usage category. This finding suggests that social media use is common in social settings, but it is mostly intermittent and likely does not completely disrupt the social dynamics of the environment. "Frequent" use was reported at 19.74%, indicating that 1 in 5 people use social media frequently during social gatherings. The category with the highest frequency of use, "always," has the second lowest rate at 5.25%. This indicates that the tendency to be constantly digitally connected in social settings is relatively low. While this general trend shows that social media is widely integrated into social interaction settings, it also suggests that its use can vary in frequency and intensity. Indeed, the findings of this study reveal that social media use is widespread in social settings, but mostly occurs intermittently and in a controlled manner. In this context, it can be said that social media is positioned as a secondary activity that accompanies social interaction rather than a tool that completely replaces it. The use of social media is widespread during time spent together with family and friends. Studies conducted in Turkey report that approximately two-thirds of children use phones and social media even in the family environment (TÜİK, 2023). Similarly, it has been determined that 58% of children in OECD countries actively use screens while with their families (OECD, 2024). This rate is even higher among friends; more than 70% of adolescents actively use social media during face-to-face social interactions (Pew Research Centre, 2024; Ofcom, 2024).



Graph 13. Monthly Internet Package Usage on Smartphones

According to the graph, among young people, the highest rates are for monthly smartphone internet packages of 15 GB or more. In particular, the proportion of young people using 25 GB and above is the highest at 22.99%. 21.49% of young people in the research group have an internet package in the 15–20 GB range. The proportion of young people with an internet package in the 6–10 GB range is 20.61%. The proportion of young people with an internet package in the 11–15 GB range is 13.30%. The proportion of young people with internet packages in the 0–5 GB range is 11.31%. The proportion of young people with internet packages in the 21–25 GB range is 10.31%. These findings regarding monthly internet package usage show that digital life is deeply integrated into individuals' daily routines. The fact that fixed internet usage in Turkey exceeds 300 GB per month highlights the intensity of home-based digital activities (series, films, online games, distance learning), while mobile internet usage reaching the 18–21 GB range (Ericsson Mobility Report, 2025) shows that individuals can be online at any time of the day. This situation creates a foundation that could lead to significant psychosocial consequences in terms of social media usage frequency, digital addiction, attention deficit, and social relationships.

Table 6. Findings from the t-test comparison of brain rot and subscale scores according to gender

Brain Rot Dimensions	Gender	N	$\overline{X}$	ss	Levene's Test (F; p)	t	η2
Cognitive Load	Male	765	2.17	.85	.609; p>.05	-3.371**	.005
	Female	836	2.33	.87			
Cognitive Fatigue	Male	765	2.62	.80	.855; p>.05	-3.226**	.005
	Female	836	2.77	.83			
Emulation	Male	765	2.66	.84	1.241; p>.05	-3.722**	.007
	Female	836	2.84	.87			
Depersonalization	Male	765	1.64	.68	.034; p>.05	-,741	-
	Female	836	1.67	.68			
Brain Rot	Male	765	2.34	.64	,648; p>.05	-3.761**	.006
	Female	836	2.48	.67			

(**: p<.01; *: p<.05)

"Brain Rot in women is higher than in men"

The significance of the difference in mean scale scores for brain rot and its subdimensions, according to the gender variable, within the research group, was determined using an independent t-test. The analyses revealed that the mean scale scores for brain rot and its cognitive load, cognitive fatigue, and emulation subdimensions were significantly higher in young women than in young men (p<.01). There was no significant difference in the mean scale scores for the depersonalization sub-dimension of brain rot according to the gender of the young people (p > .05). The effect size of the gender variable on brain rot and its cognitive load, cognitive fatigue, and envy subdimensions ranged from .005 to .007. This finding is highly consistent with the literature, indicating that intensive social media use produces distinct psychosocial effects by gender. Indeed, previous studies report that young women exhibit greater cognitive load, emotional fatigue, and envy-based social comparison behaviour in digital environments; in contrast, young men's digital use is more associated with game-based and externalising behaviour patterns. In this context, the fact that female adolescents scored significantly higher on the sub-dimensions of brain rot, cognitive load, cognitive fatigue, and emulation indicates that exposure to social media manifests itself in female adolescents more as internalised cognitive exhaustion and mental overload. Across studies, the psychosocial effects of intensive social media use

differ significantly by gender. Social media use in adolescent girls shows a stronger association with depression, anxiety, body dissatisfaction, and social comparison behaviours (Faverio and Sidotii, 2024; Çimşir et al., 2024; Nagata et al., 2024; WHO, 2023). In contrast, intensive digital use among boys is more often associated with gaming addiction, impulsivity, and decreased academic motivation (OECD, 2024). In the context of cyberbullying, girls are more likely to experience psychological and social exclusion-based victimisation, while boys are more likely to be exposed to direct threats and insults (UNICEF, 2023). Accordingly, it can be said that intensive social media use does not create a uniform risk area but rather creates gender-specific psychosocial vulnerability areas.

Table 7. Findings Regarding Comparisons Between Brain Rot and Sub-Dimension Scores According to Age Range Variable

Variable	Age Range	n	$\overline{X}$	ss	Levene's Test; p	F	Difference Between Groups	η2
Cognitive Load	A. 14-16 years old	555	2.26	.89	.490; p>.05	2.612**	B < C	.006
	B. 17–19 years old	471	2.22	.85				
	C. 20-22 years old	272	2.40	.87				
	D. 23 years and older	303	2.25	.85				
Cognitive Fatigue	A. 14-16 years old	555	2.77	.88	3.412; p<.05	4.847**	A>D B>D C>D	.007
	B. 17–19 years old	471	2.74	.77				
	C. 20-22 years old	272	2.72	.79				
	D. 23 years and older	303	2.52	.79				
Emulation	A. 14-16 years old	555	2.79	.87	3.115; p<.05	16.795**	A>D B>D C>D	.023
	B. 17–19 years old	471	2.86	.89				
	C. 20-22 years old	272	2.91	.81				
	D. 23 years and older	303	2.41	.78				
Depersonalization	A. 14-16 years old	555	1.59	.62	5,704; p<.05	8.084**	A < C B<C	.015
	B. 17–19 years old	471	1.62	.65				
	C. 20-22 years old	272	1.82	.76				
	D. 23 years and older	303	1.68	.72				
Brain Rot	A. 14-16 years old	555	2.44	.69	1.411; p>.05	5.496**	A>D B > D C > D	.008
	B. 17–19 years old	471	2.44	.62				
	C. 20-22 years old	272	2.52	.66				
	D. 23 years and older	303	2.28	.67				

(**: p<.01; *: p<.05)

There is a significant difference in the mean scale scores for brain rot and its subdimensions according to the age group variable among the young people in the research group (p<.01). The mean scale scores for brain rot, its cognitive fatigue and emulation subdimensions among young people aged 23 and above are significantly lower than the mean scale scores for brain rot, its cognitive fatigue and emulation subdimensions among young people in other age groups (p<.05). The average insensitivity subscale score for brain rot among young people aged 20-22 is significantly higher than

the average among young people aged 14-16 and 17-19 ($p<.05$). The source of differentiation in the cognitive load sub-dimension of brain rot is between the 17-19 age group and the 20-22 age group. The average scale score for the cognitive load sub-dimension of brain rot among young people in the 20-22 age group is significantly higher than that of the 17-19 age group ($p<.05$).

The intensive use of social media lies at the root of brain rot. It is known that problematic social media use in children and adolescents can be associated with mental health issues such as depression, anxiety, sleep disorders, attention-impulsivity problems, and decreased academic/school functioning (Ahmed et al., 2024; Duman and Turan, 2022; Khalaf et al., 2023). On the other hand, the role of social media use in adolescence in terms of identity development, social comparison, and the need for approval creates a particularly vulnerable risk area for this period (Sala et al., 2024; Cabezas-Klinger et al., 2025; Vidal et al., 2020). In young adulthood and old age, the impact of social media use on mental health can vary depending on factors such as the purpose of use, context, the individual's perception of social support, and the intensity of use (Das, 2025; Hanbay and Yıldırım, 2023).In childhood and early adolescence, screen exposure and immature control skills can pave the way for disruptions in biopsychosocial balances such as sleep patterns and self-regulation. During this period, excessive use of social media can lead to increased functional problems, such as attention deficit, impulsivity, reduced sleep duration, and daytime fatigue (Ahmed et al., 2024; APA, 2023). Furthermore, the risk of self-esteem becoming dependent on digital feedback, through the search for likes/approval at an early age, can pave the way for negative moods such as shame, anger, and low self-esteem in response to negative comments or a lack of likes (Akdoğan and Avcı, 2024). Alongside childhood, young adulthood, which spans approximately 18-25, is one of the periods with the most intensive social media use; however, its psychological impact varies depending on both the time spent using it and the manner of use. Although excessive and problematic use has been linked to depression and anxiety (Das, 2025; Shannon et al., 2022), balanced and conscious use of multiple platforms can contribute to subjective well-being in some individuals by providing a social environment, support, and a sense of belonging. However, these protective effects are generally limited to digital awareness, a social support network, and conscious awareness of usage boundaries (Hanbay and Yıldırım, 2023).

Table 8. Findings Regarding Comparisons Between Brain Rot and Subscale Scores According to Class Variable

Variable	Class Level	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Differences	η2
Cognitive Load	A. 9th Grade	262	1.94	1.17	.481; p>0.05	2.717**	F<E	.012
	B. 10th Grade	256	1.87	1.16				
	C. 11th Grade	203	2.60	1.36				
	D. 12th Grade	211	2.46	1.35				
	E. University 1	116	2.53	1.32				
	F. University 2	172	2.15	1.31				
	G. University 3	180	2.62	1.22				
	H. University 4	201	2.45	1.25				
Cognitive Fatigue	A. 9th Grade	262	2.47	1.32	1.270; p>0.05	2.393*	-	.010
	B. 10th Grade	256	2.33	1.23				
	C. 11th Grade	203	2.53	1.35				
	D. 12th Grade	211	2.54	1.38				
	E. University 1	116	2.62	1.31				
	F. University 2	172	2.38	1.40				
	G. University 3	180	2.84	1.47				
	H. University 4	201	2.62	1.38				
Emulation	A. 9th Grade	262	2.53	1.23	.870; p>0.05	5.108**	A > H; C > H; D < E; E > H; F > H	.022
	B. 10th Grade	256	2.24	1.30				
	C. 11th Grade	203	1.29	.80				
	D. 12th Grade	211	1.33	.84				
	E. University 1	116	1.42	.97				
	F. University 2	172	1.21	.69				
	G. University 3	180	1.59	1.09				
	H. University 4	201	1.56	1.09				
Deperso-nalization	A. 9th Grade	262	1.47	1.02	1.270; p>0.05	4.260**	A<E; B < E; A < F; B < F; D<F	.018
	B. 10th Grade	256	1.46	.95				
	C. 11th Grade	203	2.07	1.18				
	D. 12th Grade	211	1.95	1.15				
	E. University 1	116	2.01	1.19				
	F. University 2	172	1.70	1.08				
	G. University 3	180	2.16	1.23				
	H. University 4	201	2.12	1.18				
Brain Rot	A. 9th Grade	262	2.07	1.19	,413; p>0.05	2.945**	D<E; E > H	.013
	B. 10th Grade	256	1.97	1.13				
	C. 11th Grade	203	1.94	1.17				
	D. 12th Grade	211	1.87	1.16				
	E. University 1	116	2.60	1.36				
	F. University 2	172	2.46	1.35				
	G. University 3	180	2.53	1.32				
	H. University 4	201	2.15	1.31				

(**: p<.01; *: p<.05)

"After exam periods brain rot increases."

There is a significant difference in brain rot and its cognitive load, Emulation, and depersonalization subscale mean scores according to the grade level of young people's education ($p<.01$). The average cognitive load scale score for brain rot among young people studying in the first year of university is significantly higher than that of young people studying in the second year of university ($p<.05$). The mean Emulation subscale score for brain rot among young people studying in the fourth year of university is significantly lower than the means for young people studying in the ninth and eleventh years of secondary school, the first year of university, and the second year of university ($p<.05$). The mean score for the emulation subscale of brain rot among young people studying in the first year of university is significantly higher than the mean score among young people studying in the twelfth year of secondary school ($p<.05$).The mean scale score for the depersonalization subscale of brain rot among young people studying in the first year of university is significantly higher than the mean scores for students in the ninth and tenth years of secondary school ($p<.05$).The average score on the depersonalization subscale of the brain rot scale for young people studying in their second year of university is significantly higher than the average for students in the ninth, tenth and twelfth grades of secondary school ($p<.05$). According to the total brain rot scale score, the average brain rot scale scores of first-year university students are significantly higher than those of twelfth-year high school students and fourth-year university students ($p<.05$).

In fact, various studies indicate that students' social media use may pose significant risks to academic achievement, mental health, sleep, and learning patterns. According to Henderson (2024), an increase in the frequency of social media use among 11–15-year-old students may lead to a decline in their grade point averages. Furthermore, Koç et al. (2023) confirm that there is a level of social media use among middle and high school students that could lead to addiction. According to this, the levels of addiction among middle school students are similar to those among high school students. In fact, it can be said that intensive or problematic social media use among children and adolescents of secondary school age can lead to a decline in academic achievement, distractibility, and possible psychological problems such as difficulty controlling external stimuli and sleep irregularities. Furthermore, as cognitive and self-efficacy control skills are still developing in this age group, social media can be a more risky environment due to its distracting nature (Abuzar and Hussain, 2024). The problems students encounter can also vary as they get older. Although social media is preferred in contexts such as information acquisition, social networking, and communication for older age groups, problems such as anxiety, depression, and social anxiety can be observed in a manner not dissimilar to younger age groups (Fabris et al., 2024). The increase in usage rates with advancing age may increase the risk of psychosocial maladjustment. This increase leads to sleep irregularities, absenteeism, difficulty adapting to classes, and problems with attention and motivation. For university students in particular, intensive social media use can lead to inattention, time management problems, and disruptions to academic responsibilities (Jin and İbrahim, 2024; Katırcı and Bulut, 2024).

Table 9. Findings Regarding Comparisons Between Brain Rot and Subscale Scores According to the University Entrance Score Type Variable

Variable	University entrance exam score type	n	$\overline{X}$	ss	Levene's Test; p	F	Difference Between Groups	η2
Cognitive Load	A. Verbal	263	1.90	1.23	1.754; p>0.05	4.287**	A > C; B > C	.008
	B. Numerical	689	1.86	1.22				
	C. Equal weight	531	1.69	1.10				
	D. Foreign language	117	1.85	1.22				
Cognitive Fatigue	A. Verbal	263	2.41	1.30	.404; p>0.05	2.691*	C<D	.005
	B. Numerical	690	2.50	1.32				
	C. Equal weight	531	2.39	1.28				
	D. Foreign language	117	2.68	1.29				
Emulation	A. Verbal	263	2.49	1.41	1.559; p>0.05	4.701**	A < D; C < D; S < D	.009
	B. Numerical	690	2.52	1.31				
	C. Equal weight	531	2.43	1.36				
	D. Foreign language	117	2.91	1.41				
Depersona-lization	A. Verbal	263	1.50	1.01	1.249; p>0.05	3.036*	A>C	.006
	B. Numerical	690	1.41	.92				
	C. Equal weight	531	1.35	.87				
	D. Foreign language	117	1.44	1.05				
Brain Rot	A. Verbal	263	2.09	1.22	,793; p>0.05	4.633**	B>C; C < D	.009
	B. Numerical	689	2.04	1.18				
	C. Equal weight	531	1.88	1.10				
	D. Foreign language	117	2.21	1.24				

(**: p<.01; *: p<.05)

There is a significant difference in the average scores of the sub-dimension scales of brain rot and its cognitive load, cognitive fatigue, Emulation, and depersonalization among young people according to their university entrance exam score type (p<.01). The mean scores of the cognitive load subscale of brain rot among students with an equal weight university entrance exam score type are significantly lower than those of students with a verbal and numerical university entrance exam score type (p<.05).The average cognitive fatigue subscale score for brain rot among students with a foreign language university entrance exam score type is significantly higher than the average for students with an equal weight university entrance exam score type (p<.05). The mean score for the emulation subscale of brain rot among students with a foreign language university entrance exam score type is significantly higher than the mean scores of students with verbal, numerical, and equal weight university entrance exam score types (p<.05). The average score on the depersonalization subscale of brain rot for students with a verbal university entrance exam score type is significantly higher than the average scores of students with an equal weighting university entrance exam score type (p<.05). According to the total brain rot scale score, the average brain rot scale scores of students with an equal weight university entrance exam score type are significantly lower than the averages of students with a numerical and foreign language university entrance exam score type (p<.05).

Table 10. Findings Regarding Comparisons Between Brain Rot and Subscale Scores According to School Type Variable

Variable	School Type	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Difference	η2
Cognitive Load	A. Anadolu High School	629	1.82	1.22	1.456; p>0.05	8.973**	A > D; A > C; C < E; D < E	.022
	B. Anatolia Imam Hatip High School	68	1.60	1.09				
	C. Vocational Technical High School	115	1.64	1.09				
	D. Science and Social Sciences High School	118	1.44	0.89				
	E. University	670	1.91	1.21				
Cognitive Fatigue	A. Anadolu High School	629	2.59	1.35	1.742; p>0.05	8.741**	A > B; A > C; A > E; C<D; C<E	.021
	B. Anatolia Imam Hatip High School	68	2.13	1.28				
	C. Vocational Technical High School	115	1.97	1.24				
	D. Science and Social Sciences High School	118	2.58	1.27				
	E. University	671	2.44	1.25				
Emulation	A. Anadolu High School	629	2.60	1.35	,669; p>0.05	6,528**	A > B; A > C; A > D; B < E C < D	.016
	B. Anatolia Imam Hatip High School	68	2.04	1.30				
	C. Vocational Technical High School	115	2.21	1.30				
	D. Science and Social Sciences High School	118	2.81	1.28				
	E. University	671	2.48	1.36				
Depersona-lization	A. Anadolu High School	629	1.35	.88	1.776; p>0.05	8.183**	A<E; D<E	.020
	B. Anatolia Imam Hatip High School	68	1.21	.76				
	C. Vocational Technical High School	115	1.37	.87				
	D. Science and Social Sciences High School	118	1.21	.69				
	E. University	671	1.52	1.03				
Brain Rot	A. Anadolu High School	629	2.07	1.19	1.979; p>0.05	6.418**	A > B; A > C; B < E; C < E	.016
	B. Anatolia Imam Hatip High School	68	1.74	1.13				
	C. Vocational Technical High School	115	1.66	1.07				
	D. Science and Social Sciences High School	118	1.84	1.06				
	E. University	670	2.06	1.17				

(**: p<.01; *: p<.05)

The scale mean scores for brain rot and its subdimensions differ significantly according to the type of school attended by young people ($p<.05$). In the cognitive load sub-dimension of brain rot among young people, the average cognitive load scale score of young people studying at Anatolian High Schools is significantly higher than the averages of young people studying at Vocational Technical High Schools and Science and Social Sciences High Schools ($p<.05$). The scale score mean for the cognitive load sub-dimension of brain rot among university students is significantly higher than the means for students attending vocational technical high schools and science and social sciences high schools ($p<.05$).

The average cognitive fatigue subscale score for young people studying at Anatolian high schools is significantly higher than the average cognitive fatigue scale scores for young people studying at Anatolian Imam Hatip High Schools, Vocational Technical High Schools, and universities ($p<.05$). The average cognitive fatigue scale score for brain rot among young people studying at vocational technical high schools is significantly lower than the scale score for young people studying at universities ($p<.05$).

The average emulation subscale scores of young people studying at Anatolian High Schools are significantly higher than the average emulation scale scores of young people studying at Anatolian Imam-Hatip High Schools, Vocational Technical High Schools, and Science and Social Sciences High Schools ($p<.05$). The average score on the emulation scale for brain rot among young people studying at university is significantly higher than the average score among young people studying at Anatolian Imam-Hatip High Schools ($p<.05$). The mean emulation subscale scores for brain rot among young people studying at Science and Social Sciences High Schools are significantly higher than those of students studying at Vocational Technical High Schools ($p<.05$).

The mean scale score for the depersonalization sub-dimension of brain rot among university students is significantly higher than that of students at Anatolian and Science and Social Sciences High Schools ($p<.05$).

The mean scale score for brain rot among students attending Anatolian High Schools is significantly higher than that of students attending Anatolian Imam-Hatip High Schools and Vocational Technical High Schools ($p<.05$). The average brain rot scale score of young people studying at university is significantly higher than that of students studying at Anatolian Imam-Hatip High Schools and Vocational Technical High Schools ($p<.05$).

Various studies conducted on this issue present a similar picture. Kaya et al. (2023) state that students attending vocational high schools exhibit lower levels of social media addiction than those attending other types of high schools. Another reflection of this situation is that these students' well-being is significantly higher than that of others. Similarly, Altınok (2021) reached a similar conclusion, describing students attending vocational high schools as less dependent. It can be said that engaging in various jobs and hobbies may help mitigate the negative aspects of social media use. Students attending such schools may exhibit fewer signs of dependency because they frequently participate in various field and workshop activities. In fact, when evaluated holistically, many studies have shown that individuals engaging in any activity during their free time (hobbies, sports, physical

activity, playing instruments, caring for animals, etc.) can indirectly but consistently weaken patterns of social media and general digital addiction. Specifically, a Korean study of children suggests that the negative association between activity-seeking practical hobbies and media addiction indicates that such activities not only fill time but also create an alternative reward system that limits the orientation towards digital stimuli (Hong and Ryu, 2022). More recent studies conducted on adolescents show that the relationship between physical activity and social media addiction is not direct but indirect, mediated through negative cognitions and difficulties in emotion regulation (Wang et al., 2025a). This finding demonstrates that physical activity is not merely a behavioural engagement; it can also serve a function that weakens the need for digital escape by strengthening the individual's emotion regulation capacity. It is known that physical activity-based interventions implemented by young individuals can lead to a significant reduction in social network addiction; therefore, physical activity can be considered a preventive and rehabilitative tool (Wang et al., 2025b). Similarly, in review and application guidelines targeting digital addictive behaviours, it is stated that regular exercise and physical activity-based programmes can provide structured, sustainable intervention frameworks for reducing internet, smartphone, and problematic social media use (Garcia-Ortiz et al., 2025). It is emphasised that these interventions, particularly when implemented in a regular structure of at least 12 weeks with three to five sessions per week, can produce more lasting behavioural change. A randomised controlled experimental study conducted with adolescent groups also shows that 30–60-minute exercise sessions at least three days a week produce a significant reduction in mobile phone addiction symptoms, indicating that this protective effect is supported not only at a correlational level but also at a causal level (Li et al., 2023). Intervention studies conducted on students diagnosed with internet addiction reveal a similar picture. The fact that regular exercise programmes significantly reduce the severity of addiction suggests that exercise can function not only as a protective but also as a behavioural treatment component. In this context, exercise produces an alternative reinforcement cycle based on physical effort and a sense of achievement, countering the dopamine-focused digital reward system (Wang et al., 2025c).

"The level of brain Rot remains lower in school types that keep young people engaged in an activity."

Table 11. Findings Regarding Comparisons Between Brain Rot and Subscale Scores According to the Mother's Education Level Variable

Variable	Mother's education level	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Difference	η2
Cognitive Load	A. Primary	599	1.79	1.16	1.175; p>0.05	,341	-	-
	B. Secondary school	322	1.86	1.23				
	C. High School	402	1.81	1.20				
	D. University	238	1.75	1.15				
	E. Postgraduate	39	1.92	1.33				
Cognitive Fatigue	A. Primary Education	599	2.43	1.30	1.880; p>0.05	.499	-	-
	B. Secondary school	323	2.43	1.32				
	C. Secondary school	402	2.50	1.31				
	D. University	238	2.54	1.25				
	E. Postgraduate	39	2.38	1.48				
Emulation	A. Primary education	599	2.45	1.35	1.591; p>0.05	1.423	-	-
	B. Secondary school	323	2.58	1.33				
	C. High School	402	2.51	1.36				
	D. University	238	2.62	1.38				
	E. Postgraduate	39	2.36	1.44				
Depersonalization	A. Primary education	599	1.44	0.97	1.164; p>0.05	0.286	-	-
	B. Secondary school	323	1.41	.88				
	C. High School	402	1.34	.89				
	D. University	238	1.42	.96				
	E. Postgraduate	39	1.51	1.10				
Brain Rot	A. Primary Education	599	2.01	1.16	1.847; p>0.05	,209	-	-
	B. Secondary school	322	2.02	1.18				
	C. High School	402	2.00	1.16				
	D. University	238	2.02	1.16				
	E. Postgraduate	39	1.85	1.29				

(**: p<.01; *: p<.05)

Differences in scale score averages for brain rot and its sub-dimensions, by the educational level of young people's mothers, were tested using an ANOVA. According to the statistical results of this test, there is no significant difference in scale scores for brain rot and its sub-dimensions by the educational level of young people's mothers (p>.05).

Table 12. Findings Regarding Comparisons of Brain Rot and Sub-Dimension Scores According to the Father's Educational Level Variable

Variable	Father's educational level	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Difference	η2
Cognitive Load	A. Primary	348	1.82	1.16	.143; p>0.05	1.134	-	-
	B. Secondary school	300	1.96	1.28				
	C. High School	469	1.76	1.16				
	D. University	416	1.76	1.16				
	E. Postgraduate	67	1.69	1.21				
Cognitive Fatigue	A. Primary	348	2.36	1.28	.409; p>0.05	1.705	-	-
	B. Secondary school	301	2.59	1.35				
	C. High School	469	2.41	1.28				
	D. University	416	2.52	1.31				
	E. Postgraduate	67	2.45	1.29				
Emulation	A. Primary	348	2.41	1.40	1.442; p>0.05	2.133	-	-
	B. Secondary school	301	2.61	1.31				
	C. High School	469	2.45	1.33				
	D. University	416	2.61	1.36				
	E. Postgraduate	67	2.51	1.41				
Depersonalization	A. Primary	348	1.47	0.98	2.398; p>0.05	1.132	-	-
	B. Secondary school	301	1.48	1.00				
	C. High School	469	1.36	0.89				
	D. University	416	1.34	.83				
	E. Postgraduate	67	1.52	1.15				
Brain Rot	A. Primary	348	2.01	1.15	,851; p>0.05	1.433	-	-
	B. Secondary school	300	2.15	1.20				
	C. High School	469	1.91	1.15				
	D. University	416	2.01	1.16				
	E. Postgraduate	67	1.99	1.25				

(**: p<.01; *: p<.05)

An ANOVA was conducted to examine differences in the mean scale scores for brain rot and its subdimensions by the educational level of young people's fathers. According to the ANOVA results, there is no significant difference in the mean scale scores for brain rot and its subdimensions across the educational levels of young people's fathers (p>.05).

Various studies on the role of parents' educational level on children's digital behaviour actually present a two-sided pattern. On the one hand, studies show that parental educational level can indirectly shape social media use. These studies suggest that parents with higher educational levels may have stronger digital awareness and guidance capacities; by providing more consistent control in areas such as content selection, time management, and risk awareness, they can lay the groundwork for children to use social media in a more controlled, purposeful, and regular manner. From this

perspective, parental educational level can be considered a protective background variable for social media addiction (Vossen et al., 2024; Topan et al., 2025). However, recent findings also reveal that parental educational level is not as strong a determinant as previously thought. ntly, studies conducted in the pre-school period show that the levels of problematic media use among 5–6-year-old children do not differ significantly according to the educational level of their parents, and that problematic use is more closely linked to child-centred behavioural characteristics, as seen in various studies (Emond et al., 2024; Swit et al., 2023). Similarly, case-control studies conducted on adolescents in Turkey show that adolescents diagnosed with internet addiction do not differ significantly from those without such a diagnosis in terms of parental educational level, class, school type, age, and gender; it has been shown that the main factors distinguishing addiction are sleep patterns, reading habits, the purpose of internet use, and the frequency of social media/chat use (Çiçek et al., 2023). Problem internet use studies conducted on a larger scale also support a similar trend; internal psychological variables (mood, impulsivity, cognitive distortions, etc.) have a strong effect in predicting addiction, whereas socio-economic variables such as parental education level and family well-being often remain weak or insignificant predictors (Anand et al., 2021; Wiedermann et al., 2025). Studies examining digital addiction behaviours within the context of family processes also indicate that the fundamental dynamics explaining addiction are the quality of family relationships, parenting style, psychological control, and digital parenting practices; parental education level, on the other hand, often has a limited effect alongside these processes (Liu et al., 2024; Zhang et al., 2025). Furthermore, studies examining the relationships between co-parenting, phubbing parental behaviour, and problematic media use among preschool children have shown that even when parental education level is statistically controlled, the variables that primarily explain children's problematic media use are the parents' forms of interaction with the child and the parent's own phubbing behaviour (Zhang et al., 2024; Zhang et al., 2025). When all these findings are considered together, although parental education level may indirectly influence digital behaviours in some cases, the point increasingly emphasised in the current literature is that cognitive-emotional deterioration is more strongly determined by micro-level variables such as parenting processes, communication quality, emotion regulation patterns, purpose of use, and daily routines than by structural socio-economic indicators.

"The parents' education is not a protective factor."

Table 13. Findings on Comparisons Between Brain Rot and Sub-Dimension Scores According to the Most Frequently Used Social Media Application Variable

Variable	Most frequently used social media application	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Difference	η2
Cognitive Load	A. X	107	1.77	1.14	4.294; p>0.05	.665		.002
	B. Instagram	1038	1.80	1.17				
	C. Facebook	7	2.14	1.57				
	D. Snapchat	20	1.40	.82				
	E. TikTok	243	1.87	1.23				
	F. Other	185	1.81	1.25				
Cognitive Fatigue	A. X	107	2.45	1.26	1.955; p>0.05	5.850**	B<E; E>F	.018
	B. Instagram	1,039	2.42	1.29				
	C. Facebook	7	2.43	1.40				
	D. Snapchat	20	2.80	1.01				
	E. TikTok	243	2.77	1.30				
	F. Other	185	2.28	1.36				
Emulation	A. X	107	2.54	1.28	3.082; p<0.05	18.396**	A < E; B < E E > F; A > F; B > F; D > F	.055
	B. Instagram	1039	2.51	1.34				
	C. Facebook	7	2.14	1.46				
	D. Snapchat	20	2.75	1.25				
	E. TikTok	243	2.95	1.36				
	F. Other	185	1.95	1.26				
Depersona-lization	A. X	107	1.40	.89	.507; p>0.05	.360		.001
	B. Instagram	1039	1.41	.92				
	C. Facebook	7	1.71	1.25				
	D. Snapchat	20	1.30	0.73				
	E. TikTok	243	1.42	.97				
	F. Other	185	1.40	.98				
Brain Rot	A. X	107	2.01	1.11	5,484; p<0.05	5.482**	B<E; D>F	.017
	B. Instagram	1038	2.00	1.16				
	C. Facebook	7	2.14	1.07				
	D. Snapchat	20	2.00	1.03				
	E. TikTok	243	2.17	1.24				
	F. Other	185	1.83	1.17				

Differences in brain rot and its sub-dimensions across the most used social media applications among young people were tested using an ANOVA. There was no significant difference in the cognitive load sub-dimension of brain rot across the most used social media applications among young people (p>.05).

The mean scale score for the cognitive fatigue sub-dimension of brain rot among young people who use TikTok most frequently is significantly higher than the means for young people who use Instagram and other applications not included in the study (p<.05).

The mean emulation subscale score for brain rot among young people whose most frequently used social media application is TikTok is significantly higher than that of young people whose most frequently used social media application is X, Instagram, or other applications not included in the study ($p<.05$). The mean emulation subscale scores for brain rot among young people who use applications not included in the study more frequently are significantly lower than those of young people who use X, Instagram, Snapcat, and TikTok ($p<.01$).

The mean scores on the depersonalization subscale of brain rot did not differ significantly among young people according to the variable of the most frequently used social media application ($p<.01$). The mean brain rot scale scores of young people who most frequently use the TikTok social media application are significantly higher than those of young people who use the Instagram application ($p<.05$). The average brain rot scale scores of young people whose most frequently used social media application is Snapcat are significantly higher than the averages of young people using applications classified as others not included in the study ($p<.05$).

The most widely used social media platforms globally (particularly Instagram, TikTok, and similar visually heavy applications) stand out not only for their frequent use but also for the negative psychosocial consequences they create for individuals. It has been reported that intensive exposure to Instagram and TikTok, which are among the most frequently used applications by young individuals, is associated with numerous risk areas such as depression, anxiety, sleep disorders, body image issues, addiction, behavioural problems, and cyberbullying (Bozzola et al., 2022). Furthermore, Keles et al. (2020) conducted a systematic review that comprehensively examined social media use among adolescents in terms of depression, anxiety, and psychological distress. The findings of this review show that social media use is a complex phenomenon that must be measured not only in terms of quantity (time spent) but also in terms of activity type (passive or active), users' emotional investment/attachment level, and addiction. In particular, it can be said that spending a long time on social media, along with forms of use that involve intense emotional investment in the platforms (e.g., constantly seeking approval, intense following) or show addictive tendencies, significantly increases the risk of raising levels of depression, anxiety and general psychological distress in adolescents. In this context, it can be argued that the most popular applications among users present a more psychosocially risky profile for adolescents, not only because they reach large numbers of people, but also because of their design features, such as algorithmic feeds, like mechanisms, and constant notifications. These features encourage usage patterns that require intense and emotional investment. Over time, this usage pattern can lead to harmful cognitive effects such as impaired decision-making and attention difficulties (Vannucci et al., 2020). The instant gratification derived from social media platforms can lead to attention deficit and cognitive overload by unconsciously training the brain to constantly seek stimulation (Woods and Scott, 2016; Barry et al., 2017).

When the current literature is evaluated collectively, it can be said that Instagram and Snapchat, which are visually-heavy social media platforms, pose significant risks to adolescents' psychosocial development. These platforms are used much more intensively than Facebook, and exposure to high-content visual media for more than two hours a day significantly increases internalised symptoms such as body image concerns and depressive and anxious moods (Marengo et al., 2018). The same study

reveals that this negative effect arises indirectly through body image concerns rather than directly from usage time; contact with appearance-focused content distorts body perception and increases psychological vulnerability (Revranche et al., 2021). In this regard, young people aged 14–24 assessing Instagram and Snapchat as the applications with the most negative impact on mental health in terms of sleep, body image, anxiety, depression, and FOMO reinforces observations regarding the risk profiles of these platforms (Merino et al., 2024).

Studies specific to Instagram also reveal the relational dimensions of this risk. Problematic Instagram use may mediate the relationship between insecure attachment patterns and psychological risk in adolescents (Ballarotto et al., 2021). This suggests that the platform is not merely an entertainment space but also an environment where developmentally sensitive processes such as emotional regulation, seeking social approval, and identity construction are concentrated. Therefore, the boundary between normative and dysfunctional use can become more permeable, especially during adolescence when identity development accelerates.

The rise of TikTok has introduced a new vulnerability mechanism. Research conducted in Greece shows that problematic TikTok use is positively associated with depression and anxiety in adolescents, and that this association may be stronger in males (Bilali et al., 2025). TikTok's algorithmically reinforced content design functions as an instant reward cycle here; rising scores on the platform's "mood modification" and "conflict" dimensions may be associated with mood instability, daytime sleepiness, and impaired sleep quality. Furthermore, this level and form of use create a cycle of emotional escape–physiological attrition in adolescents, impairing sleep hygiene and long-term cognitive functions (Bozzola et al., 2022; Chiodi, 2025).

The neurobiological basis of these psychosocial processes relies on reinforcement mechanisms similar to those in addiction cycles. Dopamine release associated with social media interactions, particularly during adolescence when impulsivity and reward sensitivity are high, can lead to excessive sensitivity to notifications and feedback, impairing fundamental cognitive functions such as focus and working memory. The expectation of instant feedback, such as likes and comments, reduces cognitive depth, encouraging superficial information processing and replacing critical thinking with repetitive stimulus tracking (Barry et al., 2017). This cognitive attrition also feeds emotional dysregulation associated with brain rot. Woods and Scott (2016) and Keles et al. (2023) state that constant and passive social media consumption reduces sensitivity to emotional experiences, weakening both an individual's capacity to process their own emotions and their empathetic responses to others' emotional experiences. This emotional numbness can lead to an increase in superficial interactions in social relationships and a weakening of genuine bonding processes. In fact, this weakness in bonding can increase feelings of loneliness and isolation, even though social media platforms have the potential to strengthen peer connections. This is because when online interactions replace face-to-face relationships, social satisfaction decreases, and exposure to idealised content reinforces self-dissatisfaction and alienation (Agyapong-Opoku et al., 2025; Keles et al., 2023). These maladaptive coping strategies can accelerate the brain rot process by deepening both emotional and cognitive vulnerability.

"TikTok usage increases the risk of brain rot."

Table 14. Findings Regarding Comparisons Between Brain Rot and Sub-Dimension Scores According to the Variable of When Social Media is Used Most

Variable	The time of day when social media is most frequently used	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Difference	η2
Cognitive Load	A. During my time at school	21	2.00	1.41	1.340; p>0.05	4.39**	B < C; C > D; C > E; C > G	.016
	B. When travelling on public transport	167	1.65	1.09				
	C. When I am with my family	13	3.15	1.46				
	D. When I am with my friends	22	1.68	1.17				
	E. Before going to bed	288	1.93	1.27				
	F. After waking up	11	2.27	1.27				
	G. In my free time	1078	1.78	1.16				
Cognitive Fatigue	A. During my time at school	21	2.38	1.63	2.756; p<0.05	6.26**	C>D; C > G; E > G	.023
	B. When travelling on public transport	167	2.69	1.33				
	C. When I am with my family	13	3.92	.95				
	D. When I am with my friends	22	1.95	1.25				
	E. Before going to bed	288	2.65	1.30				
	F. After waking up	11	3.09	.83				
	G. In my free time	1079	2.37	1.28				
Emulation	A. During my time at school	21	2.67	1.62	3.179; p<0.05	2.82*	E>G	.011
	B. When travelling on public transport	167	2.59	1.35				
	C. When I am with my family	13	2.62	1.45				
	D. When I am with my friends	22	2.64	1.47				
	E. Before going to bed	288	2.72	1.36				
	F. After waking up	11	3.09	1.14				
	G. In my free time	1079	2.43	1.34				
Deperso-nalization	A. During my time at school	21	1.57	1.29	.768; p>0.05	5.31**	A < C; A > D; B < C; C > D; C > E; C>G	.020
	B. When travelling on public transport	167	1.41	.95				
	C. When I am with my family	13	2.69	1.49				
	D. When I am with my friends	22	1.50	1.14				
	E. Before going to bed	288	1.44	0.92				
	F. After waking up	11	1.55	.93				
	G. In my free time	1079	1.38	.90				
Brain Rot	A. During my time at school	21	2.29	1.49	3.575; p>0.05	5.82**	E > G	.021
	B. When travelling on public transport	167	2.10	1.19				
	C. When I am with my family	13	3.31	1.49				
	D. When I am with my friends	22	1.82	1.14				
	E. Before going to bed	288	2.14	1.21				
	F. After waking up	11	2.45	0.93				
	G. In my free time	1078	1.93	1.13				

(**: p<.01; *: p<.05)

The average scale scores for brain rot and its subdimensions among young people differ significantly ($p<.05$) depending on the time of day they use social media most. Cognitive load sub-dimension of brain rot, the average scale score of young people who use social media more when they are with their family is significantly higher than the average of those who use social media more when travelling on public transport, when they are with their friends, before going to sleep, and in their free time ($p<.05$).

The scale score average related to the cognitive fatigue sub-dimension of young people who use social media more when they are with their family is significantly higher than the average of those who use social media more when they are with their friends and in their free time ($p<.05$). Similarly, the average scale score for the cognitive fatigue sub-dimension among young people who use social media more before going to sleep is significantly higher than that of those who use social media more in their free time ($p<.05$).

The mean scale score for the brain rot subscale among young people who use social media more before going to sleep is significantly higher than that of those who use social media more during their free time ($p<.05$). The average scale score for the depersonalization sub-dimension of brain rot among young people who use social media more when they are with their family is significantly higher than the average among those who use social media more when they are at school, travelling on public transport, with friends, before going to sleep, and in their free time ($p<.05$). Similarly, the average scale score for the depersonalization sub-dimension of brain rot among young people who use social media more when they are at school is significantly higher than that of those who use social media more when they are with friends ($p<.05$). The average brain-related scale score of young people who use social media more before going to sleep is significantly higher than the average of those who use social media more in their free time ($p<.05$).

Studies eStudies examining individuals' social media use times indicate that social media use intensifies during the evening and night hours, particularly before bedtime, and that negative psychological effects also become more pronounced during this time. This creates a time period where both physiological and psychosocial mechanisms intersect. For example, Woods and Scott's (2016) study with adolescents revealed that night-specific social media use has stronger predictive effects on sleep quality, anxiety, depression, and self-esteem than total daily use. In particular, social media interactions close to bedtime can delay sleep onset and increase night-time awakenings, potentially leading to weakened emotional regulation capacity and intensified psychological symptoms the following day. Similarly, Hamilton and Lee (2021) show that excessive daytime sleepiness is more common among adolescents who frequently check social media when there are no parental rules regarding bedtime. In addition, some longitudinal studies also confirm the decisive role of timing. Problematic social media use among individuals may lead to later bedtimes and lower sleep quality scores over time. Furthermore, strict rules established by parents regarding pre-sleep technology use may only have a protective effect for a very small number of users. This suggests that the "night-shifted usage pattern" may be more resistant to intervention among adolescents who use social media heavily (Van den Eijnden et al., 2021). In fact, the fear of missing out (FOMO) and the desire to

conform to social norms underlie young people's late-night social media use. Young people believe that going offline will disconnect them from their peer groups, that responding to messages late could damage relationships, and that this is why their sleep duration is significantly reduced (Scott et al., 2019). More comprehensive studies on this topic also show that social media use, especially during the evening and night hours, is consistently associated with difficulty falling asleep, nighttime awakenings, and reduced total sleep time (Cal-Herrera et al., 2025). The fact that experiential sampling studies show that social media use before bedtime does not always disrupt objective sleep duration but does reduce subjective sleep satisfaction (Das-Friebel et al., 2020) indicates that individual vulnerabilities (stress, depressive tendencies, etc.) may be more decisive at this time.ing of social media use not only produces physiological effects but also intensifies individuals' social comparison and emotional response mechanisms. Increasing social media interactions during peak hours can lead to anxiety and low self-esteem (Kelly et al., 2018). Using social media during busy times can lead to anxiety and low self-esteem, as well as erosion of self-worth and frequent negative feelings such as hopelessness and inadequacy (Beyens et al., 2020). When all these findings are considered together, the timing of social media use emerges as a central variable in understanding problematic use and psychological distress. Social media behaviour concentrated in the evening/night hours can impair adolescents' mental health through mutually reinforcing mechanisms such as disrupted sleep patterns, increased emotional reactivity, triggering FOMO, and heightened susceptibility to negative feedback. Therefore, intervention programmes should focus not only on total screen time but also on regulating usage during the pre-bedtime period and structuring family/school routines within this window.

Table 15. Findings on Comparisons Between Brain Rot and Subscale Scores According to the Frequency of Social Media Application Use During the Week

Variable	Daily social media application usage time	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Difference	η2
Cognitive Load	A. 0-1 hour per day	119	1.44	.94	3.163; p<0.05	25,031**	A < B; A < C; A < D; A < E; A < F; B < C; B < D; B < E; B < F; C < D; C < E; C < F	.073
	B. 1–2 hours per day	352	1.57	1.02				
	C. 2-3 hours per day	465	1.69	1.12				
	D. 3-4 hours per day	322	1.95	1.22				
	E. 4-5 hours per day	196	2.20	1.30				
	F. More than 5 hours per day	146	2.22	1.41				
Cognitive Fatigue	A. 0-1 hour per day	119	1.74	1.12	1.208; p>0.05	41.225**	A < B; A < C; A < D; A < E; A < F; B < C; B < D; B < E; B < F; C < D; C < E; C < F; D < F	.114
	B. 1–2 hours per day	352	2.10	1.21				
	C. 2-3 hours per day	465	2.36	1.28				
	D. 3-4 hours per day	323	2.65	1.26				
	E. 4-5 hours per day	196	2.98	1.22				
	F. More than 5 hours per day	146	3.12	1.29				
Emulation	A. 0-1 hour per day	119	1.51	0.98	1.956; p>0.05	60.941**	A < B; A < C; A < D; A < E; A < F; B < C; B < D; B < E; B < F; C < D; C < E; C < F;	.160
	B. 1–2 hours per day	352	2.11	1.26				
	C. 2-3 hours per day	465	2.45	1.33				
	D. 3-4 hours per day	323	2.73	1.28				
	E. 4-5 hours per day	196	3.03	1.28				
	F. More than 5 hours per day	146	3.36	1.31				
Deperso-nalization	A. 0-1 hour per day	119	1.26	0.74	10,883; p<0.05	20,856**	A<B; A<D; A<E; A<F; B<D; B<E; B<F; C<E; C<F; D<F;	.061
	B. 1–2 hours per day	352	1.29	.78				
	C. 2-3 hours per day	465	1.31	.80				
	D. 3-4 hours per day	323	1.40	.89				
	E. 4-5 hours per day	196	1.56	1.09				
	F. More than 5 hours per day	146	1.95	1.36				
Brain Rot	A. 0-1 hour per day	119	1.39	.86	1,991; p>0.05	54,801**	A < B; A < C; A < D; A < E; A < F; B < C; B < D; B < E; B < F; C < D; C < E; C < F; D < E; D < F	.147
	B. 1–2 hours per day	352	1.67	1.03				
	C. 2-3 hours per day	465	1.88	1.09				
	D. 3-4 hours per day	322	2.23	1.18				
	E. 4-5 hours per day	196	2.41	1.18				
	F. More than 5 hours per day	146	2.70	1.29				

(**: p<.01; *: p<.05)

"As social media usage time increases, brain rot also increases."

The average scores for brain rot and its sub-dimension scales among young people differ significantly ($p<.05$) by the variable of daily time spent on social media. People's social media usage increases during the day, and their average brain rot scale scores also increase. In the pairwise comparisons conducted, the cognitive load subscale mean scores for brain rot among young people who use social media for 0-1 hours per day are significantly lower than the means in the other categories ($p<.05$). The average cognitive load scale score for brain rot among young people who use social media daily for 1-2 hours is significantly lower than the averages for young people who use social media daily for 2-3 hours, 3-4 hours, 4-5 hours, and over 5 hours ($p<.05$). The average cognitive load subscale score for brain rot among young people who use social media for 2-3 hours daily is significantly lower than the averages for young people who use social media for 3-4 hours, 4-5 hours, and over 5 hours daily ($p<.05$).

The average cognitive fatigue subscale score for brain rot among young people who use social media for 0-1 hours per day is significantly lower than that of the other categories ($p<.05$). The average cognitive fatigue scale score for brain rot among young people who use social media daily for 1-2 hours is significantly lower than the averages for young people who use social media daily for 2-3 hours, 3-4 hours, 4-5 hours, and over 5 hours ($p<.05$). The average cognitive fatigue subscale score for brain rot among young people who use social media for 2-3 hours daily is significantly lower than the averages for young people who use social media for 3-4 hours, 4-5 hours, and over 5 hours daily ($p<.05$).

The mean scale score for the emulation subscale of brain rot among young people who use social media daily for 0-1 hours is significantly lower than that of the other categories ($p<.05$). The mean emulation scale score for brain rot among young people who use social media daily for 1-2 hours is significantly lower than the means for young people who use social media daily for 2-3 hours, 3-4 hours, 4-5 hours, and over 5 hours ($p<.05$). The mean emulation subscale score for brain rot among young people who use social media for 2-3 hours daily is significantly lower than the means for young people who use social media for 3-4 hours, 4-5 hours, and over 5 hours daily ($p<.05$).

The average scale score for the depersonalization subscale of brain rot among young people who use social media for 0-1 hours per day is significantly lower than the averages for young people who use social media for 1-2 hours, 3-4 hours, 4-5 hours, and 5 hours or more per day ($p<.05$).The average insensitivity scale score for brain rot among young people who use social media daily for 1-2 hours is significantly lower than the averages for young people who use social media daily for 3-4 hours, 4-5 hours, and 5 hours or more ($p<.05$). The average depersonalization subscale score for brain rot among young people who use social media for 2-3 hours daily is significantly lower than the averages for young people who use social media for 4-5 hours, 5 hours, and over 5 hours daily ($p<.05$).

The average brain rot scale score of young people who use social media for 0-1 hours per day is significantly lower than the averages of young people who use social media for 1-2 hours, 3-4 hours, 4-5 hours, and 5 hours or more per day ($p<.05$).The average brain rot scale score of young people who use social media daily for 1-2 hours is significantly lower than the averages of young people

who use social media daily for 3-4 hours, 4-5 hours, and 5 hours or more ($p<.05$). The average brain rot scale score of young people who use social media for 2-3 hours per day is significantly lower than the average scores of young people who use social media for 4-5 hours, 5 hours, and over 5 hours per day ($p<.05$). The average brain rot scale score of young people who use social media for 3-4 hours per day is significantly lower than the average scores of young people who use social media for 5 hours or more per day ($p<.05$).

Excessive daily social media usage has been linked to increasingly visible cognitive, emotional, and social impairments in children and adolescents. Studies demonstrating that intense digital exposure has corrosive effects, particularly on executive functions, attention processes, and cognitive flexibility, support this view. Aitken et al. (2025) state that excessive attachment to social media platforms leads to changes in brain activation patterns and a decline in executive functions, resulting in higher-level users demonstrating lower accuracy in cognitive tasks. Similarly, Adam and Soh (2025) emphasise the links between digital addiction and impaired cognitive flexibility and emotional depersonalization, noting that prolonged social media use may lead to permanent changes in neurobiological functioning. These cognitive attrition processes are accompanied by impairments observed in emotional functioning. Furthermore, Yıldırım et al. (2023) show that young people who use social media intensively are at higher risk of depression and anxiety, while passive content consumption increases feelings of loneliness and social isolation. This finding is consistent with the findings of Peixoto et al. (2025), which reveal that social media content leads to body image distortion, low self-esteem, and feelings of inadequacy in adolescents through idealised representations. Increased daily usage time affects not only individual emotional processes but also the quality of social relationships; the intensification of online comparison cycles, particularly in the evening hours, reinforces alienation, social disengagement, and withdrawal from interpersonal relationships among young people (Yıldırım et al., 2023). This pattern of social withdrawal can reinforce cognitive and emotional decline, making brain deterioration permanent on both psychological and behavioural levels. Furthermore, as demonstrated by Zipursky et al. (2012), the potential of social media platforms to reinforce risk-taking behaviours through reward mechanisms and peer norms becomes more apparent with excessive use, particularly during adolescence, a critical period for identity development. Consequently, it is understood that an increase in daily social media usage is not merely a “time management issue” but leads to multidimensional erosion in developmentally critical areas such as cognitive capacity, emotional regulation, social bonding, and behavioural control. Therefore, excessive social media usage should be considered a structural risk factor for child and adolescent development.

Table 16. Findings Regarding Comparisons Between Brain Rot and Subscale Scores According to the Variable "At What Age Did You Get Your First Smartphone?"

Variable	Age at which the first smartphone was acquired	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Difference	η2
Cognitive Load	A. 8 years and under	35	2.09	1.44	4.207; p<0.05	3.498**	D>E	.009
	B. 9–11 years old	269	1.73	1.15				
	C. 12-14 years old	833	1.80	1.19				
	D. 15-17 years old	299	1.96	1.22				
	E. 18 years and older	165	1.62	1.05				
Cognitive Fatigue	A. 8 years and under	35	2.40	1.54	3.444; p<0.05	7.077**	B > D; B > E; C > E; D > E	.017
	B. 9–11 years old	269	2.64	1.31				
	C. 12-14 years old	833	2.49	1.31				
	D. 15-17 years old	299	2.42	1.25				
	E. 18 years and older	165	2.10	1.20				
Emulation	A. 8 years and under	35	2.74	1.48	1.245; p>0.05	18.197**	A > E; B > C; B > D; B > E; C > E; D > E	.044
	B. 9–11 years old	269	2.80	1.37				
	C. 12-14 years old	833	2.60	1.33				
	D. 15-17 years old	299	2.34	1.37				
	E. 18 years and older	165	1.86	1.17				
Depersonalization	A. 8 years and under	35	1.71	1.32	5.462; p<0.05	1.561	-	.004
	B. 9–11 years old	269	1.27	.77				
	C. 12-14 years old	833	1.44	.98				
	D. 15-17 years old	299	1.44	0.92				
	E. 18 years and older	165	1.33	.82				
Brain Rot	A. 8 years and under	35	2.14	1.46	5,895; p<0.05	7.189**	B > E; C > E; D > E	.018
	B. 9–11 years old	269	2.08	1.18				
	C. 12-14 years old	833	2.03	1.18				
	D. 15-17 years old	299	2.05	1.16				
	E. 18 years and older	165	1.64	1.02				

(**: p<.01; *: p<.05)

"As the age at which young people acquire their first smartphone decreases, the level of brain rot increases."

Brain rot and its cognitive load, cognitive fatigue, and emulation subscale mean scores differ significantly according to the age at which young people acquire their first smartphone (p<.05). In the cognitive load sub-dimension of brain rot, the average scale score for the cognitive load sub-dimension of brain rot among young people who acquired smartphones between the ages of 15 and 17 is significantly higher than that of young people who acquired their first mobile phones at the age of 18 and above (p<.05).

The average scale score for the cognitive fatigue sub-dimension of brain rot among young people who acquired their first smartphone at age 18 and above is significantly lower than that of those who acquired their first mobile phone at ages 9-11, 12-14, and 15-17 (p<.05). The average cognitive fatigue

subscale score for brain rot among young people who acquired their first mobile phone between the ages of 9 and 11 is significantly higher than that of those who acquired their first mobile phone between the ages of 15 and 17 (p<.05).

As a result of the two comparisons, the mean emulation subscale scores for brain rot among young people who acquired their first mobile phones between the ages of 9 and 11 are significantly higher than the means for young people who acquired their first mobile phones between the ages of 12 and 14, 15 and 14, and 18 and above (p<.05).The mean emulation subscale score for brain rot among young people who acquired their first mobile phones at age 18 and above was significantly lower than the means for young people who acquired their first phones at ages 8 and below, 13-14, and 15-17 (p<.05).

In pairwise comparisons based on the age range at which mobile phones were first acquired, there is no significant difference in the mean scores for the depersonalization subscale (p>.05).

The mean brain rot scale scores of young people who acquired their first mobile phones at 18 years and above are significantly lower than those who acquired their first mobile phones at 9-11, 12-14, and 15-17 years (p<.05).

Table 17. Findings Regarding Comparisons Between Brain Rot and Subscale Scores According to the Age Range Variable for First Membership in Social Media Platforms

Variable	Age range at first registration on social media platforms	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Difference	η2
Cognitive Load	A. 8 years and under	41	1.85	1.28	1.639; p>0.05	2.178	-	.005
	B. 9–11 years old	244	1.75	1.22				
	C. 12-14 years old	752	1.80	1.18				
	D. 15-17 years old	379	1.93	1.22				
	E. 18 years and older	184	1.66	1.07				
Cognitive Fatigue	A. 8 years and under	41	2.17	1.36	1.996; p>0.05	10.433**	A < B; B > D; B > E; C > E	.025
	B. 9–11 years old	244	2.73	1.31				
	C. 12-14 years old	752	2.53	1.31				
	D. 15-17 years old	380	2.33	1.28				
	E. 18 years and older	184	2.17	1.18				
Emulation	A. 8 years and under	41	2.59	1.52	4.347; p<0.05	17.482**	B>D; B>E; C>D; C>E; D>E	.042
	B. 9–11 years old	244	2.84	1.32				
	C. 12-14 years old	752	2.61	1.33				
	D. 15-17 years old	380	2.41	1.38				
	E. 18 years and older	184	1.89	1.20				
Depersonalization	A. 8 years and under	41	1.68	1.21	3.511; p<0.05	1.929	-	.005
	B. 9–11 years old	244	1.34	.85				
	C. 12-14 years old	752	1.39	.92				
	D. 15-17 years old	380	1.49	1.00				
	E. 18 years and older	184	1.31	0.83				
Brain Rot	A. 8 years and under	41	2.00	1.30	3.078; p<0.05	7.552**	B>E; C>E; D > E	.019
	B. 9–11 years old	244	2.18	1.17				
	C. 12-14 years old	752	2.02	1.17				
	D. 15-17 years old	379	2.02	1.18				
	E. 18 years and older	184	1.71	1.04				

(**: p<.01; *: p<.05)

"Joining social media platforms at an early age increases the level of brain rot."

Brain rot and its cognitive fatigue and emulation subscale mean scores differ significantly ($p<.05$) across age groups at the time of first joining social media platforms. There is no significant difference in the mean scores for the cognitive load and depersonalization sub-dimensions of brain rot across age groups at first joining social media platforms ($p>.05$).

As a result of the pairwise comparisons, the mean cognitive fatigue scale score of brain rot among young people who first joined social media between the ages of 9 and 11 is significantly higher than the means of young people who first joined social media under the age of 8, between the ages of 15 and 17, and over the age of 18 ($p<.05$). The mean cognitive fatigue subscale scores for brain rot among young people who first joined social media between the ages of 12 and 14 were significantly higher than those who first joined social media at age 18 and above ($p<.05$).

The mean emulation subscale scores for brain rot among young people who first joined social media at age 18 and above were significantly lower than the means for young people who first joined social media between the ages of 9-11, 15-14, and 15-17 ($p<.05$). The mean score for the emulation subscale of brain rot among young people who first joined social media between the ages of 15 and 17 is significantly lower than the means for young people who first joined social media between the ages of 9 and 11 and between the ages of 12 and 14 ($p<.05$).

The mean brain rot scale scores of young people who first joined social media at age 18 and above were significantly lower than those of young people who first joined at ages 9-11, 14-15, and 17-15 ($p<.05$).

When examining studies showing that children with smartphones and social media accounts at increasingly younger ages have multi-layered developmental consequences, it becomes clear that early exposure to smartphones and social media not only increases screen time but also becomes a structural environmental factor that reshapes the dynamics of cognitive, emotional, and social processes. The findings reveal significant impairments across cognitive functions, emotional regulation, social interaction, and behavioural patterns. Specifically, increased smartphone and social media use after the age of 8–11 has negative effects on executive functions, attention, working memory, and language development. It is known that, in this age group of users, associated with lower executive function performance, attention, and decision-making processes are significantly weakened by early exposure (Madigan et al., 2019; Hougton et al., 2018). According to Ophir et al. (2009), children who are intensely exposed to digital stimuli show significantly poorer performance in selective attention and cognitive control tasks. Particularly in these users, impaired attention may be accompanied by reduced grey matter volume in the prefrontal cortex and anterior cingulate cortex (Vaghefi et al., 2020; Wacks and Weinstein, 2021). The fast pace of digital content and constant stimulus changes can reduce the attentional sustainability of the developing child's brain. This situation can lead to reduced language development, problem-solving skills, and cognitive flexibility in children (Lillard and Peterson, 2011; Madigan et al., 2019). Excessive digital exposure, driven by early screen use, can weaken the brain's capacity to process and store information, paving the way for digital dementia (Spitzer, 2014). Some researchers working on this topic note that the fast pace of social media and digital content weakens attention sustainability, which is critical for development, and reduces children's capacity to comprehend, filter, and organise information. It is reported that over-reliance on smartphones for

information storage reduces memory retention and recall; this condition is referred to in the literature as "digital dementia." Thus, the phone ceases to be merely a tool and becomes an external extension that replaces the child's cognitive loading and memory processes (Ali et al., 2024).

Early smartphone ownership also carries significant risks for emotional development. Twenge and Campbell (2018) show that children aged 10–12 who own phones have significantly higher scores for depression, anxiety, and loneliness during adolescence. Vannucci and Ohannessian (2019) reveal that excessive social media use among young adolescents is closely associated with higher rates of anxiety and depression. The study shows that early use of social media platforms exposes children to intense social comparison, external validation-seeking, and negative content, thereby increasing emotional vulnerability. Appearance-focused social media content, in particular, can lead to impaired self-perception and low self-esteem.

Sleep patterns are also directly affected by early smartphone ownership. Carter et al. (2016) showed that even having a phone in the bedroom disrupts sleep duration and quality; using a phone before bed delays sleep onset and increases night-time awakenings. Findings by Chadwick et al. (2013) also support this relationship, showing that late-night smartphone use negatively affects both sleep quality and cognitive performance the following day. These impairments further increase emotional regulation difficulties in adolescents, paving the way for the progression of depressive mood.

Another significant consequence of owning a smartphone at an early age is risky behaviours, addictive tendencies, and behavioural imbalances. Early phone ownership increases the risk of smartphone addiction, causing compulsive usage behaviours, particularly those based on games and videos, to develop more rapidly at an early age (Kim et al., 2019). Furthermore, Dyer et al. (2024) show that adolescents who start using social media at an early age are more likely to engage in digital challenges, consume dangerous content, and exhibit risky behaviours influenced by peer pressure. Smout et al. (2021) also note that the instant reward mechanisms offered by social media platforms reinforce addiction-like cycles in children. This cycle weakens executive function processes such as focus, impulse control, and reward delay, paving the way for behavioural problems.

From a social perspective, early smartphone ownership has been found to negatively affect empathy, social cognition, and peer relationships. Just a five-day screen detox can significantly improve facial recognition and empathy skills in children aged 6–12 (Uhls et al., 2014). Puukko et al. (2020) support this finding, stating that early exposure to social media reduces empathy and social interaction skills, which are associated with social withdrawal, loneliness, and alienation. Digital interaction, which replaces face-to-face communication, disrupts the natural development of social skills. Related to the weakening of natural developmental processes, early exposure to social media among adolescents can undermine authentic identity development, leading to inconsistent self-perception and identity confusion (Charmaraman et al., 2021). This identity confusion and inconsistent sense of self in individuals who show addiction at an early age can lead to mental health problems such as emotional sensitivity, psychological distress, and depression (Nagata et al., 2025; Magis-Weinberg et al., 2021). In fact, considering the effects of social media use and exposure to phone screens at an early age, early smartphone ownership appears to be a powerful risk factor that affects cognitive, emotional, social, and behavioural development in multiple ways. The age at which a phone is given becomes a structural variable that shapes the nature of the child's digital behaviour in later years; it particularly increases the likelihood of problematic use, sleep disturbances, emotional instability, and social withdrawal, even at an early age.

Table 18. Findings Regarding Comparisons Between Brain Rot and Subscale Scores According to the Frequency of Social Media Use During Time Spent with Family or Friends

Variable	Frequency of social media use during time spent with family or friends	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Differences	η2
Cognitive Load	A. No one in the environment uses social media	67	1.55	1.08	2.233; p>0.05	14.074**	A < C; A < D: A < E; B < C; B < D; B < E	.034
	B. Those present in the environment rarely use social media.	438	1.61	1.08				
	C. Those in the environment occasionally use social media.	695	1.83	1.18				
	D. Those present in the environment frequently use social media.	316	2.00	1.25				
	E. Those present in the environment always use social media.	84	2.12	1.42				
Cognitive Fatigue	A. No one in the environment uses social media	67	1.97	1.29	2.016; p>0.05	22.025**	A < C; A < D; A < E; B < C; B < D, B < E; C < D; C < E	.052
	B. Those present in the environment rarely use social media.	438	2.18	1.26				
	C. Those in the environment occasionally use social media.	696	2.46	1.27				
	D. Those present in the environment frequently use social media.	316	2.80	1.31				
	E. Those present in the environment always use social media.	84	3.06	1.27				
Emulation	A. No one in the environment uses social media	67	1.69	1.09	1.748; p>0.05	23.029**	A < B; A < C; A < D; A < E; B < C; B < D; B < E; C < D; C < E	.055
	B. Those present in the environment rarely use social media.	438	2.32	1.32				
	C. Those in the environment occasionally use social media.	696	2.49	1.34				
	D. Those present in the environment frequently use social media.	316	2.85	1.32				
	E. Those present in the environment always use social media.	84	3.11	1.41				
Depersonalization	A. No one in the environment uses social media	67	1.36	0.96	8.385; p<0.05	14.282**	A < D; A < E; B < C; B < D; B < E; C < D; C < E	.035
	B. Those present in the environment rarely use social media.	438	1.28	.80				
	C. Those in the environment occasionally use social media.	696	1.37	.89				
	D. Those present in the environment frequently use social media.	316	1.56	1.03				
	E. Those present in the environment always use social media.	84	1.82	1.32				
Brain Rot	A. No one in the environment uses social media	67	1.63	1.04	2,050; p>0.05	27,319**	A < B; A < C; A < D; A < E; B < C; B < D; B < E; C < D; C < E	.064
	B. Those present in the environment rarely use social media.	438	1.75	1.09				
	C. Those in the environment occasionally use social media.	695	2.00	1.13				
	D. Those present in the environment frequently use social media.	316	2.27	1.22				
	E. Those present in the environment always use social media.	84	2.69	1.27				

(**: p<.01; *: p<.05)

"Staying away from social media during time spent with family or friends protects young people from brain rot."

The difference between brain rot and its subscale mean scores, by social media usage frequency during time spent with family or friends, was tested using an ANOVA. The statistical analyses revealed a significant difference between brain rot and its subscale mean scores based on the variable of social media usage frequency during time spent with family or friends ($p<.05$).

The cognitive load subscale mean scores for brain rot among young people who did not use social media in their social environments were significantly lower than those of young people who used social media occasionally, frequently, or always in their environments ($p<.05$). The cognitive load subscale score average for brain rot among young people in social environments where individuals rarely use social media is significantly lower than that of young people in environments where social media is used occasionally, frequently, and always ($p<.05$).

The average cognitive fatigue subscale score for brain rot among young people in social environments where social media is not used is significantly lower than that of young people in environments where social media is used occasionally, frequently, and constantly ($p<.05$). The average cognitive fatigue scale score for brain rot among young people in social environments where social media is rarely used is significantly lower than that of young people in environments where social media is used occasionally, frequently, and constantly ($p<.05$). The average cognitive fatigue scale score for brain rot among young people in social environments where social media is used occasionally is significantly lower than that of young people in environments where social media is used frequently and constantly ($p<.05$).

When examining pairwise comparisons for the emulation subscale of brain rot, the mean emulation subscale scores for brain rot among young people in social environments where social media is not used are significantly lower than those of young people in environments where social media is used rarely, occasionally, frequently, and constantly ($p<.05$). The mean scale score for brain rot emulation among young people in social environments where social media is rarely used was significantly lower than that of young people in environments where social media is used occasionally, frequently, and always ($p<.05$). The average brain rot emulation scale score of young people in social environments where social media is used occasionally is significantly lower than that of young people in environments where social media is used frequently and always ($p<.05$).

When examining pairwise comparisons for the depersonalization subscale of brain rot, the average depersonalization subscale score for brain rot among young people in social environments where social media is not used is significantly lower than that of young people in environments where social media is used frequently and always ($p<.05$). The average scale score for apathy in brain rot among young people in social environments where social media is rarely used is significantly lower than that of young people in environments where social media is used occasionally, frequently, and always ($p<.05$). The average brain rot depersonalization scale score of young people in social environments where social media is used occasionally is significantly lower than that of young people in environments where social media is used frequently and always ($p<.05$).

In binary comparisons related to brain rot, the average brain rot scale score of young people in social environments where social media is not used is significantly lower than that of young people in environments where social media is used rarely, occasionally, frequently, and always (p<.05). The average brain rot scale scores of young people in social environments where social media is rarely used are significantly lower than those of young people in environments where social media is used occasionally, frequently, and always (p<.05). The average brain rot scale score of young people in social environments where social media is used occasionally is significantly lower than that of young people in environments where social media is used frequently and always (p<.05).

Table 19. Findings Regarding Comparisons Between Brain Rot and Subscale Scores According to the Variable of Monthly GB Internet Package Ownership on Smartphones

Variable	Monthly GB internet package on smartphones	n	$\overline{X}$	ss	Levene's Test; p	F	Intergroup Difference	η2
Cognitive Load	A. 0-5 GB	181	1.93	1.22	0.588; p>0.05	2.213	-	.007
	B. 6–10 GB	330	1.70	1.14				
	C. 11–15 GB	213	1.71	1.15				
	D. 16–20 GB	344	1.82	1.19				
	E. 21–25 GB	164	1.79	1.15				
	F. 26 GB and above	368	1.90	1.23				
Cognitive Fatigue	A. 0-5 GB	181	2.45	1.33	1.833; p>0.05	4.557**	B < E; B < F	.014
	B. 6–10 GB	330	2.25	1.32				
	C. 11–15 GB	213	2.38	1.28				
	D. 16–20 GB	344	2.42	1.28				
	E. 21–25 GB	165	2.64	1.26				
	F. 26 GB and above	368	2.67	1.28				
Emulation	A. 0-5 GB	181	2.10	1.28	1.749; p>0.05	9.651**	A < C; A<D; A < E A < F; B < E; B<F	.029
	B. 6–10 GB	330	2.33	1.34				
	C. 11–15 GB	213	2.46	1.33				
	D. 16–20 GB	344	2.55	1.36				
	E. 21–25 GB	165	2.83	1.25				
	F. 26 GB and above	368	2.74	1.39				
Depersonalization	A. 0-5 GB	181	1.31	.81	2.133; p>0.05	2.912*	B<F	.009
	B. 6–10 GB	330	1.32	.85				
	C. 11–15 GB	213	1.43	.96				
	D. 16–20 GB	344	1.41	.96				
	E. 21–25 GB	165	1.48	.99				
	F. 26 GB and above	368	1.49	.99				
Brain Rot	A. 0-5 GB	181	2.01	1.17	1.118; p>0.05	5.434**	B < E; B < F; C < F	.017
	B. 6–10 GB	330	1.84	1.11				
	C. 11–15 GB	213	1.89	1.18				
	D. 16–20 GB	344	1.99	1.16				
	E. 21–25 GB	164	2.13	1.17				
	F. 26 GB and above	368	2.18	1.20				

(**: p<.01; *: p<.05)

"Having a larger internet package increases the risk of brain rot."

The significance of the difference in mean scale scores for brain rot and its subdimensions, by the amount of monthly GB internet package on young people's smartphones, was tested using an ANOVA. According to the ANOVA test results, the mean scores for the cognitive fatigue, emulation, and insensitivity subdimensions of brain rot and its subdimensions differ significantly ($p<.05$). No significant difference was found in the mean scale scores for the cognitive load sub-dimension of brain rot based on the variable of how many GB of monthly internet package young people have on their smartphones ($p>.05$).

The cognitive fatigue scale mean scores for brain rot among young people with monthly 6-10 GB mobile phone packages were significantly lower than those with 21-25 GB and 26 GB or more packages ($P<.05$).

The mean scale scores for the brain rot emulation subscale among young people with 0-5 GB mobile phone data packages were significantly lower than those with 11-15 GB, 16-20 GB, 21-25 GB, and 26 GB or more data packages ($p<.05$).

The mean scale score for the depersonalization subscale of brain rot among young people with 6-10 GB mobile phone internet packages was significantly lower than that of young people with 26 GB and above internet packages ($p<.05$).

The average brain rot scale score of young people with 6-10 GB mobile phone internet packages is significantly lower than that of young people with 21-25 GB and 26 GB and above internet packages ($p<.05$). The average brain rot scale score of young people with 11-15 GB mobile phone internet packages is significantly lower than that of young people with 26 GB and above internet packages ($p<.05$).

Table 20. Ranking of Variables Affecting the Cognitive Load Sub-Dimension of Brain Rot

Variable	Level of influence on cognitive load (η^2)
1. Time spent using social media applications during the day (Weekdays)	.073
2. Frequency of social media use during time spent with family or friends	.034
3. Type of educational institution attended	.022
4. The time of day when social media is used most frequently	.016
5. Grade level	.012
6. Age at which they first obtained a smartphone	.009
7. University entrance exam subject area	.008
8. Monthly data allowance on your smartphone in GB	.007
9. Age Range	.006
10. Gender	.005
11. Age at first registration on social media platforms	.005
12. Father's educational level	.003
13. Most frequently used social media application	.002
14. Mother's educational level	.001

Fourteen categorical variables affecting the cognitive load sub-dimension of the "Brain Rot" phenomenon among young people were examined, and their effect sizes (η^2) were ranked from highest to lowest. The findings indicate that the most effective variable in explaining cognitive load is the amount of time spent using social media applications during the day (weekdays) ($\eta^2 = .073$). This finding indicates that the time individuals spend on social media platforms increases the load on their cognitive processing capacity and may therefore lead to conditions such as "cognitive exhaustion" or "inattention".

The second variable is the frequency of social media use during time spent with family or friends ($\eta^2 = .034$). This result reveals that social media use, when intensively maintained not only as an individual activity but also during social interactions, can increase cognitive distraction and mental fatigue.

Third is the type of educational institution attended ($\eta^2 = .022$). This finding suggests that students' educational environments (e.g., academic discipline, school type, or access to digital environments) interact with their social media habits, and that this interaction is reflected in their cognitive load levels.

Fourth is the time of day when social media is used most frequently ($\eta^2 = .016$), and fifth is class level ($\eta^2 = .012$). These variables indicate that the time of day when social media use is most intense, and the student's educational level, affect cognitive exhaustion. Intensive social media use, particularly in the evening or at night, can negatively affect the mental recovery process.

Sixth in the ranking is the age at which the individual acquired their first smartphone ($\eta^2 = .009$). It can be assumed that individuals exposed to technology at an early age experience greater cognitive load due to reduced attention spans and a state of constant arousal.

This is followed by university entrance exam type/field ($\eta^2 = .008$), monthly internet package amount ($\eta^2 = .007$), age range ($\eta^2 = .006$), gender ($\eta^2 = .005$), and age of first membership to social media platforms ($\eta^2 = .005$). Although the effects of these variables are small, an individual's access capacity and the duration of online experience may indirectly affect cognitive load.

Finally, the father's educational level ($\eta^2 = .003$), the most frequently used social media application ($\eta^2 = .002$), and the mother's educational level ($\eta^2 = .001$) are also significant. These findings indicate that parents' educational level and the preferred social media platform play only a limited role in explaining young people's cognitive load levels.

Table 21. Ranking of Variables Influencing the Cognitive Fatigue Sub-Dimension of Brain Rot

Variable	Level of influence on cognitive fatigue (η^2)
1. Time spent using social media applications during the day (Weekdays)	.114
2. Frequency of social media use during time spent with family or friends	.052
3. Age at which first joined social media platforms	.025
4. The time of day when social media is used most frequently	.023
5. Type of educational institution attended	.021
6. Most frequently used social media application	.018
7. Age at which they first obtained a smartphone	.017
8. Monthly data allowance on your smartphone	.014
9. Grade level	.010
10. Age range	.007
11. Gender	.005
12. University entrance exam score type field	.005
13. Father's educational level	.004
14. Mother's educational level	.001

The study examined 14 categorical variables affecting the Cognitive Fatigue sub-dimension of the "Brain Rot" phenomenon among young people. The effect sizes (η^2) of these variables were calculated and ranked from highest to lowest.

According to the findings, the most effective variable in explaining cognitive fatigue scores was the amount of time spent using social media applications during the day (weekdays) ($\eta^2 = .114$). This finding shows that the longer individuals spend on social media, the higher their levels of mental fatigue, distraction and cognitive exhaustion.

The second variable is the frequency of social media use during time spent with family or friends ($\eta^2 = .052$). This result shows that individuals' tendency to turn to social media even during social interactions divides their social attention capacity, leading to inefficient use of mental resources and increased feelings of cognitive fatigue.

The third variable is the age at which individuals first joined social media platforms ($\eta^2 = .025$). This finding indicates that individuals introduced to social media at an early age may experience greater long-term exhaustion of attention and cognitive control processes.

The fourth variable is the time of day when social media is used most ($\eta^2 = .023$), and the fifth variable is the type of educational institution attended ($\eta^2 = .021$). These results indicate that social media use, particularly in the evening or at night, hinders mental recovery; they also suggest that digital usage cultures in different types of schools (e.g., private, state, or religious institutions) may influence cognitive fatigue.

The sixth most frequently used social media application ($\eta^2 = .018$) and the age at which the first smartphone was acquired ($\eta^2 = .017$) are in seventh place. These variables reveal that individuals' cognitive load may vary depending on the structure of the platforms they use (e.g., short videos, news feeds, sharing intensity) and the age at which they first accessed technology.

This is followed by monthly internet package amount (η^2 = .014), class level (η^2 = .010), age range (η^2 = .007), gender (η^2 = .005), and university entrance exam score type/field (η^2 = .005). Although the effect sizes of these variables are small, individuals' digital access opportunities and academic intensity may partially affect cognitive fatigue levels.

Father's educational level (η^2 = .004) and mother's educational level (η^2 = .001) rank last. These findings indicate that parents' educational level does not significantly affect cognitive fatigue.

Overall, it is observed that Generation Z youths' "Brain Rot" cognitive fatigue scores vary depending on the time spent on social media, social media use during social interaction, and the age of first exposure to technology; conversely, the effects of demographic variables (age, gender, parental education) are quite limited. The findings indicate that increased time spent in social media environments depletes young people's mental energy, leading to negative effects on attention, concentration, and cognitive flexibility.

Table 22. Ranking of Variables Affecting the Emulation Sub-Dimension of Brain Rot

Variable	Level of influence on emulation (η^2)
1. Time spent using social media applications during the day (Weekdays)	.160
2. Most frequently used social media application	.055
3. Frequency of social media use during time spent with family or friends	.055
4. Age at which the first smartphone was obtained	.044
5. Age at which one first joined a social media platform	.042
6. The monthly GB allowance for your mobile data plan on your smartphone	.029
7. Age Range	.023
8. Grade level	.022
9. Type of educational institution attended	.016
10. Time of day when social media is used most frequently	.011
11. University entrance exam score category	.009
12. Gender	.007
13. Father's educational level	.005
14. Mother's educational level	.001

The study shows that the variable most affecting the emulation sub-dimension of the brain rot scale among young people is "the amount of time spent using social media applications during the day (weekdays)" (η^2 = .160). This value indicates a large effect size. Consequently, as individuals spend more time on social media, the behaviours of modelling, imitating, and emulating others in creating a digital identity also increase significantly.

The variables ranked second and third were "most frequently used social media application" (η^2 = .055) and "frequency of social media use during time spent with family or friends" (η^2 = .055). These findings show that the type of platform individuals use and the level of media interaction in the social context can influence the direction and intensity of emulation behaviours. In particular, visual and trend-focused platforms (e.g., Instagram, TikTok) can reinforce emulation behaviours.

Fourth place was taken by "age of first smartphone acquisition" ($\eta^2 = .044$) and fifth place by "age of first social media platform membership" ($\eta^2 = .042$), both of which had a medium effect size. These findings reveal that individuals who encounter social media at an early age internalise digital models more readily and may be more inclined to imitate during self-development.

The sixth factor, "monthly GB allowance of internet package" ($\eta^2 = .029$), the seventh factor, "age range" ($\eta^2 = .023$), and the eighth factor, "class level" ($\eta^2 = .022$), showed low-to-moderate effects. These findings indicate that opportunities for digital access and age-related maturity levels can partially influence emulation behaviour.

Variables with lower effect levels included "type of institution attended" ($\eta^2 = .016$), "time of day when social media is used most" ($\eta^2 = .011$), "type of university entrance score" ($\eta^2 = .009$), "gender" ($\eta^2 = .007$), "father's educational level" ($\eta^2 = .005$), and "mother's educational level" ($\eta^2 = .001$). The low effect levels of these variables indicate that emulation tendencies are more strongly related to digital experience intensity and media usage habits than to demographic factors.

Table 23. Ranking of Variables Affecting the Depersonalization Sub-Dimension of Brain Rot

Variable	Level of influence on Depersonalization (η^2)
1. Time spent using social media applications during the day (Weekdays)	.061
2. Frequency of social media use during time spent with family or friends	.035
3. Type of educational institution attended	.020
4. The time of day when social media is used most frequently	.020
5. Grade level	.018
6. Age range	.015
7. Monthly data allowance on your smartphone	.009
8. University entrance exam score type field	.006
9. Gender	.005
10. Age at first registration on social media platforms	.005
11. Age at which first acquired a smartphone	.004
12. Mother's educational level	.001
13. Father's education level	.001
14. Most frequently used social media application	.001

The study found that the variable most affecting the depersonalization sub-dimension of the brain rot scale among young people was "time spent using social media applications during the day (weekdays)" ($\eta^2 = .061$). As individuals spend more time on social media, their tendency to develop emotional indifference or apathy towards the content they encounter in the digital environment (e.g., violence, negativity, other people's problems) also increases significantly.

The second most influential variable was "frequency of social media use during time spent with family or friends" ($\eta^2 = .035$). This finding suggests that even during face-to-face social interactions, being drawn into the digital world ("phubbing") can trigger depersonalization to real-world social contexts and relationships.

Sharing third and fourth place were "type of educational institution" ($\eta^2 = .020$) and "time of day when social media is used most" ($\eta^2 = .020$), closely followed by "class level" ($\eta^2 = .018$) and "age range" ($\eta^2 = .015$) variables. These findings reveal that the educational environment, the time period during which social media is used, and the level of maturity associated with age may have a limited but statistically significant effect on depersonalization.

Variables with lower effect levels include "the monthly GB allowance of the internet package on one's smartphone" ($\eta^2 = .009$), "university entrance exam score type" ($\eta^2 = .006$), "gender" ($\eta^2 = .005$), and "age at first registration on social media platforms" ($\eta^2 = .005$).

At the bottom of the ranking are variables such as "age at which the first smartphone was acquired" ($\eta^2 = .004$), "mother's education level" ($\eta^2 = .001$), "father's education level" ($\eta^2 = .001$) and "most frequently used social media application" ($\eta^2 = .001$).

Table 24. Ranking of Variables in Brain Rot

Variable	Effect Level on Brain Rot (η^2)
1. Time spent using social media applications during the day (Weekdays)	.147
2. Frequency of social media use during time spent with family or friends	.064
3. Time of day when social media is used most frequently	.021
4. Age at which one first joined social media platforms	.019
5. Age at which they first obtained a smartphone	.018
6. Most commonly used social media application	.017
7. Monthly data allowance on your smartphone	.017
8. Type of educational institution attended	.016
9. Grade level	.013
10. University entrance exam score type field	.009
11. Age Range	.008
12. Gender	.006
13. Father's educational level	.004
14. Mother's educational level	.001

"The amount of time spent using social media applications during the day is the most significant factor affectingbrain deterioration."

Research findings indicate that the variable most affecting young people's brain rot levels is "the amount of time spent using social media applications during the day (weekdays)" ($\eta^2 = .147$). This finding shows that as the time individuals spend on social media increases, so do attention deficit, superficial thinking, decreased critical thinking, and emulation-based digital behaviours. In other words, spending a long time on social media significantly increases the risk of brain rot.

The second variable is "frequency of social media use during time spent with family or friends" ($\eta^2 = .064$). This result shows that turning to social media, even during social interactions, causes

individuals to distance themselves from real social interaction and that excessive engagement with digital content negatively affects cognitive processes.

The third variable is "the time of day when social media is used most frequently" ($\eta^2 = .021$). This finding suggests that the time of media use (e.g., use at night or early in the morning) may be associated with brain fatigue, disrupted sleep patterns, and decreased mental performance.

The fourth and fifth variables are "age at first registration on social media platforms" ($\eta^2 = .019$) and "age at first access to a smartphone" ($\eta^2 = .018$). This suggests that individuals who are exposed to social media at an early age acquire digital habits more permanently during cognitive development, and therefore, their brain rot levels may be higher.

The sixth and seventh variables are "most frequently used social media application" ($\eta^2 = .017$) and "monthly GB amount of internet package on smartphone" ($\eta^2 = .017$). These findings show that the type of platform used (e.g., visual, short, content-focused applications) and internet access capacity can fuel brain rot by increasing the rate of cognitive consumption and exposure to superficial information.

Subsequently, the type of institution attended ($\eta^2 = .016$), class level ($\eta^2 = .013$), university entrance exam type/field ($\eta^2 = .009$), age range ($\eta^2 = .008$), and gender ($\eta^2 = .006$) follow. Although the effect sizes of these variables are small, it can be said that different school types, age groups, and academic fields may have partial effects on digital habits.

Father's educational level ($\eta^2 = .004$) and mother's educational level ($\eta^2 = .001$) are ranked last. These findings reveal that parents' educational level has no significant effect on "brain rot".

FINAL WORDS

"Basically, boredom is the new IQ.
(Boredom is the new IQ.)"

This research was not conducted to reject the opportunities offered by the digital age or to blame technology entirely. On the contrary, it was an effort to understand the effects of this reality on the human mind, emotions, and relationships, accepting that the digital world is now an inevitable reality. Because the issue is not owning technology; it is how we relate to technology. In the digital age, attention, time and mental depth have become the scarcest resources. Constantly exposed to stimuli in life, within digital ecosystems that normalise speed and superficiality, reacting rather than thinking, consuming rather than making sense, is becoming increasingly commonplace. In this context, brain rot should not be seen merely as an individual weakness or a generational problem. On the contrary, it is a structural phenomenon closely related to the spirit of the age. However, the existence of this phenomenon does not mean it is inevitable.

The findings discussed throughout this research show that brain rot accelerates under certain conditions, but that mental resilience can be strengthened through conscious awareness, self-regulation, and meaningful pursuits. The mind is not a passive receiver; it is a capacity that can be trained, protected and restructured. Surviving in the digital world with a sound mind is not about consuming more content, but about being more selective, slower and more conscious. At this point, responsibility does not lie solely with individuals. Families, educational institutions, policymakers, and technology producers collectively determine the nature of children's and young people's relationship with the digital world. Therefore, the solution is not one-dimensional. There is a need for guidance as much as for prohibitions, meaningful alternatives as much as for restrictions, and hopeful approaches as much as for criticism.

Ultimately, the findings of this research aim not to provide definitive prescriptions but to prompt the right questions:

How dependent am I?

How much should I use?

How can I protect myself?

In fact, all that needs to be said is that "protecting mental health in the digital age is not about staying away from technology, but about establishing a conscious distance from it." This distance is the space where thought can breathe, emotions can be regulated, and the individual can reconnect with themselves. If the findings of this research prompt the reader to pause and reflect, even for a moment, and if it can create a small space for awareness within the digital flow, then it has achieved its purpose.

In this context, it is evident that the most undervalued yet most vital mental capacity in the digital age is the ability to be bored. A mind that is constantly stimulated, immediately filling every void and expected to never lose focus, may appear productive and alert at first glance, but in reality, it gradually loses its capacity for deep thinking, internal organisation, and meaning-making. Yet throughout history, the human mind has developed in fits and starts. Thought, curiosity, and creativity have often flourished in the absence of external stimuli. Therefore, in this digital age, boredom should not be seen as a passive inadequacy but rather as a form of conscious resistance. Not turning to content that offers instant gratification, not reacting to every notification, and resisting the compulsion to keep the mind constantly occupied are emerging as intellectual privileges today. In this sense, mental strength no longer lies in the capacity to process more stimuli simultaneously, but in the ability to select, postpone, and reject stimuli.

Considering the intensity our minds experience during the day, we realise that a mind that can become bored is not hasty. This mind does not consume everything immediately; it prefers to construct meaning rather than take it ready-made. Therefore, in our era, mental resilience can be observed in individuals who can maintain their focus, remain in a state of emptiness, and resist the superficiality imposed by speed. Deep thinking, critical reasoning, and emotional maturity can only develop within this tediousness. At this point, it can be said that at the heart of protecting mental health in the digital age lies a capacity that is often overlooked but is extremely critical. This capacity is the will to manage attention deliberately and to choose not to react immediately to stimuli. In individuals constantly exposed to stimuli, attention gradually becomes a passive process guided by external cues, thereby weakening self-regulation and cognitive control. However, healthy cognitive functioning is possible through sustained, directed, and, when necessary, withdrawn attention. Not immediately responding to stimuli, being able to manage boredom, and delaying the pursuit of instant gratification demonstrate that fundamental psychological processes such as attention control, impulse inhibition, and cognitive flexibility are functioning healthily. When these skills weaken, individuals not only consume more content but also become more easily distracted, tire more quickly, and become more emotionally reactive. This is because a constantly occupied mind begins to delegate decision-making and self-regulation processes to external systems. In contrast, individuals who can maintain their attention and remain in a state of emptiness can preserve their internal regulation skills; they can separate thought from superficial reactions and develop deeper, more coherent, and more meaningful cognitive processes.

This psychological framework becomes even clearer when viewed through the lens of executive functions. Inhibition, working memory, and cognitive flexibility, which are the fundamental determinants of mental resilience in the digital age, determine an individual's capacity to regulate their attention, suppress their impulses, and sustain their behaviour in line with their goals. Constant exposure to digital stimuli, particularly in social media environments that offer instant gratification and rapid feedback, challenges the functional integrity of this system, directing the individual towards reactive, fragmented, and superficial cognitive patterns.

The ability to pause automatic responses and resist immediate urges is one of the executive functions most rapidly lost in digital environments. Behaviours such as immediately checking notifications, being unable to stop the flow, and being unable to postpone content indicate that this ability is increasingly being disabled by external systems. Similarly, our brain's working memory is also deteriorating under constant content transitions and multiple digital tasks. This situation makes it difficult to retain, relate to, and process information deeply. Cognitive flexibility is weakened within superficial, monotonous content cycles; the individual's capacity to develop diverse perspectives and change cognitive strategies is limited. These negative effects of social media manifest as cognitive fatigue and cognitive load. This is because the mind is unable to process and make sense of the rapid information it acquires due to rapid stimuli. In this context, the moments of pause that individuals need to experience, i.e., periods of time when external stimuli are consciously limited, are not passive in terms of executive functions; they have a restorative and regulatory function. Being able to respond to stimuli with a delay, tolerate boredom, and avoid pursuing instant gratification will reduce cognitive fatigue. Therefore, mental strength in the digital age is more closely related to the capacity to maintain cognitive control in the face of stimuli than to the ability to withstand more stimuli.

At this point, protection against brain rot is possible not by completely excluding digital tools, but through psychological adjustments that consciously support executive functions. Delaying notifications, postponing instant content consumption, and learning not to respond automatically to every stimulus reactivates impulse control capacity and strengthens mental control. Activities requiring prolonged reading, writing, problem-solving, and analytical thinking support working memory and help rebuild cognitive continuity. Additionally, engaging with different perspectives, art, nature, physical movement, and face-to-face social interactions strengthens cognitive flexibility, distancing the mind from one-dimensional thinking patterns. Periods of time spent without any stimuli contribute to the reorganisation of cognitive processes, the activation of internal thought processes, and the preservation of mental integrity. In this context, protection from brain rot is not a simple matter of "reducing usage" that can be reduced to individual willpower. The real issue is to build a lifestyle that puts mental control back in the hands of the individual in the face of digital stimuli, supports executive functions, structures attention, and shapes personality in line with the individual's inherent thought structure.

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RESUME

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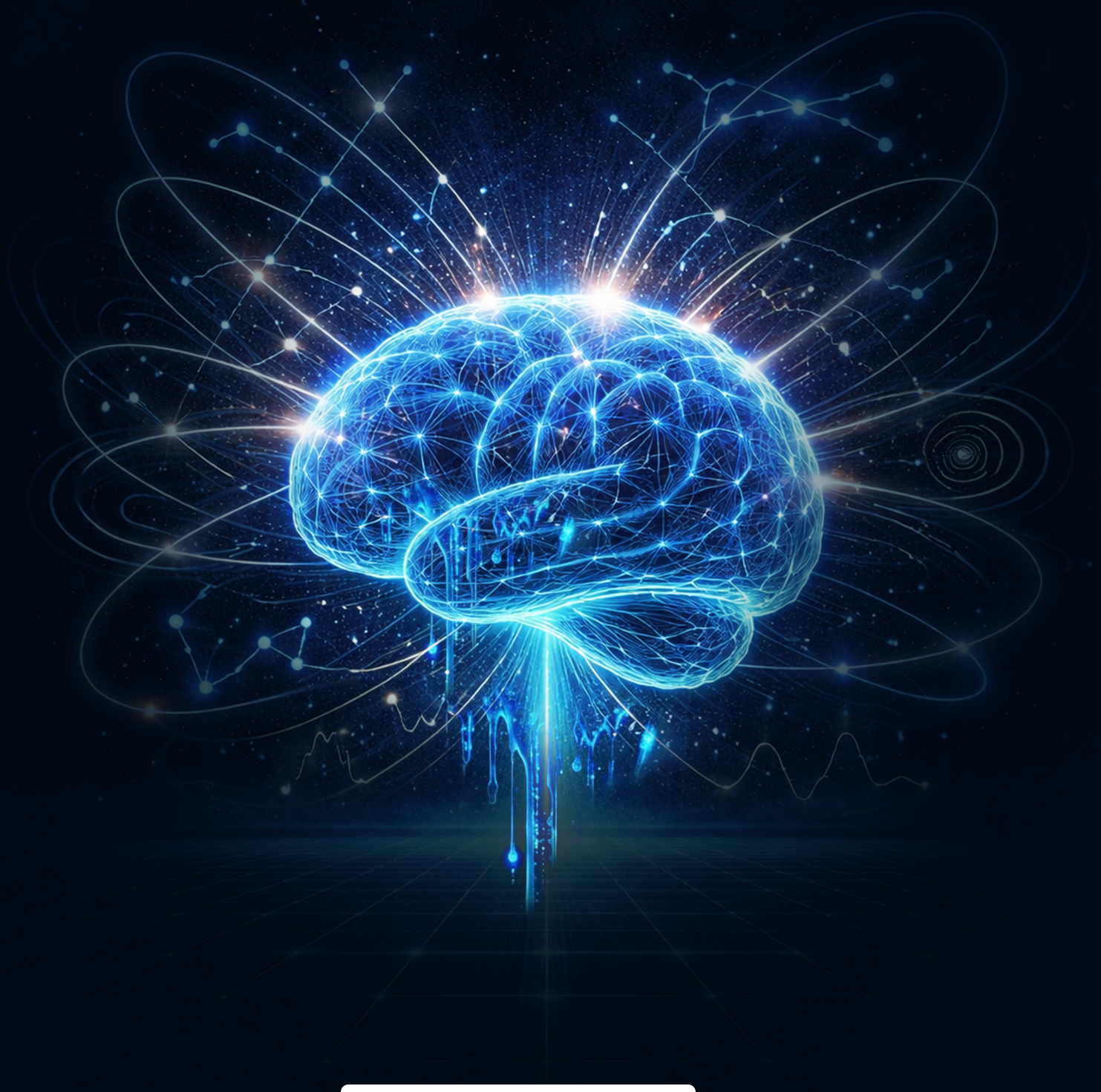

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