photo: Kristína Krčová

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Persistence in Consuming Frightening and Fascination-Inducing Content via Online Digital Devices among School-Age Children

ABSTRACT

In the theoretical-empirical study, we focus on the phenomenon of school-age children consuming content that is both scary and fascinating. The theoretical part aims to identify and analyse factors supporting the persistence in consuming scary-fascinating content mediated by online digital devices in school-age children. The empirical part aims to determine the frequency of repeated consumption of scary-fascinating content mediated by online digital devices in younger school-age children. In the pilot phase of the research, we found that the consumption of scary-fascinating content in school-age children represents a complex process that is supported by a combination of neurobiological, psychological and environmental factors. Based on a questionnaire with (N=95) respondents aged (AM=9.95 years), we found that younger school-age students view scary content online and persist in viewing it despite feeling fear. In the discussion, we explore the potential risks and negative impacts of fictitious safety threats and provide recommendations for parents and educators in the area of primary prevention.

KEY WORDS

Fear. Reward System. Scary-Fascinating Content. School-Age Children.

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1 Introduction

Fear is a cognitively constructed, conscious experience related to the processing of threats (LeDoux, 2015). Natural fear is correct; it represents a limit and a defence mechanism against the boundless penetration of the outside world. Fear serves as a survival mechanism, helping individuals avoid potentially dangerous situations. Feeling fear of the unknown in a child signals the ability to differentiate the outside world and distinguish the meaning of its partial components, not all of which represent safety (Vágnerová, 2000).

The presence or absence of a fear of life-threatening events fundamentally determines how the human brain learns and processes experiences. The traditional understanding of fear processing is based on two main brain pathways. In conditions of safety, a longer cortical pathway is activated, allowing for the conscious processing of information, a full analysis of the situation, and a rational assessment of the degree of danger. Meanwhile, memory traces are stored in the hippocampus as ordinary experiences without a strong emotional charge. The situation changes if learning occurs under conditions of stress, fear, or real-life-threatening events. In such cases, the amygdala circuit is triggered in parallel with the cognitive system in the neocortex (LeDoux, 2015). The shorter thalamic-amygdalar pathway prioritises automatic, instinctive fear reactions over conscious processing. The instinct of self-preservation and instinctive behaviour emerge (LeDoux, 1992). Thanks to adrenaline and cortisol, memory traces are stored more deeply and selectively for emotionally significant events, allowing the brain to prepare for similar threats in the future.

The study primarily focuses on fear associated with virtual environments in which individuals engage with content that is both frightening and fascinating. Creepy-fascinating content represents stimuli that combine elements of horror and attraction. The content is available through online digital devices in the form of horror games, scary videos, and stories called 'creepy' challenges, as well as meme images with scary themes, on platforms popular with child consumers, such as YouTube, TikTok, Reddit, Discord, and Amino. Children can watch fear-inducing content, such as Skibidi-toilet, Huggy Wuggy, SCP Foundation, Slenderman, Siren Head, Momo, Cartoon Cat, Backrooms and others. Phenomena such as "creepy fascination" or "disturbing fascination" highlight the paradoxical attraction to disturbing objects or phenomena among child online consumers. Children are exposed to such stimuli thanks to the easy accessibility of digital devices with internet connections and the extensive offer of online content. The processing of fear in the real world differs significantly when transferred to the online digital environment. It is where the paradox arises, which is the central point of the theoretical study. The ability to control fear acquired in a virtual environment has positive aspects on the one hand; for example, it represents one of the possibilities in exposure therapy, where the client is repeatedly exposed to fear-inducing stimuli in controlled conditions.

On the other hand, it is questionable to what extent repeated exposure to fear-inducing content (such as frightening yet fascinating content in uncontrolled conditions) poses a risk to the child consumer. It is also questionable how repeated exposure to fear-inducing content is related to the ability of children to detach themselves from the consumption of this content and to their psyche. This fact is the subject of investigation in our study.

1.1 The Way the Human Brain Processes Stimuli about the Perception of a Life Threat

Neurobiological information processing in the human brain occurs through complex neural circuits, particularly in the limbic system, where structures such as the amygdala, hippocampus, and prefrontal cortex play a crucial role. The regulator, the prefrontal cortex, evaluates information in a situation to determine whether it is threatening or safe. It then determines how the memory trace will be stored. We distinguish two main neural pathways that transmit information:

1. In the learning process, when we consider natural conditions that guarantee safety, the cortical pathway is used. Due to the way information is processed, this pathway is longer (slower) and allows for cognitive processing of the threat. It is active mainly in conditions where there is no immediate physiological risk of danger or when a more detailed analysis is needed. Information from the thalamus is transferred to the sensory areas of the cerebral cortex (cortex), where it is consciously processed, analysed in detail and interpreted. Suppose the cortex determines that it is possible to process the information rationally. In that case, it is transferred and stored in the hippocampus, which integrates contextual information and memory, and in the prefrontal cortex, which is responsible for rational thinking, planning, and behavioural control. Memory traces are stored in this pathway as ordinary experiences without a strong emotional charge, unless fear occurs in the context of a real threat to life.
2. However, if learning takes place in conditions where the feeling of safety is not guaranteed, a different approach to acquiring knowledge during the learning process emerges. The regulator, or filter, the prefrontal cortex activates a different memory pathway than the hippocampus. The prefrontal cortex will reduce its activity. Conscious fear is a product of cognitive systems in the neocortex that function in parallel with the amygdala circuit (LeDoux, 2015). LeDoux (1992) and Duvarci et al. (2011) state that when the brain perceives something as potentially dangerous, the amygdala is activated. The amygdala circuit, as one of the components of the threat system, enables the brain to detect and respond to threats, triggering behavioural and physiological responses, as specified by LeDoux (2015). Sensory information is processed from the thalamus and then directly transferred to the amygdala. Thus, the activity of the amygdala increases, triggering a faster thalamic-amygdalar pathway, which is shorter, allowing the brain to process stimuli before they reach the cortex via the longer pathway. It is responsible for the immediate, instinctive reaction to fear, typical of real and immediate threats. As stated by LeDoux (1992), the instinct for self-preservation and instinctive behaviour, which are evolutionary factors of human behaviour, come into play. With strong fear, one of the three main biological reactions to danger is triggered: fight, flight, or freeze. Specifically, the central nucleus of the amygdala (CeA) is responsible for motor reactions to fear, including freezing (Duvarci et al., 2011). Although this reaction is fast and necessary for survival, it may not always be accurate because the information is only partially processed.

The amygdala activates a chain of processes in the body, specifically the sympathoadrenal system, where the adrenal glands, particularly the medulla, release adrenaline, also known as epinephrine (Goldstein, 2010). This release activates a rapid emotional and physiological response to fear. Adrenaline helps to focus attention on key details and speed up information processing. When a person is exposed to a threatening stimulus for an extended period, the hypothalamic-pituitary-adrenal axis (HPA axis) is activated, releasing cortisol, a stress hormone, through the adrenal cortex. It increases alertness and maintains concentration, helps the body cope with long-term stress, and regulates energy.

The amygdala stimulates the storage of a memory trace as emotionally significant. Thanks to the release of stress hormones such as adrenaline and cortisol, memory traces are stored more deeply and selectively in the brain, allowing the person to respond immediately to similar threats in the future. Stress memory, also known as stress-induced memory, is a specific form of emotional memory that is particularly oriented towards experiences the brain considers crucial for survival.

If a person behaves in a stressful situation in a way that leads to successful coping, the brain remembers the experience, and the person tends to apply it repeatedly. Adrenaline[1] helps to strengthen the memory traces associated with this behaviour so that it can be reacted to more quickly in the future. Conversely, ineffective behaviour is gradually eliminated.

1.2 Types of Fear about the Environment and the Nature of the Stimulus

Fear can be theoretically distinguished based on its nature and the criterion of a real threat to a person's life in the environment:

1. Real fear arises when there is an immediate, real threat to the life or integrity of an individual in the physical environment. It is associated with real consequences (pain, injury, death). It activates strong physiological reactions.
2. Abstract fear is a type of fear that is not associated with immediate physical danger, but rather with fears of future events or the unknown.
3. In the digital environment, abstract fear acquires the attribute of safety and can be referred to as the so-called safe fear. It is indicated by the study by Peñate et al. (2019)[2] and also by Parker (n.d.)[3]. Safe fear is a specific type of fear that is experienced in an environment where there is no real physiological danger, despite the stimulus being potentially frightening. For example, when consuming horror scenes or watching frightening yet fascinating content online, a child may become scared, but the fear felt is abstract.
4. Due to its nature, fear can be simple or complex. Fear can have a complex nature, for example, if the stimulus is perceived as fascinating and frightening at the same time (so-called "creepy fascination" or "disturbing fascination"). It represents a combination of emotions, together with emotional-cognitive interplay – fascination. Pollick (2008) states that the common source of the opposite emotions of desire (for a desirable stimulus) and fear (for a scary stimulus) even shares the same brain structure – the nucleus accumbens (NA), which generates both.

1.3 Ways of Processing Fear about the Environment and the Nature of the Stimulus

The processing of fear in the brain is a complex process, as the response to a threat is modulated by the environment, by the context of the threat and the nature of the stimulus:

1. The environment determines the contexts, i.e. whether it is a real or unreal threat to a person's life and, consequently, what type of fear is evoked and felt. Types of fears are processed differently, and therefore, the emotional response to fear is modulated. The hippocampus plays a role in the contextual modulation of fear (Moustafa et al., 2013). The hippocampus modulates the contextual processing of fear, meaning that, depending on the context – i.e., where and under what conditions the fear occurs – it can affect whether the stimulus is perceived as threatening. If a person were in a familiar, safe environment, their emotional response to fear might be milder. If they were in an unfamiliar or threatening environment,

[1] Author's note: Events that occur in the presence of adrenaline are remembered more intensely; adrenaline enhances the storage of information about events that happen in stressful situations. Stress-induced memory is particularly strong for emotionally charged events. This serves as an evolutionary advantage: if a person has encountered a dangerous situation in the past, it is important to remember it well in order to avoid it in the future.

[2] Author's note: Where it was investigated how virtual stimuli activate brain areas associated with fear while allowing gradual exposure to phobic stimuli without physical risk.

[3] Author's note: Which suggests the possibility of controlling fear due to the ability to pause content on a digital device.

the fear response might be more intense. At the same time, the hippocampus influences contextual learning, storing information about the context in which stimuli occur.

2. Processing real fear: Real stimuli from the physical environment elicit higher activation of the hippocampus, the occipital lobe, and the calcarine area, indicating a stronger emotional response compared to virtual stimuli, which elicit a lower intensity of the reaction. Although both types of stimuli activate the amygdala and insula, real stimuli cause more extensive activation (Peñate et al., 2019). The hippocampus, based on its role in contextual modulation, can influence the intensity of freezing in various situations (Moustafa et al., 2013).
3. Abstract fear processing occurs primarily through the long cortical pathway.
4. Safe fear processing: The brain distinguishes between real and "safe fear" based on its ability to recognise the difference between reality and simulation, despite virtual reality being able to simulate real stimuli. It affects behaviour – with virtual stimuli, there is a higher willingness to remain exposed to fear. With "safe fear", different neurobiological mechanisms occur, resulting in the activation of various brain structures. The hippocampus can modulate the fear response to a milder one thanks to information about the context (a familiar and safe environment). Adrenaline supports curiosity and increases alertness. Cortisol helps maintain attention and concentration. The stress response effect occurs – the body prepares for a reaction. However, in a safe virtual environment, there is no immediate threat, no real threat to life (since there are no real physiological consequences of the threat, no damage occurs at the physiological level), and the response does not end. After coping with a situation without a real-life threat, the brain activates the dopamine reward centre. Neurons in the posterior basolateral amygdala (pBLA) are activated, and dopamine is released from the ventral tegmental area (VTA). Reward neurons, therefore, can suppress the original fear neurons and create a new memory trace that the environment is no longer dangerous (Zhang et al., 2025). Fear management is an active learning process through the reward system. A cycle of continuous monitoring can be established. The person gains knowledge that nothing will happen to them in reality. A safe virtual environment allows consumers to experience a safe form of fear.
5. The nature of the stimulus also modulates fear as a reaction to a threat. In compound fear, the reaction occurs directly at the physiological level. When a person is afraid, the body releases adrenaline and cortisol. On the other hand, when fascinated, the brain activates the dopamine reward centre.

Processing of fear occurs upon repeated exposure to stimuli, which influences the type of fear and the environment in which it develops.

1. Generally, a database of previous experiences is used to evaluate new ones. With new analogous stimuli associated with a threat, a reaction is automatically triggered without conscious processing of the stimulus, thanks to the amygdala, which remembers stimuli associated with the threat. It works on the principle of emotional learning. Learning mechanisms in the amygdala enable the brain to associate other similar threatening stimuli with the feeling of fear, resulting in conditioned emotional reactions (LeDoux, 1992). On the other hand, repeated exposure to risk paradoxically reduces the fear associated with it. For example, engaging in risky play in a real environment helps children regulate fear and reduce its intensity through repeated exposure to stimuli (Gray, 2014). Similarly, repeated exposure to scary stimuli leads to a reduction in the fear response in the brain (Mederos et al., 2025). The brain learns to assess danger more quickly and effectively, as well as how to respond to it. This improvement is associated with the optimisation of neural connections that are activated by adrenaline.

Fear extinction is also context-specific; if a person learns that a certain stimulus is no longer dangerous, their response to that stimulus may be weakened in that specific environment (Moustafa et al., 2013). The above procedure applies to the processing of fear from a real environment.

2. Repeated exposure to safe fear stimuli in a virtual environment elicits a similar brain response as in real-life situations and subsequent behavioural expression, but it is more complex and intricate. People are born with instinctive fear responses. When repeatedly exposed to a stimulus without real danger, without negative consequences, the organism evaluates that the stimulus no longer poses a threat. A brain structure called the ventrolateral geniculate nucleus (vLGN) receives strong input from visual areas and stores memories triggered by learning. The ventrolateral geniculate nucleus stores learned responses and regulates the suppression of fear. After repeated exposure to harmless stimuli, the brain adjusts the response so that the amygdala is no longer activated, thus suppressing the instinctive fear response (Mederos et al., 2025).

The extinction mechanism is also activated. The ventromedial prefrontal cortex (vmPFC) that plays a role in fear extinction (Moustafa et al., 2013). The ventromedial prefrontal cortex (vmPFC) plays a role in fear extinction (Moustafa et al., 2013). Therefore, if the brain assesses the situation as less threatening, the hippocampus can be activated, which supports the processing of information in the prefrontal cortex and facilitates the subsequent suppression of fear. The result is a more adaptive response – instead of automatically succumbing to fear, a person can consciously choose another response, such as rational analysis.

Thus, the paradox arises that the brain evaluates the content provided in a virtual environment that provokes fear as not so dangerous; the hippocampus is activated instead of the amygdala, and the ventromedial prefrontal cortex takes care of erasing or rewriting the fear information to make it more acceptable. We note that the ventromedial prefrontal cortex (vmPFC) that plays a role in fear extinction, which may reduce the tendency to freeze (Moustafa et al., 2013).

Exposure to repeated safe fear in controlled conditions is used, for example, in exposure therapy, where, according to Craske et al. (2014), the goal is not to reduce fear directly but to teach the brain to recognise variations of the situation in which the stimulus does not pose a threat. It involves desensitisation by retraining the brain through controlled exposure. People who have experienced a stress reaction are gradually exposed to the situation in a safe, controlled virtual reality environment, which helps them reduce negative emotional responses. When exposure is sufficiently controlled and repeated, the activity of the amygdala decreases. Milad et al. (2007) and Milad et al. (2009) suggest that cortical influences inhibit the amygdala from the prefrontal cortex, thereby reducing exaggerated stress or fear reactions, i.e., weakening automatic reactions. We add that the “long path” through the prefrontal cortex is more involved, which helps to process the situation rationally. The brain gradually begins to form new associations, which can weaken the stress memory, while simultaneously recalling new reactions and applying them to the real world (providing space and enough time for cognitive evaluation of virtual reality). Cognitive restructuring – conscious processing of the response to stimuli is possible through cognitive exposure to VR, as it provides conditions of safety and sufficient time to react, which is not always available in real contexts.

In the selection process, selected neural circuits are stabilised, while others are gradually eliminated. Repeated training, which is the refinement phase, allows brain connections to be optimised, which, according to Lövdén et al. (2020), makes performance more accurate and efficient.

Based on the above, we conclude that a virtual environment providing experiences acquired within the framework of “safe fear” could play a role in the speed of extinction of a negative experience, or its transcription into a positive one.

1.4 Potential Specific Factors Concerning the Support of Repeated Consumption of Frightening-fascinating Content in the Virtual Environment

Other factors may contribute to the continued consumption of frightening yet fascinating content online. The factors are related to a) developmental characteristics of the personality and b) the support of a safe virtual environment.

a) In school-age children and adolescents, the processing of stimuli that cause fear or fascination is not as clear as in an adult. Some factors are unintentional and act on behaviour immediately, i.e. a person is not able to control them. These factors can manifest in response to stimuli from both real and virtual environments. Potential developmental personality factors include:

1. Cognitive maturity, specifically the level of inhibitory control in the child, which refers to the brain's ability to suppress automatic, impulsive reactions and replace them with thoughtful decisions. Very young children are not able to control their actions. In children, inhibitory control develops rapidly in preschool age (2.5 – 6.5 years). The greatest progress occurs between 3.5 and 4.5 years, with development slowing down after the age of six (Garcia-Lopez et al., 2020).
2. Sufficiently established boundaries between what is safe and dangerous, as well as an adult individual who has a larger database of risky, life-threatening experiences.
3. Type of reaction: Children do not have a fully developed prefrontal cortex, and when they are afraid, they react on a conative level by interpreting the stimulus as a danger and executing a fight, attack, or freeze response (Šíp Staňková, in Bachárová, 2023). Freezing is common in children; they are paralysed by fear because their brain forces them to process the stimulus in order to learn how to cope with it. They cannot fully process the stimulus. When they encounter something incomprehensible or new, the brain continues to search for answers, which leads to a more prolonged observation of the phenomenon. When exposed to fear, it may take children longer to understand the situation and decide how to respond to it. The process occurs at the physiological level: the amygdala activates the fear response, leading to the urge to escape. Conversely, the prefrontal cortex and hippocampus can support cognitive processing, which creates a desire to understand the stimulus. If the stimulus is too intense, the child may remain "frozen" between these two responses – neither fleeing nor turning away. A more precise explanation is provided by the study by Moustafa et al. (2013). The behavioural "freezing" response is one of the main responses to conditioned fear.
4. Social-emotional development during puberty. It may be a latent factor. In the case of pubescents, we base our approach on the dual systems model, as outlined in developmental cognitive neuroscience. The social-emotional system of the pubescent brain, part of the striatum, is responsible for attraction to new, exciting activities, rather than cognitive control systems, which are areas of the prefrontal cortex responsible for the feeling of safety and the regulation of potentially dangerous impulses (Casey et al., 2011). As Steinberg (2010) states, the tendency to seek rewards and pleasure outweighs the deterrence of threats and risks arising from activities.

b) Other potential psychological factors influence a person's choice of activity when they consciously and intentionally select it based on their preferences.

5. Saturation of the need to "test the boundaries of fear". The oscillation between the need for curiosity, discovery, and stability in humans typically occurs in early childhood, from approximately 7 to 8 months of age (Vágnerová, 2000). A person naturally tests the boundaries of fear. It is an evolutionary need. They seek out risky situations to learn how to regulate their fear and be prepared to respond adequately in times of real threat (Gray, 2014). People, therefore, purposefully repeatedly expose themselves to fear-inducing stimuli.

6. A person is bombarded with stressors, obligations and anxieties in everyday life. The search for extreme emotions can serve as a coping strategy, i.e. a stress management mechanism or the concept of escape.

There is a factor that is explicitly possible and supported by adapting the virtual environment to a safe one, which involves providing time to evaluate the situation and its context. It is:

7. Online disinhibition effect in human behaviour – specifically the dimension of asynchronous disconnection, which, according to Suler (2004), eliminates feedback and prevents the natural response to the previous stimulus. It means that a person can interrupt and leave an online activity at any time and return when it suits them again.

1.5 Benefits – Products of Consumption of Scary-fascinating Content as a Motivational Factor

Consuming scary yet fascinating content in a safe virtual environment offers benefits:

1. In a safe virtual environment, children gain a sense of control over their fear. According to Parker (n.d.), “safe fear” and asynchronous disconnection (the ability to pause or turn off content) in the virtual environment create awareness that ultimately empowers individuals to have control over their fear. It allows us to push boundaries and test our courage without putting ourselves in real danger. The element of control is key; when we voluntarily decide to engage in something scary, we maintain a sense of free will.
2. Experiences of positive stress, “eustress”, can provide a sense of achievement, personal growth, and increased awareness, which many find deeply rewarding (Raunak, 2024).
3. The experience of fear can provide catharsis, a psychological release of pent-up emotions (Scheff, 2007). Some content can evoke intense emotions, and when viewed, a person gets the impression that they are being spoken for, experienced, thereby releasing their emotional tension that they have not been able to express. Analogously, Parker (n.d.) states that when viewing frightening content, the mind is pushed to its limits, and the intense emotional experience can help alleviate accumulated stress and tension, making a person feel emotionally lighter and more relaxed. The use of fear has a therapeutic nature.
4. Voluntary exposure to controlled fear, such as watching a horror film, triggers a surge of adrenaline in the brain, which can evoke a feeling of excitement. A person thus gets pleasure from fear. Fear is therefore perceived as exciting and liberating (Parker, n.d.).
5. When testing the boundaries of fear, positive reinforcement occurs. Laing et al. (2025) explain that with repeated experience with a stimulus that does not lead to a threat, the brain creates active positive associations with the “safety zone”. At the same time, when watching frightening-fascinating content on a psycho-physiological level, hormonal reward occurs in the form of dopamine and adrenaline. To overcome fear, the brain activates the dopamine reward centre (Zhang et al., 2025). Parker (n.d.) states that the feeling of overcoming fear without harm is satisfying; the brain rewards a person with a sense of success and mastery. Positive reinforcement can encourage a person to seek more fear-provoking experiences in the future.

The benefits subsequently enter a new cycle of consuming frightening yet fascinating content as a motivational factor, which is a prerequisite for developing a cyclical system of testing the boundaries of fear and establishing a reward system.

1.6 Cyclic System for Processing Frightening-fascinating Content Mediated by Digital and Online Digital Devices

Following RQ1 on a theoretical level we find out that exposure to and processing of frightening-fascinating content mediated online involves a complex cycle of safe threat in a safe virtual environment. Theoretical foundations suggest that the physiological processing of fear and the emotional response to it differ fundamentally from one environment to another. For illustration, we provide a diagram (Figure 1) illustrating the processing of a frightening-fascinating stimulus in the human brain, concerning the environment and factors that support the ability to delay viewing frightening-fascinating content.

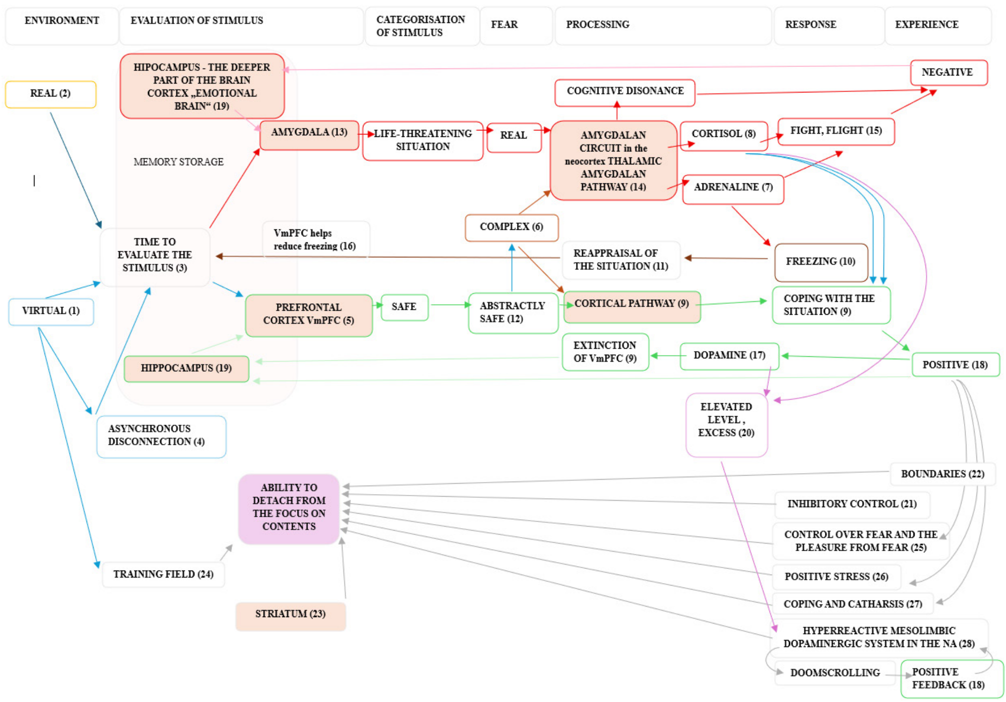

Figure 1: *A theoretical model of the processing of a frightening-fascinating stimulus in the human brain, concerning the environment and factors that support the ability to delay viewing frightening-fascinating content*

Source: own processing, 2025

If a child is exposed to a frightening or fascinating stimulus in a virtual environment (1), a complex process of stimulus processing is triggered, in which several factors act in parallel.

The primary factor is the type of environment that allows or does not allow time and space for processing the stimulus. The virtual environment represents a safe environment and allows the consumer enough time (3) to evaluate and process the stimuli mediated by it. It is supported by asynchronous disconnection (4), i.e., the possibility of interrupting online activity and resuming it at any time. The human brain distinguishes the simulation environment (1) from the real environment (2). The environment models the nature of the stimulus. The lateral geniculate nucleus (LGN) sends a visual signal to the visual cortex as a visual input for processing. The prefrontal cortex (5) evaluates that the threat from the frightening-fascinating stimulus takes place fictitiously in a safe virtual environment and that there is no real physiological threat to life.

The complex nature of the stimulus is also a factor, causing it to be perceived as fascinating and frightening at the same time. The stimulus will evoke a complex fear (6) – it represents a combination of emotion and emotional-cognitive interplay, including fascination. In frightening-fascinating stimuli, there is no clear assessment of whether the stimulus represents or does not represent a danger. At the biological level, adrenaline (7) is involved, supporting curiosity and increasing alertness, which is facilitated by fascination. Depending on the time of exposure to the stimulus, the stress hormone cortisol (8) is also activated, which helps maintain attention and concentration. The body prepares for a reaction. The virtual environment provides time to reevaluate contexts. The prefrontal cortex, specifically the VmPFC (5), consciously analyses the situation through a long cortical pathway (9), even though the process in the brain occurs in milliseconds. The frightening attribute of a frightening-fascinating stimulus can cause the brain to be unable to immediately classify the stimulus, potentially leading to a freeze response (10), followed by a reassessment of the situation's context (11). The virtual environment, due to its nature, provides a safe environment that models fear, which is perceived as a safe form of fear (12). If the prefrontal cortex deduces that the virtual stimulus is not dangerous, it can inhibit the amygdala. The amygdala (13) and insula are activated. However, the activation is not as extensive as with a real stimulus (Peñate et al., 2019), indicating that the shorter amygdalar-thalamic pathway (14), responsible for the conditioned response (escape or attack), is less involved (15).

In parallel with the evaluation of the situation, the ventromedial prefrontal cortex (VmPFC) is involved in fear extinction (5). Activated intercalated cells of the amygdala, which inhibit the central amygdala, will support fear extinction through a negative prediction error, meaning that reality was less intense or completely different from expectations. The VmPFC will also help reduce the freezing response (Moustafa et al., 2013) (16). The dopamine reward centre is activated in response to coping with the stimulus (Zhang et al., 2025) (17). The consumer has managed to watch the frightening yet fascinating content, and the experience is evaluated as rewarding and positive (18); as a result, it is stored in the hippocampus (19).

Previous research has demonstrated that coping with the fear of exposure to scary-fascinating content activates the dopamine reward system in the brain (17), leading to the brain receiving a biological reward in the form of dopamine (Zhang et al., 2025). The body's box, stimulated by dopamine (17), which is associated with the desire to continue, and cortisol (8), motivates the consumer to obtain another response (20) to the new scary-fascinating stimulus.

A new cycle begins, where the previous positive experience of coping with the viewed scary-fascinating content (18, 19) is involved in the process of evaluating the new scary-fascinating stimulus from the virtual environment.

The ventrolateral geniculate nucleus (vLGN) regulates the suppression of the instinctive fear response (Mederos et al., 2025) (15) upon repeated exposure to harmless stimuli, based on safe experience (18, 19) and modifies the response so that the amygdala is no longer activated (13).

Additionally, other intentional or unintentional factors influence the process of consuming frightening yet fascinating content. For example, a small child may be encouraged to repeat an action due to the inability to inhibit control (21) or test their fear boundaries (22) in order to refine the type of response they exhibit. The striatum drives the pubescent brain to new experiences (23). The virtual environment is designed to provide ideal conditions for working with fear and stress. The possibility of experiencing "safe fear" creates a training ground with frightening yet fascinating content (24), where the child can safely test the boundaries of fear. It is again supported by asynchronous disconnection (4).

In addition, the benefits of mastering viewing may include factors such as a positive feeling of being able to control fear (25), positive stress (26), catharsis of unexpressed emotions, and coping with accumulated tension (27). Specific factors and benefits may act as reverse factors, having the potential to motivate consumers to consume content that is both scary and fascinating online repeatedly. The reward system, which supports positive reinforcement, encourages the cycle of continued viewing and seeking out more content.

2 Methodology

The research problem is the intriguing yet concerning phenomenon of online content among school-age children. The survey aims to determine the presence of a phenomenon in the behaviour of school-age children – the persistence of consuming scary or frightening content. At the theoretical level, we are conducting the research question RQ1: What factors support the persistence of consuming scary-fascinating content mediated by online digital devices among school-age children?

One of the objectives of the research is to identify the presence of a behavioral phenomenon – namely, the persistence in consuming frightening and scary content among school-aged children. We specifically focus on the category of younger school-age students. Within RQ2, we are interested in: What is the frequency of repeated consumption of scary-fascinating content mediated by online digital devices among younger school-age students? To identify potential behavioral patterns among younger school-aged children, we conducted empirical research. Empirical findings from the pilot phase of the research provide support and demonstrate the operational validity of the theoretical model.

For data collection, we used a self-made questionnaire, which, in addition to demographic items, contained items focused on the consumption of scary-fascinating content by school-age children. Respondents answered on a Likert-type scale, where 0=*never*, 1=*rarely, 2=often,* 3=*very often,* 4=*always.* We processed the data using univariate statistics.

A total of (N=95) pupils of younger school age participated in the pilot phase of the research, of which 81 pupils were from the Žilina region and 14 pupils from the Trenčín region, aged (AM=9.95) years, of which were 44 boys and 51 girls.

3 Results

At the theoretical level, we introduced a conceptual model illustrating a potential cycle of persistent engagement with frightening and fascinating content among children and adolescents. At the empirical level, our objective is to identify the presence of this behavioral pattern – namely, the sustained consumption of frightening-fascinating content – among younger school-aged children. In connection with research question RQ2, we present the following empirical findings from the pilot phase of the study, which are provided in graphical form. We present the following findings, illustrated in the accompanying graph. The results are expressed in percentages, representing relative frequencies.

Our primary interest was to determine whether younger school-aged children have had a frightening experience related to the use of an internet-connected digital device. We also examined the frequency of exposure to frightening content online among this age group.

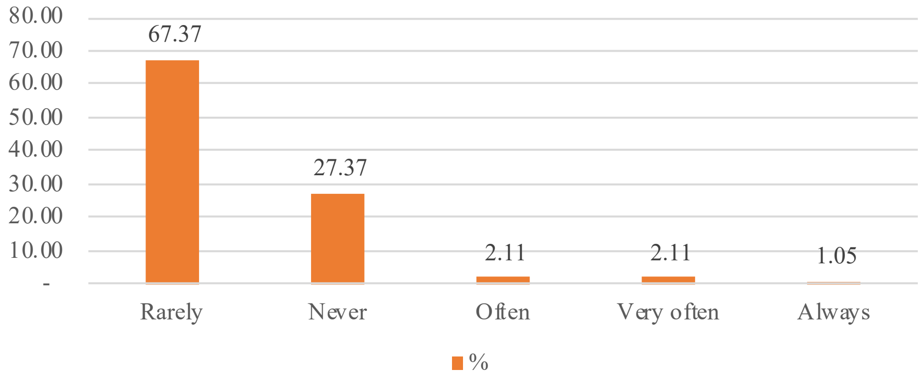

Figure 2: *Distribution of respondents' answers to the statement – "Someone or something on the internet scared me" (N=95)*

Source: own processing, 2025

Empirical data indicate that 67.37% of younger school-aged children (N=95) have had at least one frightening experience related to the use of an internet-connected digital device. Conversely, 27.37% of respondents reported never having encountered a frightening experience online.

Subsequently, we examined whether such frightening experiences among child consumers are associated with fear-inducing content mediated through online digital devices.

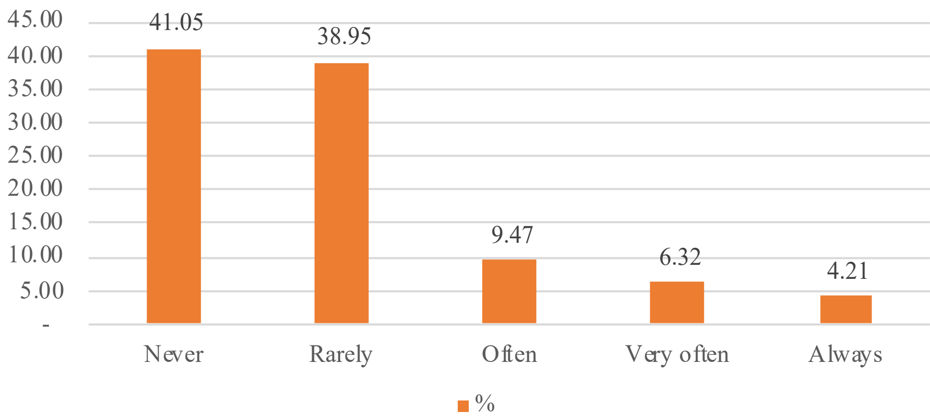

Figure 3: *Distribution of respondents' answers to the statement – "I have watched something on the internet even though I was very scared" (N=95)*

Source: own processing, 2025

Empirical data suggest that for 41.05% of respondents (N=95), frightening online experiences were never associated with viewing fear-inducing content. This also implies that for the majority – 58.95% of respondents – such experiences are linked to the consumption of fear-evoking material. Specifically, 38.95% of respondents reported that frightening experiences during online content consumption occurred rarely, 9.47% reported frequent occurrences, and 4.21% indicated that such experiences happen consistently whenever they use an online digital device.

We further investigated whether frightening experiences among younger school-aged children are specifically related to viewing scary content online.

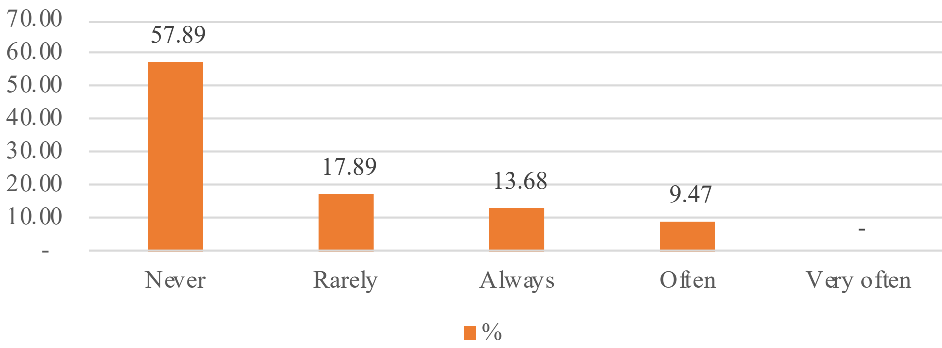

Figure 4: *Distribution of respondents' answers to the statement – "I watch things on the internet that are scary" (N=95)*
Source: own processing, 2025

Our findings indicate that for 57.89% of respondents (N=95), frightening online experiences were never associated with viewing scary content. Additionally, 17.89% of respondents reported that such experiences were rarely related to watching frightening content, while 13.68% stated that their frightening experiences during online content consumption were always linked to this type of content.

Furthermore, we explored the conative dimension of behavior among younger school-aged children in relation to their exposure to frightening and scary content mediated by online digital devices. Specifically, we investigated whether these children actively seek out such content themselves, thereby acting as initiators of exposure to frightening and scary material online.

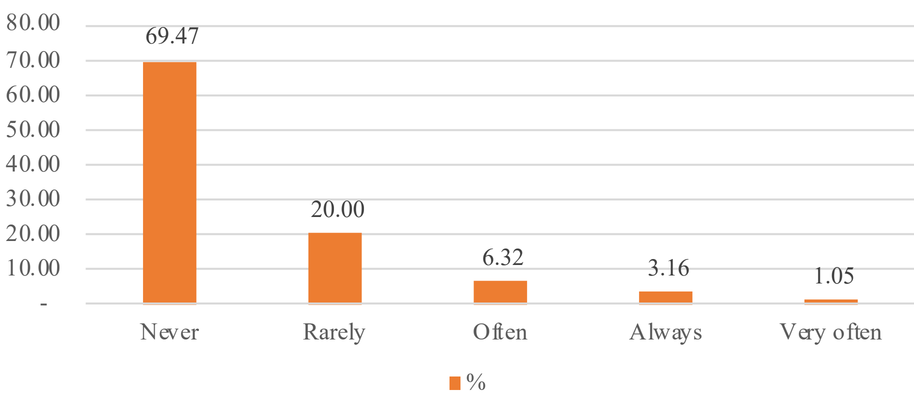

Figure 5: *Distribution of respondents' answers to the statement – "I search for things on the internet that are scary or frightening" (N=95)*
Source: own processing, 2025

Empirical findings indicate that 69.47% of respondents (N=95) are never the initiators of viewing frightening or scary content online. This suggests that such content is not actively sought out, but rather encountered incidentally. Conversely, 30.53% of respondents reported that they themselves initiate the consumption of frightening and scary content.

We subsequently examined whether younger school-aged children tend to terminate the viewing of frightening or scary content upon encountering it.

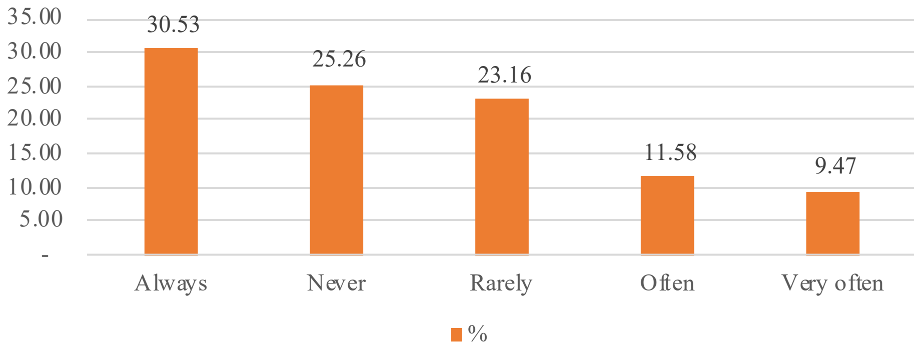

Figure 6: *Distribution of respondents' answers to the statement – "When I see scary or frightening things on the internet, I immediately switch/close/turn it off" (N=95)*
Source: own processing, 2025

Our findings show that 30.53% of respondents (N=95) consistently terminate the viewing of frightening and scary content upon encountering it – by switching, closing, or exiting the webpage. However, 69.47% of children do not interrupt the viewing process, allowing the content to continue.

In relation to behavioral responses among younger school-aged children when exposed to frightening and scary content, we further examined whether they persist in consuming such material.

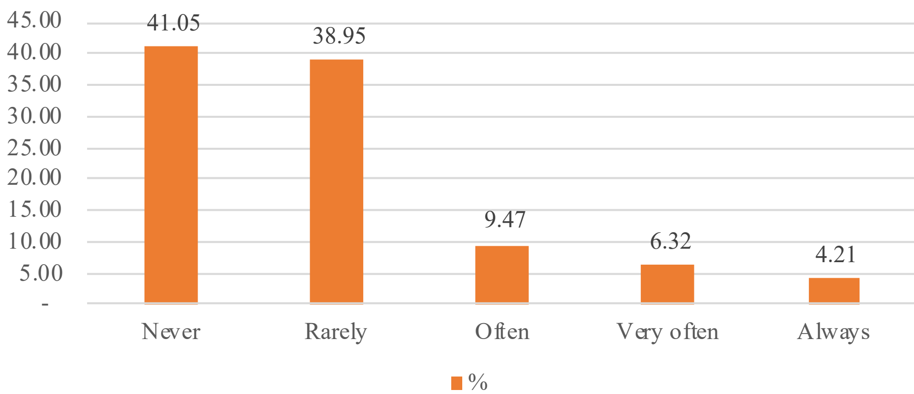

Figure 7: *Distribution of respondents' answers to the statement – "Something on the internet scared me, but I kept watching it anyway" (N=95)*
Source: own processing, 2025

Our findings reveal that 54.74% of respondents (N=95) never continue viewing content after being frightened by material encountered online, whereas 45.26% persist in consuming content that evokes distress.

To verify the presence of this behavioral tendency – repeated consumption of frightening-fascinating content – we posed a similarly worded question. This item functioned as a lie score, intended to enhance the validity of responses provided by younger school-aged children regarding their persistence in consuming frightening online content.

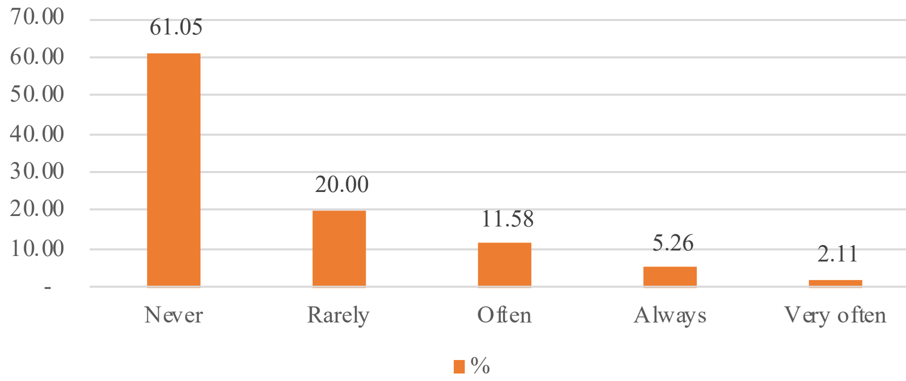

Figure 8: *Distribution of respondents' answers to the statement – "There was something scary or frightening on the internet, and I couldn't take my eyes off it" (N=95)*
Source: own processing, 2025

The results similarly suggest that 61.05% of respondents (N=95) have never experienced an inability to disengage from frightening or scary online content. However, 38.95% of respondents show a tendency to remain fixated on such content, unable to look away.

Finally, given the average age of the respondents (AM=9.95 years), we were also interested in whether children communicate their experiences with frightening online content to an adult authority figure.

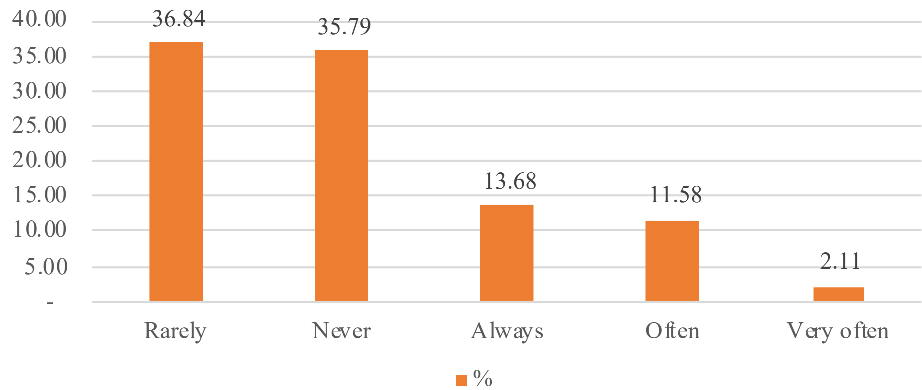

Figure 9: *Distribution of respondents' answers to the statement – "When something on the internet scares me, I tell my parent" (N=95)*
Source: own processing, 2025

Empirical data indicate that only 35.79% of respondents (N=95) never communicate their experience with frightening online content. In contrast, 36.84% of respondents rarely share such experiences, while 13.68% consistently report frightening online experiences to a parent.

4 Discussion

It is evident that younger school-aged pupils have encountered frightening and scary content while using internet-connected digital devices. Research findings indicate that 67.37% of respondents (N=95) have had such experiences. For 58.95% of respondents, the frightening experience was directly related to the consumption of fear-inducing content. Interestingly, 17.89% of respondents reported that their frightening experience was rarely associated with viewing scary content, whereas 13.68% stated that such experiences were consistently linked to this type of online material.

We also focused on the conative dimension of behavior among younger school-aged children in relation to their exposure to frightening and scary content mediated by online digital devices. Our data show that 69.47% of respondents (N=95) are never the initiators of viewing such content, suggesting that they do not actively seek it out but rather encounter it incidentally. It can be explained by the fact that young children are more sensitive to scary content; however, some children from the age of 10 can distinguish between fiction and reality, which allows them to better cope with scary scenes and carry a lighter emotional burden (Pearce & Field, 2016).

The research revealed that in 30.53% of cases, respondents terminate the viewing of frightening and scary content upon encountering it – by switching, closing, or exiting the webpage. However, as many as 69.47% of children do not interrupt the viewing process, allowing the content to continue. A key finding is the presence of a behavioral pattern among younger school-aged children: the persistence in consuming distress-inducing content. Specifically, 45.26% of respondents reported continued engagement with such content, and 38.95% demonstrated a tendency to remain fixated on frightening material, unable to look away. This may be explained by a 'freezing' response, in which the child is immobilized by conflicting impulses – an instinct to escape the unpleasant situation, coupled with a simultaneous desire to see how it unfolds.

Children engage with online content, often without parental awareness of their digital activities. In this context, we found that only 35.79% of respondents never communicate their experience with frightening content online. Meanwhile, 36.84% rarely share such experiences, and 13.68% consistently report them to a parent. We assume that children do not mention a negative experience to their parents in order to avoid a ban or a negative response from them. It is questionable how and to what extent children cope with a strong emotional experience.

Given the nature of the issue, we aim to further direct attention to the potential risks and negative impact of "fictional safe threats" on school-aged children. The risk of scary and hostile content online lies in its impact on children's psychological well-being.

The biggest role is played by positive reinforcement. The combination of the arousal system (adrenaline) with the reward system (dopamine) creates a cycle of seeking further stimuli, which is particularly effective in virtual environments that support this system. There is an immediate stimulus and positive reinforcement.

Exposure to an activity that increases dopamine can become addictive (Adamec, 2022). Positive reinforcement can encourage a person to seek out more fear-inducing experiences in the future (Parker, n.d.). Higher dopamine levels can lead to increased motivation, feelings of euphoria, and concentration (Adamec, 2022). In the brains of children who repeatedly consume frightening, morbid, or hostile content, there may be a tendency to seek out similar stimuli, thereby expanding their repertoire to include additional scenes with horror elements or engaging in the play of scary games.

The risk is a higher tolerance for scary, morbid, or hostile virtual content. Already in the research of Caron & Caron (1968), it was found that repeated exposure to stimuli leads to a decrease in visual fixation and the reaction is restored only when the stimulus changes. Similarly, it is stated by sk.sainte-anastasie.org, that habituation is a learning process in which the brain gradually becomes accustomed to repeated stimuli, thereby reducing its response to them. If a person is repeatedly exposed to certain content, their brain begins to perceive it as common, even though it might have been initially perceived as dangerous. We conclude that absurd content depicting blood, fatal injuries, suicidal practices, and criminal acts may gradually be perceived by children as normative elements of everyday social reality.

There is also a risk of stimulus desensitization occurring within the learning process, whereby repeated exposure leads to a diminished emotional response. The emotional response is reduced, and the feeling of fear is experienced less intensely over time. The brain adapts to stimuli that initially elicit strong emotional responses – such as fear – resulting in a weakened reaction over time. This process may potentially lead to increased tolerance, for instance, toward violent content.

We conclude that the pursuit of intense experiences contributes to the popularity of trends such as creepypasta (Wattpad, n.d.), SCP, and deep web horror narratives. There is a persistent interest among consumers in increasingly extreme content, exemplified by escalation, dramatic elements, and dystopian tones in series such as Skibidi toilet (TV Tropes, n.d.). In general, the demand for more intense experiences appears to be driven by the process of desensitization. Regular exposure to high-intensity stimuli may potentially lead to a need for increasingly extreme experiences in order to achieve the same level of satisfaction. Raunak (2024) highlighted the principle of desensitization in the context of hedonic adaptation, suggesting that individuals quickly acclimate to pleasurable stimuli, which in turn drives the search for more intense experiences to maintain a consistent level of satisfaction. At the neurophysiological level, the process of desensitization can be explained as follows:

On the one hand, dopamine motivates us to seek rewarding experiences, but it does not negate our ability to assess risk. The prefrontal cortex, responsible for decision-making, works in tandem with the dopamine system in a balanced manner, helping people push their limits in pursuit of intense experiences while maintaining safety (Raunak, 2024). On the other hand, when dopamine is elevated for an extended period, the brain adapts by reducing the sensitivity of dopamine receptors. This leads to a need for increasingly intense stimuli in order to experience the same level of excitement or motivation (Sands et al., 2023; Raunak, 2024). The mechanism is similar to that observed in addictions, where excessive stimulation of the dopamine system leads to a reduced ability to experience pleasure from ordinary activities (Sands et al., 2023). Even modest increases in the stress hormone cortisol may impair self-regulation abilities in preschool-aged children (Blair et al., 2005). Additionally, excessive cortisol secretion is linked to memory impairment. A meta-analysis by Het et al. (2005) argues that adrenal glucocorticoids (GCs) secreted during stress modulate memory. Prolonged exposure to stressors (including emotionally demanding stimuli) also poses a risk, keeping cortisol at high levels, and the HPA axis may remain chronically activated. It leads to mood disorders (Knezevic et al., 2023).

The mesolimbic dopamine system in the nucleus accumbens is capable of activating desire without pleasure and may become hyperreactive (Pollick, 2008), meaning that the urge to be exposed to a stimulus persists even when the pleasure derived from it diminishes. There is a risk that long-term sensitization of brain structures may gradually transform into hyperreactivity, disrupting the balance between stimulation and control. This implies that the individual seeks increasingly intense stimuli, even though the subjective experience of pleasure from them steadily declines. Hyperreactivity may help explain why an individual continues to consume online content despite no longer deriving enjoyment from it or having genuine interest in it.

Repeated exposure to frightening and fascination-inducing content may potentially lead to the development of behavior driven by psychological mechanisms that compel the individual to focus on threats and negative information. This pattern resembles doomscrolling – a behavioral tendency in which individuals repeatedly seek out negative content. Doomscrolling has a positive relationship with sensation seeking and negativity (Sharma et al., 2022).

Children who lack a sufficiently developed risk assessment system may be more prone to consuming content without the ability to evaluate its impact objectively.

Exposure to a fictional threat to life creates virtual, iconic representations – representatives of reality – in the child's mind. Lin Tammy (2017) demonstrates that virtual fear can leave lingering traces – flashbacks. After exposure to horror scenes in a VR game, participants experienced the negative impact of the Tetris effect – a phenomenon when, after an intense repeated experience, perceived elements "ran in the background of the mind" and participants recalled or experienced images, movements after the game ended. At the same time, a cognitive residue of a strong emotional experience – fear was manifested, respondents were afraid of an attack from behind, as they experienced in the game, they felt slight tension or apprehension. It means that although they consciously knew they were safe, the brain continued to operate within a "threat frame" for a certain period. Subsequently, according to respondents, uncertainty or tension when moving in space was manifested in increased vigilance in behaviour.

The risk also arises when a child begins to believe that ideas based on virtuality are qualitatively equivalent to those that arise from real experience. It can lead to the inability to distinguish real risk from a digital "game". Neprašová (n.d.) states that repeated exposure to certain stimuli can affect the way children evaluate new experiences.

Dopamine, a neurotransmitter associated with pleasure, plays a crucial role in the learning process from both positive and negative experiences, enabling the brain to adjust and adapt its behaviour based on the outcomes of these experiences. Dopamine can influence the evaluation of experiences by encoding prediction errors related to rewards and punishments. Subsecond changes in dopamine levels can influence how the brain interprets both positive and negative experiences, potentially distorting the perception of reality by reinforcing certain expectations or reactions. Another risk is excessive stimulation of the dopamine system, which can lead to a reduced ability to respond to new experiences (Sands et al., 2023).

The inability to distinguish the quality of virtual and real threats to life can lead to a reduced ability to distinguish real threats. Suppose a child becomes accustomed to viewing everything scary as just "fun". In that case, they may underestimate the real danger that can come from, for example, meeting a stranger, encountering unfamiliar situations, or navigating unfamiliar spaces.

Exposure to hostile, scary, or even horror content is not a sufficient response to the evolutionary need to learn to regulate fear in the event of a real threat, as stated by Gray (2014). On the contrary, increased resistance to such stimuli may lead to inadequate reactions in a real crisis. When children encounter a real threat, they may react inappropriately, either underestimating the risk or panicking. Additionally, as a result of desensitisation, children may react less to common frightening situations, such as darkness and unfamiliar sounds.

4.1 Recommendations for Primary Prevention for Children in the First Grade of Elementary Schools

We present suggestions for the prevention of fear for younger school-age children who show difficulties in consciously avoiding hostile content:

1. The American Academy of Pediatrics (AAP, 2025) provides recommendations for parents regarding securing access and regulating inappropriate content on platforms and social networks, which can be ensured through settings:
   - Creating a supervised mode linked to their account to allow supervision of the child's viewing of content, blocking channels.
   - Setting a time limit in the Family Link application from Google.
   - Checking the stated age on the child's account, which will allow platforms such as YouTube and social networks to filter out graphic scary content.
   - Resetting the algorithm on the YouTube platform by deleting the search history is necessary to remove scary videos from the child's news feed.
   - Managing content on the social media channel (AAP, 2024).

2. One of the priority steps is communicating with the child about the content they have been watching recently (AAP, 2025).
3. Although contact with frightening and fascinating content occurs in children of younger school age, it is appropriate to prepare them for potential content in early childhood. It is worth noting that children can come into contact with content in early childhood when it is conveyed to them by an older sibling. Therefore, parental intervention is appropriate in developing the child's inhibitory control, which is the brain's ability to suppress automatic or impulsive reactions and replace them with more thoughtful decisions. It is a key part of self-regulation, helping to maintain attention, control behaviour, and adapt to rules. Inhibitory control develops rapidly in children in preschool age (2.5 – 6.5 years). The greatest progress occurs between 3.5 and 4.5 years of age, with development slowing down after the age of six (Garcia-Lopez et al., 2020).
4. It is appropriate to help the child gain control. It is beneficial to help the child understand that they can have control over what they watch. If the child is afraid, it can help to let them decide when to stop watching, so that they realise they have control over what they watch. If the child is unable to do this, an adult authority is authorised to take responsibility for regulating and controlling the content.
5. Children under 5 years of age are not yet able to regulate their emotions and express them independently. They need parents to be present, accompany them with emotions and radiate security. By calming down, biochemical pathways are built in the child's brain, and they gradually learn to take care of themselves (Šíp-Staňková, in Bachárová, 2023).
6. It is also essential to work with the negative experience that children have. Children's nervous system needs to process the experience through conversation, physical relaxation, or emotional expression.
7. It is necessary to teach children that fear has its meaning. At the same time, it is important to point out natural limits and teach them that, in reality, there are consequences and fear is not just a "game".

In the school environment, educators have the opportunity to influence students directly during the educational process, or to cooperate in the upbringing of children as a mediators of educational procedures for parents.

1. Media education can help children's development in the cognitive area: informing about the Internet environment, specifically about the architecture of the online environment – the connection with data personalisation, corporate media connections, user profiling by age and the related generation of online content, dispersion strategies based on algorithms that overwhelm children with similar content.
2. Students spend a significant part of their day at school, sharing their experiences and knowledge from the virtual environment with their peers. Orientation diagnostics and interviews, as outlined in step 2, can help the teachers stay informed about issues and trends, as well as children's current state of mind.

5 Conclusion

In a theoretical and empirical study, we examined the issue of school-age children's consumption of scary and fascinating content. As part of research question RQ1, we theoretically identified potential factors of persistence in watching this content. On a theoretical level, we assume that the consumption of scary-fascinating content in younger school-age children represents a complex process supported by a combination of neurobiological, psychological, and environmental factors. The virtual environment provides a safe and sufficient time and space to evaluate and process the stimulus. It is supported by asynchronous disconnection;

if the consumer cannot handle the situation, they can interrupt the online activity and return to it later. The environment is related to the type of fear that is felt. The brain recognises the difference between reality and simulation, and stimuli from the virtual environment cause safe fear, which is abstract. The consumer eventually finds that they are not in direct danger of life, and there is no physical harm. Fear has a complex nature in the case of scary-fascinating content; it represents a combination of emotions, along with an emotional-cognitive interplay-fascination. It is subsequently directly related to the type of reaction. Responses to stimuli from virtual environments tend to be milder compared to reactions in real-life situations. Adrenaline and cortisol levels support the management of emotionally demanding situations, which is particularly beneficial when a safe course is followed. A stimulus evaluated as relatively safe tends to result in reduced activity of the amygdala, which is responsible for instinctive reactions. As a result, the consumer tends to freeze and maintain attention in order to obtain an answer, thereby facilitating cognitive processing or reassessment of the situation. After managing the situation, the consumer is rewarded with dopamine, which, along with an increased level of cortisol, motivates further consumption of stimuli of a similar nature. At the same time, the experience with frightening yet fascinating content is stored as a positive memory in the hippocampus.

In addition, the process of repeated viewing of scary-fascinating content may involve some of the specific factors which the consumer may engage in without conscious awareness, such as inhibitory control in the child's behavior, the boundaries of distinguishing between safe and dangerous stimuli, social-emotional development – the involvement of the striatum part of the brain in evaluation, or the evolutionary need to test the boundaries of fear. Similarly, repeated consumption of frightening and fascination-inducing content may be reinforced by various factors, such as coping strategies for managing stress, the concept of escape. At the same time, the consumer may be supported in repeated activity by benefits, such as control over fear, experiencing positive stress, catharsis, and enjoying the fear, as well as positive reinforcement, which fosters a sense of success and mastery. Specific factors and benefits may, from a theoretical perspective, represent reverse variables supporting the implementation of repeated consumption of scary-fascinating content online.

The experience, modulated by the virtual environment, is relatively positive, thus initiating a new cycle of viewing and evaluating scary-fascinating stimuli. Dopamine and the ventromedial prefrontal cortex, which activate the mechanism of extinction and erasure of expected negative consequences from frightening-fascinating content, may contribute to the perception of analogous frightening and fascination-inducing stimuli, within a repeated cycle, as safe stimuli. Thus, within a cycle of positive reinforcement stemming from the management of "safe threat", the consumer may continue engaging with frightening and fascination-inducing online content.

The results of the pilot phase of research addressing RQ2 suggest that younger school-age students are already exposed to disturbing content online, which they encounter on various platforms and social networks. For 58.95% of respondents (N=95), frightening experiences are associated with the consumption of fear-inducing content, while for 13.68% of respondents, such experiences are consistently linked to viewing scary content. In as many as 69.47% of cases involving younger school-aged children, they are never the initiators of viewing frightening or scary content; instead, such content reaches them randomly via the internet. Upon encountering frightening and scary material, 69.47% of children do not terminate the viewing, allowing the content to continue playing. In 45.26% of cases, respondents remain engaged with fear-inducing content, and 38.95% of respondents tend to be unable to avert their gaze from frightening and scary online material. Since, on a theoretical level, we assumed that the persistence in viewing frightening and scary content mediated by online digital devices appears to be a cyclical process; we discussed the role of digital environment safety and the ability of children to emotionally respond to stimuli without direct threat.

Findings from the pilot phase of the research revealed that younger school-aged children predominantly tend to communicate negative online experiences with an adult authority. From a preventive perspective, we recommend increasing awareness among parents and educators about the impact of frightening and scary content mediated by digital and online devices, promoting media literacy, and creating space for safe reflection on frightening experiences from the online environment.

Verification of the theoretical framework – repeated consumption of frightening and fascination-inducing content by children and adolescents – requires rigorous research. We propose conducting a more extensive longitudinal study to examine the hypothesized relationships between neurological factors, environmental factors (such as mediation or asynchronous disconnection), and long-term behavioral consequences (such as risk-seeking or desensitization to consumed content). The analysis of these factors and relationships requires advanced statistical modeling, where structural equation models could clarify the involvement and strength of the proposed cycle's components.

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