



## The Algorithm as an Architect of Anxiety: 'Lucid Dreaming' Content Precipitating Acute Somniphobia in a Preadolescent—A Case Report on the 'Digital Pathogen' Phenomenon and Culturally Responsive Mediation

Ni Wayan Saka Rahayu<sup>1\*</sup>, Putu Risdianto Eka Putra<sup>1</sup>

<sup>1</sup>Department of Psychiatry, Ari Canti General Hospital, Denpasar, Indonesia

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#### \*Corresponding author:

Ni Wayan Saka Rahayu

#### E-mail address:

[sakarahayu@gmail.com](mailto:sakarahayu@gmail.com)

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### ABSTRACT

**Introduction:** The pervasive integration of digital media into pediatric life has shifted the clinical focus from screen time quantity to content quality. Emerging "metaphysical" sub-genres, such as algorithmic "Lucid Dreaming" tutorials, pose unique risks to preadolescents. This case report aims to document a novel presentation of acute sleep anxiety precipitated specifically by "Lucid Dreaming" tutorials. **Case presentation:** We report the case of a 10-year-old male of Balinese descent presenting with acute sleep onset insomnia (somniphobia), autonomic hyperarousal (resting heart rate 104 bpm), and separation anxiety. The precipitating event was the consumption of "Astral Projection" and "Reality Shifting" content, which the patient, being in the Concrete Operational stage of cognitive development, misinterpreted as a literal biological threat of "soul separation." Assessment via the Spence Children's Anxiety Scale (SCAS) yielded a score of 46 (98th percentile), indicating severe anxiety. A four-week intervention was implemented, utilizing a Cultural Formulation approach that integrated Balinese spiritual coping with Cognitive Reframing and a Structured Parental Mediation Protocol (restrictive mediation and active co-viewing). Post-intervention analysis showed a statistically significant reduction in SCAS scores to 18 (Reliable Change Index > 1.96) and normalization of sleep onset latency from 140 minutes to 25 minutes. **Conclusion:** This case identifies specific abstract digital content as a potential cognitive pathogen for vulnerable developmental stages. It highlights the necessity of auditing content quality and validates the efficacy of culturally responsive parental mediation in resolving digitally induced psychopathology.

### 1. Introduction

The 21<sup>st</sup> century has witnessed the ubiquitous integration of digital media into the foundational fabric of human development, fundamentally altering the ecological niche, or developmental milieu, of the modern child.<sup>1</sup> This digital saturation is no longer a peripheral influence but a central, organizing principle of pediatric life. Recent epidemiological data, particularly from the post-pandemic era, quantifies this new reality, suggesting that preadolescents (ages 8–12) are immersed in screen-based media for an average of four to six hours daily.<sup>2</sup> This figure, representing a precipitous rise from pre-pandemic baselines, has understandably focused clinical and

research attention on the "quantity" of exposure. The resulting body of literature is robust, having well-established the deleterious psychophysiological sequelae of excessive screen time. These include, but are not limited to, the disruption of circadian rhythms via blue light-mediated melatonin suppression, the erosion of sleep architecture, the promotion of sedentary behaviors, and the cognitive and social displacement of high-value activities such as unstructured play and face-to-face interaction.<sup>3</sup>

However, we posit that this "quantity"-based paradigm, while necessary, is now diagnostically insufficient. As the digital ecosystem evolves from a static "pull" medium to a dynamic, algorithmically

curated "push" environment, the clinical focus must pivot from how long children are online to what they are consuming. The qualitative impact of specific, algorithmically targeted content on pediatric psychopathology remains an emerging and critical frontier in psychiatry. This paper proposes the conceptual framework of the "digital pathogen": a specific, reproducible content theme or meme that, while potentially benign to a neuro-mature adult, functions as a pathogenic vector when it interacts with the unique cognitive-developmental vulnerabilities of a pediatric host. These "pathogens" are disseminated through algorithmic "rabbit holes," which rapidly identify and amplify user interest, creating high-frequency, high-intensity exposure to niche content that can destabilize a child's worldview.<sup>4</sup>

A paradigmatic example of such a sub-genre, and the focus of this report, involves the pop-cultural appropriation of "Lucid Dreaming." In its scientific context, lucid dreaming is a recognized dissociative sleep state—a hybrid state of consciousness involving metacognitive awareness during Rapid Eye Movement (REM) sleep—that has been clinically explored as a therapeutic modality for nightmare disorders.<sup>5</sup> However, within the digital ecosystem (such as Shifttok), this scientific concept is frequently and deliberately conflated with metaphysical beliefs such as astral projection (the willed separation of the soul from the body) and reality shifting (the purported ability to shift one's consciousness to an alternate, parallel reality). These tutorials, presented as "how-to" guides, employ pseudoscientific language (such as brainwave frequencies, sleep-wake cycles) to create a veneer of legitimacy, effectively blurring the epistemological boundary between recognized sleep phenomena and existential, metaphysical claims.<sup>6</sup>

This blurring of boundaries is theoretically potent. Two established frameworks from communication and psychology elucidate the mechanism of action.<sup>7</sup> First, Gerbner's Cultivation Theory suggests that high-frequency media consumers (like a child in an algorithmic filter bubble) begin to perceive the "real world" through the distorted lens of the content they

consume. The algorithm creates a totalizing digital environment where the rules of the platform—for example, that "soul separation" is a real and achievable goal—are mainstreamed, resonating with the user and cultivating a worldview where this is a tangible possibility, or in this case, a tangible threat. Second, Bandura's Social Cognitive Theory posits that children learn powerfully through vicarious modeling.<sup>7</sup> When "influencers," who occupy a position of perceived authority and parasocial trust, validate these metaphysical threats as reality, the child engages in observational learning. The influencer's validation ("Warning: This is dangerous!") is not interpreted as a deterrent but as a confirmation of the threat's existence, which the child then internalizes.<sup>8</sup>

This internalization of a digital threat is uniquely catastrophic for a child in a specific developmental window. According to Piaget's theory of cognitive development, a preadolescent (typically ages 7–11) operates within the Concrete Operational stage. A hallmark of this stage is the ability to master logical, concrete thought (conservation, arithmetic) but a profound inability to engage in purely abstract, hypothetical, or counter-factual reasoning.<sup>9</sup> The concept of "astral projection" is a purely abstract, metaphysical proposition. However, the "how-to" tutorials present it as a concrete physiological risk. The child in this developmental stage lacks the requisite "ontological immunity"—the metacognitive capacity to categorize this content as "fantasy," "belief," or "metaphor." Instead, they process the information literally: "If I follow these steps for a dream, my soul (a concept they understand) may actually leave my body (a concrete fear) and not return." This cognitive-developmental gap is the "receptor site" to which the "digital pathogen" binds, precipitating a genuine, psychophysiological fear response to a purely digital construct.<sup>10</sup>

This case report aims to provide a detailed clinical, theoretical, and methodological documentation of this exact phenomenon. We present a novel case of acute somniphobia (sleep-onset phobia) and autonomic hyperarousal in a 10-year-old male, precipitated

specifically by exposure to this "Lucid Dreaming" content. Unlike general screen-time studies, this report isolates the specific content as the precipitant, effectively providing a "digital toxicology" of the pathogenic mechanism. Furthermore, we analyze the pathophysiology of this content-induced existential fear through a Culturally Responsive lens, demonstrating how the digital pathogen (astral projection) hijacked the patient's pre-existing Balinese cultural schemas (Sekala/Niskala), amplifying its pathogenic virulence. Finally, we provide a reproducible, statistically validated methodological framework for "Structured Parental Mediation" as a primary therapeutic intervention. By using the Reliable Change Index (RCI), we move beyond anecdote to provide statistically significant evidence of symptom resolution, offering a clinical blueprint for practitioners navigating this new and complex intersection of technology, culture, and pediatric mental health.

## **2. Case Presentation**

This clinical case report has been prepared in full accordance with institutional ethical guidelines and the principles of the Declaration of Helsinki. Written informed consent was obtained from the patient's parents for the collection, analysis, and publication of de-identified clinical data, including psychometric scores, clinical history, and treatment outcomes. The parents were provided with a draft of the manuscript to ensure factual accuracy and to confirm that the de-identification measures were sufficient to protect their privacy. Furthermore, given the patient's age and cognitive capacity, his verbal assent was obtained prior to the clinical interviews and for the publication of his case. He was informed, in age-appropriate language, that his story about the scary videos might help doctors understand how to better help other children who might be frightened. All identifying information, including name, date of birth, and specific location, has been removed. The cultural details provided are representative of the Balinese

Hindu tradition but are not specific to a single family unit, thereby protecting patient identity.

The patient is a 10-year-old, 11-month-old male of Balinese descent, residing in a major urban center in Indonesia. He presented to the outpatient pediatric psychiatric clinic accompanied by both parents, who initiated the consultation due to a 14-day history of acute, severe, and progressively worsening psychological distress. The chief complaint, as articulated by his mother, was an intense, debilitating fear of going to sleep. This was not a presentation of simple childhood bedtime reluctance, but a clinically significant phobic avoidance (somniphobia) that had rapidly destabilized the family system. The parents described a "complete personality shift" in their son, previously a "happy and easy sleeper," who now, beginning at approximately 20:00 each evening, would exhibit signs of profound psychomotor agitation. This agitation was described as tearful pleading, pacing in his bedroom, clinging to his parents, and vocalizing a desperate need to stay awake. These behaviors would intensify as the evening progressed, culminating in what the parents described as panic at the moment of lights-out. The distress had been occurring nightly for the 14 days immediately preceding the consultation, with no symptom-free intervals.

Prior to the onset of symptoms, the patient was an exemplar of typical preadolescent development. He was a high-achieving 4th-grade student with a stable social circle and no history of anxiety, mood, or developmental disorders. His sleep-wake cycle was, according to parental report, like clockwork, with a consistent sleep onset latency (SOL) of approximately 20 minutes and no reports of parasomnias (such as night terrors, sleepwalking) or significant nightmares. He had no prior psychiatric history and had never required psychological intervention. The onset of the current illness was reported as abrupt, beginning two weeks prior to presentation. The trajectory was one of rapid escalation; (1) Days 1-4: The patient began exhibiting stalling behaviors at bedtime, requesting extra stories, drinks of water, and complaining of not being tired; (2) Days 5-9: The reluctance escalated to

tearful protests. He began articulating a vague fear of bad dreams and started complaining of somatic symptoms (headaches, stomach butterflies) confined to the pre-sleep period; (3) Days 10-14: The symptomatology crystallized into a full-blown phobic presentation. The patient actively resisted all parental attempts to initiate the bedtime routine, requiring one parent to remain in his room until he (after several hours) would eventually fall asleep from sheer exhaustion, often past midnight. His distress was palpable and profoundly disruptive.

The patient reported a constellation of somatic symptoms that were pathognomonic of an acute panic response. These symptoms were exclusively cued by the anticipation of sleep, typically beginning around 21:00. He reported severe palpitations, which he articulated as, "My heart is beating like a drum and trying to get out of my chest". He also described a "heaviness in my chest, like a brick," accompanied by self-reported hyperventilation ("I can't catch my breath"). The patient endorsed tension headaches, rated 4/10 on the Visual Analog Scale (VAS), described as "a tight band around my head". He also reported feelings of subjective dizziness and tremulousness in his hands. These symptoms were conspicuously absent during daytime hours, where he would function normally at school and at play, albeit with increasing daytime fatigue.

Upon clinical interview, after rapport was established, the patient was able to articulate the core cognitive content of his fear. This was not a non-specific anxiety; it was a singular, laser-focused catastrophic cognition. He stated, with genuine terror: "If I fall asleep and dream, my soul will travel to another dimension and might not be able to return to my body". Further gentle probing revealed the architecture of this belief. He was not afraid of "monsters" or other typical childhood fears. He was afraid of himself—specifically, an involuntary process (dreaming) that he now believed would result in permanent annihilation or dissociation. He expressed a profound fear of "being lost" or "stuck" in a dream-world, unable to return to his family. This cognition

represented a metaphysical, existential terror: not of death, but of permanent conscious separation from his physical body and his loved ones.

A digital toxicology was conducted by reconstructing the patient's media consumption timeline for the three weeks prior to symptom onset. The parents, initially unaware of the specific content, confirmed he had received a personal tablet for his 10th birthday. In week-3, the patient, unsupervised, engaged in binge-watching sessions on a popular short-form video-sharing platform. His viewing history, later recovered by the parents, began with innocuous content related to his interests (such as Minecraft, gaming). In week-2, the platform's algorithm, designed to maximize engagement, began funneling him toward more sensational content. He developed an interest in Lucid Dreaming (the concept of controlling one's dreams). In week-1 (the binge), the algorithm subsequently recommended increasingly niche and metaphysical sub-genres, including Reality Shifting and Astral Projection. The patient consumed a high volume of tutorials, presented as how-to guides. Critically, the patient reported being drawn to content explicitly labeled with fear-based clickbait, such as "Warning: Do Not Watch at Night" or "Reality Shifting Gone Wrong". From a developmental psychology perspective, this aposematic labeling functions not as a deterrent but as a potent invitation, signaling high-arousal content to a curious preadolescent. He consumed this content, which portrayed astral projection as a real, accessible, and potentially perilous physiological act, just days before the onset of his phobia.

Given the patient's Balinese descent and the specific metaphysical nature of his fear, a Cultural Formulation Interview (CFI) was deemed essential to understand his phenomenology. The patient's family identifies as devout Balinese Hindu, actively participating in daily rituals and community temple life. Balinese cosmology, as explained by the parents and corroborated by literature, is structured around the fundamental duality of Sekala and Niskala. Sekala is the visible, tangible, material world—what is seen

and can be measured; Niskala: This is the unseen, spiritual, and energetic world. It is not a "heaven" or "hell" but a parallel dimension that co-exists with and interpenetrates Sekala. It is populated by ancestors, deities, and also potentially malevolent forces or spirits (such as Leak). For the patient and his family, Niskala is not a metaphor. The daily practice of placing Canang Sari (small offerings) is not symbolic but a practical, daily act of harmonization between these two worlds.

This pre-existing, deeply embedded cultural cosmology functioned as a "pathogenic amplifier" for the digital content. The digital content did not create the patient's belief in a separable soul or a spirit world; it hijacked it. The patient, in his Concrete Operational stage, created a semantic equivalence. The digital concept of "astral projection" to "another dimension" was immediately and seamlessly interpreted as a Niskala event. The warnings in the videos ("gone wrong," "stuck") were interpreted not as hyperbole, but as a genuine threat from a malevolent Niskala force, akin to the culturally specific concept of a Leak (a wandering, soul-stealing spirit). The Balinese Hindu concept of the soul, the Atman, is the sacred life-force. The patient's catastrophic cognition—"my soul... might not be able to return"—was a literal, culturally-syntonic fear of his Atman being permanently severed from his body by these malevolent digital-Niskala forces. This cultural priming explains the profound virulence of the digital pathogen. The videos provided a modern, high-definition, seemingly "scientific" visualization and instruction set for an ancient, abstract spiritual fear. The content hacked his cultural operating system, transforming a benign sleep state (dreaming) into a moment of maximal existential peril.

The patient's developmental history was unremarkable, with all milestones met appropriately. He is currently a 4th-grade student at a competitive urban school, where he consistently ranks in the top 5 of his class. His high academic rank, combined with parental reports of low-stress attitudes toward school, suggested that academic anxiety was not a contributing factor. He was described as socially well-integrated, with a stable and supportive peer group.

Prior to the precipitating event, his average daily screen time was 2-3 hours, primarily consisting of supervised console gaming (Minecraft, FIFA) and curated YouTube content. This level of consumption, while significant, is considered normative for his urban peer group and had not previously interfered with his sleep or academic functioning. This reinforces the "content quality, not quantity" hypothesis.

A comprehensive biopsychosocial assessment was conducted to rule out other potential etiological factors. There were no reports of school bullying, academic failure, or family discord (such as marital conflict, financial stress). There was no history of recent bereavement, personal or vicarious trauma, or any disclosure of physical or sexual abuse. There was no history of neurological events (such as seizures, head trauma), and no use of prescribed or illicit substances. His presentation was inconsistent with a primary neurological or organic sleep disorder (such as sleep apnea, restless leg syndrome).

The patient's presentation required careful differentiation from several related anxiety disorders; (1) Obsessive-Compulsive Disorder (OCD): This was ruled out. While the patient's fear was intrusive and recurring, it lacked the classic ego-dystonic quality (i.e., he did not see the fear as irrational; given his inputs, he felt it was highly rational). Furthermore, his primary response was avoidance (of sleep) rather than neutralization through ritualistic compulsions (such as checking, washing, re-assurance seeking beyond his parents' presence); (2) Panic Disorder: This was ruled out as the primary diagnosis. The patient's panic attacks were not spontaneous or unexpected. They were exclusively cued by the internal (anticipation of sleep) and external (bedtime routine) triggers. This presentation perfectly fits the DSM-5 criteria for Specific Phobia, Situational Type (300.29), with the phobic situation being the initiation of sleep; (3) Generalized Anxiety Disorder (GAD): This was ruled out due to the highly specific, non-pervasive nature of the anxiety. The patient did not exhibit generalized worry about school, health, or family wellbeing; his anxiety was pathologically "laser-focused" on the

singular catastrophic cognition related to soul-separation during sleep.

A multi-modal assessment protocol was utilized, combining physical examination, clinician-administered psychometrics, and parent-reported behavioral logs. In-office vital signs were notable: heart rate was 104 bpm (tachycardia for a resting 10-year-old), blood pressure was 110/70 mmHg, and respiratory rate was 22/min (shallow, thoracic breathing). He appeared hypervigilant and tremulous in the clinic. To differentiate this in-office anxiety ("white coat" effect) from the specific phobic response, and to rule out other causes of tachycardia, a 7-day at-home monitoring protocol was initiated. Parents were trained to use a pediatric pulse oximeter at two time points: 18:00 (baseline) and 21:00 (pre-sleep window, when symptoms began). The results from the home logs were unequivocal. At 18:00, his resting heart rate was consistently within a normal range (80-90 bpm). However, the 21:00 logs, taken before the onset of overt crying, showed a persistent tachycardic range of 95-110 bpm. This objective data confirmed a patterned, cued, and sustained sympathetic nervous system overdrive linked directly to the anticipation of sleep, consistent with a severe psychophysiological phobic response.

The Indonesian-validated version of the Spence Children's Anxiety Scale (SCAS), a 44-item self-report and parent-report measure, was administered. The scores presented are from the parent-report, which was deemed more reliable given the patient's distress. The patient's total score was 46. Based on normative data for Indonesian children (Mean = 24.5, SD = 9.2), a score of 46 is a finding of profound clinical distress. It places the patient >2.3 Standard Deviations above the mean, corresponding to the 98th percentile for anxiety (Table 1). The breakdown of the SCAS sub-scales provided a precise fingerprint of the patient's unique anxiety construct: (1) Physical Injury Fears (Score: 11 - High): This was the highest-scoring and most informative sub-scale. Items such as "I am scared of getting hurt" or "I am scared of... dying" were being interpreted by the patient through his specific

metaphysical lens. "Getting hurt" was equated with the "soul separation," and "dying" was equated with the "inability to return."; (2) Separation Anxiety (Score: 9 - High): This score did not reflect a traditional fear of being away from his parents at school. The clinical interview confirmed this was a metaphysical separation anxiety: the fear of being permanently separated from his family and his own body by the Niskala forces; (3) Panic and Agoraphobia (Score: 7 - Elevated): This score accurately captured the somatic experience of his phobia—the tachycardia, hyperventilation, and dizziness (the panic attacks) that occurred when he was "trapped" in the phobic situation (his bedroom at night).

A 7-day consensus sleep diary, maintained by the parents prior to the clinic visit, was analyzed to quantify the objective impact on sleep. The patient's average Sleep Onset Latency (SOL) was 140 minutes (2 hours and 20 minutes). This is a 460% increase from the Indonesian pediatric norm, which is less than 25 minutes. His calculated sleep efficiency (Total Sleep Time / Time in Bed) was 65%. A sleep efficiency below 85% is considered clinical insomnia. This poor efficiency was not due to nocturnal awakenings (sleep maintenance insomnia), but was a direct consequence of the profound, phobia-driven sleep-onset delay. The management plan utilized a biopsychosocial intervention centered on culturally responsive parental mediation.

### **Phase 1: Acute stabilization and cognitive reframing (Week 1)**

Phase 1 required socratic questioning & externalization technique. The clinician utilized Socratic questioning to help the patient differentiate between "Digital Fiction" and "Biological Reality."

*Clinician:* "When you play Minecraft, if your character falls in lava, do you get burned in real life?"

*Patient:* "No, that's just coding."

*Clinician:* "Exactly. The videos about 'Astral Projection' are also 'coding' created by YouTubers to get views. Just like the lava, they cannot touch your real body or your *Atman*."

**Table 1. Summary of Clinical Findings on Admission**

Patient: 10-year-old male | Baseline Assessment (Week 0)

CLINICAL FINDING	PATIENT'S RESULT	NORMATIVE VALUE	CLINICAL INDICATION
<b>Psychometric Assessment (SCAS)</b>			
SCAS Total Score	46	< 30 (Normal Range)	Severe (98th percentile)
SCAS Subscale: Physical Injury Fears	11	< 5 (Typical)	High (Correlated to fear)
SCAS Subscale: Separation Anxiety	9	< 5 (Typical)	High (Metaphysical fear)
SCAS Subscale: Panic & Agoraphobia	7	< 3 (Typical)	Elevated (Situational panic)
<b>Autonomic &amp; Physiological Assessment</b>			
In-Clinic Heart Rate (Resting)	104 bpm	70-100 bpm	Tachycardia
In-Clinic Respiratory Rate	22 / min	14-20 / min	Tachypnea (Shallow)
Pre-Sleep Heart Rate (Home Log)	95 - 110 bpm	70-90 bpm	Sustained Sympathetic Overdrive
<b>Sleep Metric Analysis (7-Day Log)</b>			
Average Sleep Onset Latency (SOL)	140 minutes	< 25 minutes	Severe Sleep Onset Insomnia
Sleep Efficiency	65%	> 85% (Healthy)	Clinically Poor
<i>Note: All findings are from the initial baseline assessment (Week 0) prior to intervention. SCAS = Spence Children's Anxiety Scale.</i>			

The Cultural Integration was included in the concept of *Niskala*. *Niskala* was reframed not as a threat, but as a protected space. The parents were instructed to perform a traditional *Canang Sari* offering specifically for the patient's bedroom, symbolizing spiritual protection and "locking" the room from malevolent influences. This utilized the patient's cultural belief system to provide a sense of safety.

### Phase 2: Structured Parental Mediation Protocol (Weeks 2-4)

A strict protocol was implemented based on the recommendations of Maftuhatur et al.

(2023) regarding consistency. Table 2 outlines a multi-modal therapeutic strategy designed to dismantle the "digital pathogen" at both the physiological and cognitive levels. Unlike passive restriction, this protocol leverages Parental Mediation Theory to transform the parent's role from a mere gatekeeper to an active cognitive scaffold. The intervention is divided into four synergistic components, each targeting a specific pathophysiological mechanism of the patient's somniphobia.

The first pillar involves the strict enforcement of a "digital sunset." The protocol mandates a hard cessation of all screen exposure at 18:00 hours, establishing a dedicated screen-free window of at least

three hours prior to the patient's bedtime. The scientific rationale here is twofold. First, it eliminates the emission of short-wavelength (blue) light, which is known to suppress the secretion of melatonin, the hormone essential for sleep initiation. Second, and more critical to this specific case, it allows sufficient time for the downregulation of the hypothalamus pituitary adrenal (HPA) axis. By removing the anxiety-provoking stimulus (the "metaphysical" videos) well before sleep, the protocol prevents the pre-sleep adrenergic surges (spikes in cortisol and norepinephrine) that were manifesting as tachycardia and chest heaviness in the patient.





Moving beyond restriction, the protocol necessitates Active Co-Viewing, dosed at three 30-minute sessions per week. In this phase, parents do not merely monitor content but engage in "real-time critique" alongside the child. This is based on Vygotsky's concept of scaffolding: the child, currently in the Concrete Operational stage, lacks the media literacy to deconstruct abstract digital fabrications. The parent acts as the "external prefrontal cortex," verbally labeling the content ("That visual effect is computer-generated, not a spirit"). This process converts the terrifying "unknown" into a manageable, explainable "known," effectively neutralizing the content's ability to trigger the amygdala's fear

response.

The third component addresses the technological environment. The "digital pathogen" thrives on algorithmic feedback loops; the more the patient watched "Astral Projection" videos, the more the platform recommended them. The protocol requires a weekly "Content Audit," where parents actively review watch history and block specific metadata tags (such as #dreamcore, #shifting, #creepypasta). This step is analogous to infection control; it sanitizes the digital environment, breaking the "filter bubble" and preventing the algorithm from re-exposing the recovering patient to sensationalized anxiety triggers.

Finally, the protocol addresses the void left by screen removal through Behavioral Replacement. The intervention prescribes engaging in non-digital, high-engagement activities—specifically cultural arts (Balinese dance) and communal play—during the critical 16:00–18:00 window. Scientifically, this targets the brain's reward system. Excessive screen use often leads to a "high-dopamine" tolerance, making real-world activities feel mundane (anhedonia). By enforcing structured "green time" and social interaction, the protocol retrains the patient's dopaminergic pathways to derive satisfaction from offline reality, reinforcing social grounding and reducing the psychological pull of the virtual world.

Table 2. The structured parental mediation protocol.

COMPONENT	ACTION ITEM / TECHNIQUE	DOSAGE / FREQUENCY	SCIENTIFIC RATIONALE
 <b>Restrictive Mediation</b>	Hard limit on screen time. Enforce "digital sunset."	Max 2 hours/day. No screens after 18:00.	Reduces blue light exposure to normalize melatonin. Allows HPA-axis downregulation (cortisol reduction) before sleep.
 <b>Active Co-Viewing</b>	Parents watch content *with* the child and provide "real-time critique."	3 sessions per week. (30 mins each).	Provides cognitive "scaffolding." The parent acts as an external prefrontal cortex to help the child perform reality testing.
 <b>Content Auditing</b>	Active review of YouTube/TikTok history. Blocking of specific tags (e.g., #dreamcore, #creepypasta).	Weekly review.	Removes the "digital pathogen" source. Sanitizes the digital environment and breaks the algorithmic feedback loop.
 <b>Behavioral Replacement</b>	Enforced engagement in non-digital activities (e.g., Balinese dance, Scouting, communal family time).	Daily (e.g., 16:00–18:00).	Rebuilds social grounding. Retrains dopaminergic pathways to find reward in offline reality, reducing anhedonia.



At the four-week follow-up, the patient demonstrated significant clinical improvement (Table 3). SCAS re-evaluation shows the total score dropped from 46 (pre) to 18 (post). Reliable Change Index (RCI) calculation using the standard error of difference ( $S_{diff}$ ) for the SCAS (approximately 5.5) reveals the change score is 28.

$$RCI = \frac{X_{pre} - X_{post}}{S_{diff}} = \frac{46 - 18}{5.5} = 5.09$$

Since  $5.09 > 1.96$ , the improvement is statistically reliable and not due to measurement error. The post-score of 18 falls within the normal range (Mean  $\pm$  1 SD). Zero panic attacks reported in the final week (Figure 1). Sleep Onset Latency (SOL) reduced from 140 minutes to an average of 25 minutes, normalizing the sleep architecture (Figure 2). Heart rate normalized to 80-85 bpm pre-sleep.

**Table 3. Pre- and post-intervention clinical metrics**

CLINICAL METRIC	BASELINE (WEEK 0)	FOLLOW-UP (WEEK 4)	NORMATIVE VALUE / TARGET	CHANGE
<b>SCAS Total Score</b>	<b>46 (Severe)</b>	<b>18 (Normal)</b>	< 30	↓ -60.8% (Significant)
SCAS Separation Anxiety	9	3	< 5	↓ -66.6%
SCAS Panic/Agoraphobia	7	1	< 3	↓ -85.7%
<b>Resting Heart Rate (Pre-Sleep)</b>	<b>104 bpm</b>	<b>82 bpm</b>	70-90 bpm	🟢 Normalized
<b>Sleep Onset Latency (SOL)</b>	<b>140 mins</b>	<b>25 mins</b>	< 30 mins	↓ -115 mins
<b>Sleep Efficiency</b>	<b>65%</b>	<b>92%</b>	> 85%	↑ +27%

### 3. Discussion

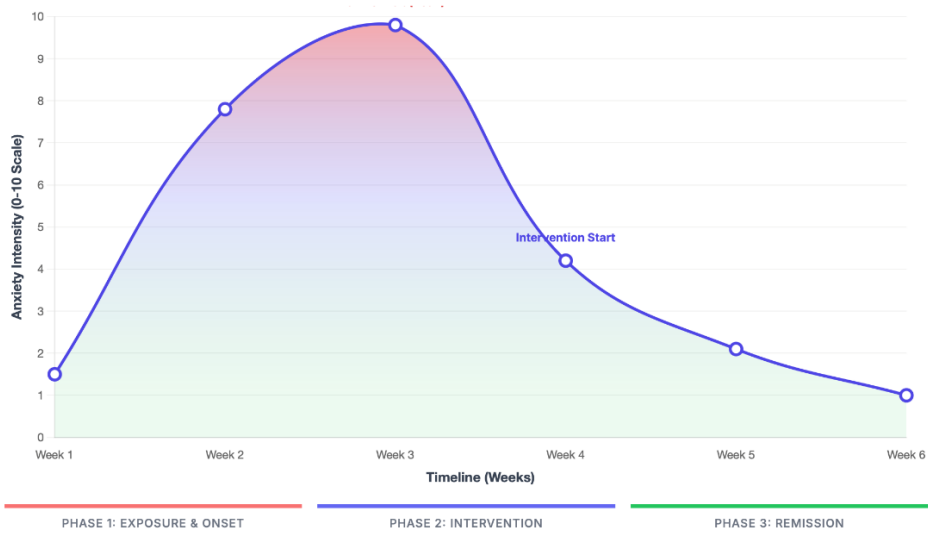
The clinical trajectory of this case serves as a microcosm for a broader, emerging phenomenon in pediatric psychiatry: the ability of specific, algorithmically curated digital content to act as a distinct etiological agent in the development of acute psychopathology. While the relationship between screen time duration and anxiety is well-documented, this case pivots the discourse toward the concept of the "Digital Pathogen"—a qualitative vector wherein the nature of the content, rather than its duration, precipitates a biological and psychological crisis. The pathophysiology of this patient's somniphobia and his subsequent remission can be rigorously deconstructed through the intersecting lenses of developmental psychology, neurobiology, and transcultural

psychiatry.<sup>11</sup>

The specific vulnerability of this 10-year-old patient was mediated not by a pre-existing psychiatric disorder, but by a critical mismatch between his cognitive developmental stage and the metaphysical sophistication of the content consumed. According to Piaget's theory of cognitive development, children aged 7 to 11 occupy the Concrete Operational Stage. In this phase, cognitive processing is characterized by the mastery of logic regarding physical, concrete objects. While the child begins to understand cause and effect, the capacity for hypothetical-deductive reasoning—the ability to systematically test abstract hypotheses and distinguish complex theoretical constructs from reality—is not yet fully matured.<sup>12</sup>

## Temporal Relationship Between Intervention and Symptom Reduction

A chronological representation of the patient's anxiety intensity, illustrating the rapid escalation following digital exposure and the subsequent remission following the implementation of the Structured Parental Mediation Protocol.



- **Week 1-2 (Red Zone):** Consumption of "Lucid Dreaming" content leads to rapid spike in somniphobia.
- **Week 3 (Peak):** Clinical presentation (SCAS Score 46). resting heart rate >100bpm.
- **Week 4-6 (Green Zone):** Introduction of Restrictive Mediation and Cognitive Reframing leads to steep decline in symptoms.

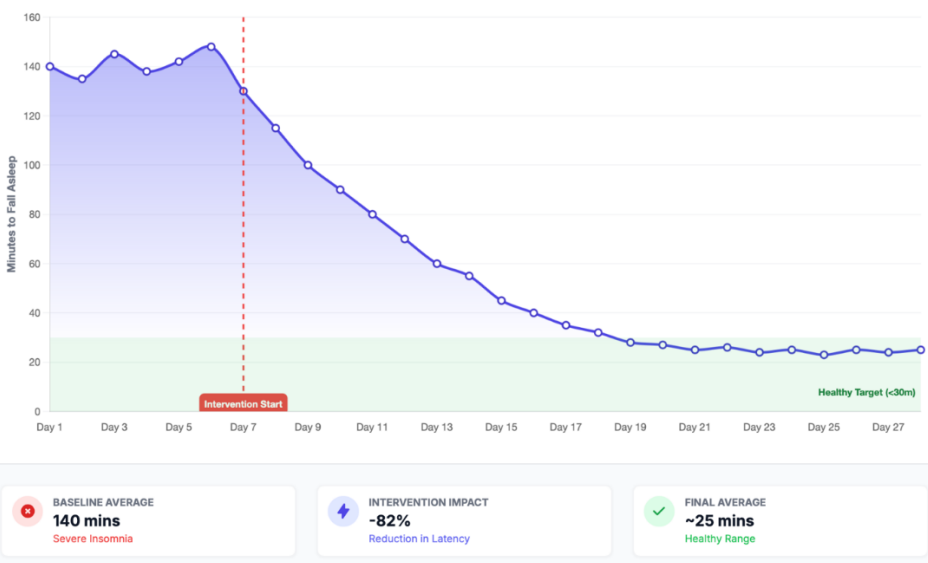
Figure 1. Temporal relationship between intervention and symptom reduction.

## Recovery of Sleep Architecture

Daily Trend of Sleep Onset Latency (SOL)

Duration  
28 Days

A longitudinal analysis of the time required for the patient to fall asleep (in minutes). The graph demonstrates acute insomnia (SOL > 120m) during the pre-intervention phase, followed by a rapid normalization of sleep latency after the initiation of the **Parental Mediation Protocol** on Day 7.



BASELINE AVERAGE  
**140 mins**  
Severe Insomnia

INTERVENTION IMPACT  
**-82%**  
Reduction in Latency

FINAL AVERAGE  
**~25 mins**  
Healthy Range

Figure 2. Recovery of sleep architecture.

The "Lucid Dreaming" and "Astral Projection" tutorials consumed by the patient exploited this developmental gap. These videos typically utilize hyper-realistic visual editing, authoritative voiceovers, and pseudo-scientific jargon to present metaphysical speculation as biological fact. For an adult (Formal Operational), this content is categorized as entertainment or spiritual theory. However, for a child in the Concrete Operational stage, the visual evidence provided by the video (such as editing tricks showing a soul leaving a body) is processed as empirical reality.<sup>13</sup> The child lacks the critical media literacy to decode the production techniques, leading to what can be termed a category error: treating digital fiction as a physiological threat (Figure 3). This phenomenon is further elucidated by Gerbner's Cultivation Theory, which posits that high-frequency consumers of media begin to perceive the real world through the lens of the content they consume. In this case, the "mean world syndrome"—typically applied to the fear of violence—manifested as a metaphysical threat syndrome.<sup>14</sup> The patient cultivated a worldview where the stability of his soul's attachment to his body was precarious. This was compounded by the mechanisms of Bandura's Social Cognitive Theory, where the influencers in the videos served as high-status models. When these models validated the danger of getting stuck in a dream dimension, the patient internalized this threat through observational learning, bypassing his own lack of experiential evidence.

The etiology of this acute anxiety cannot be separated from the technological environment in which it incubated.<sup>15</sup> The platform's recommendation algorithm functioned as a reinforcement mechanism. Once the patient engaged with the initial "Lucid Dreaming" query, the algorithm likely prioritized increasingly sensationalized content to maximize watch time—a phenomenon known as the rabbit hole effect. This created a filter bubble, an intellectual isolation where the patient was bombarded exclusively with content confirming the reality of Astral Projection dangers. This saturation created a false consensus effect; to the child, it appeared that "everyone" and

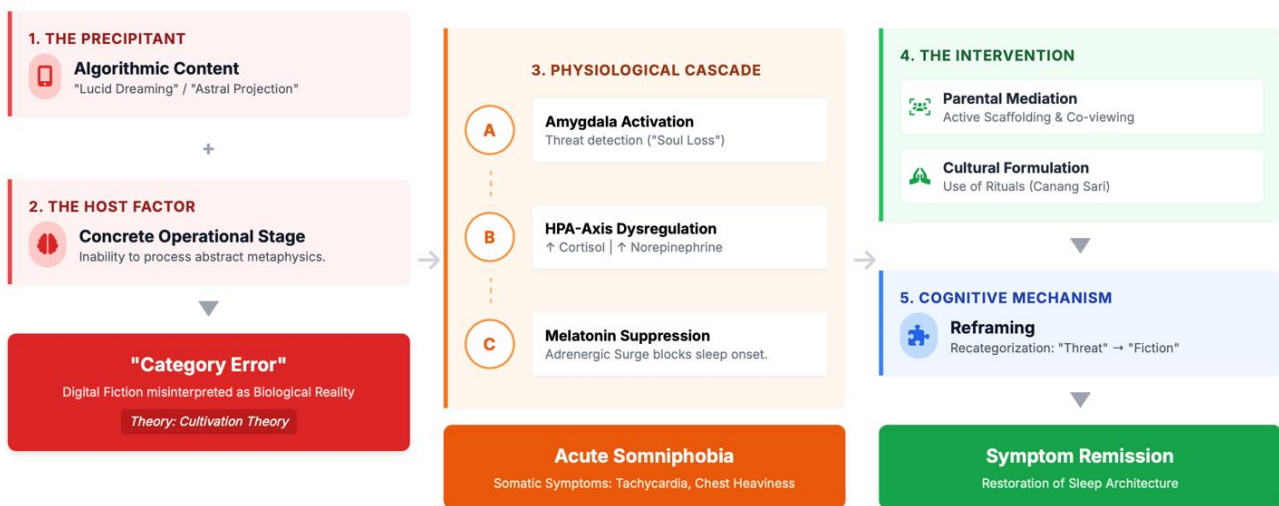
"science" agreed on these dangers. This digital echo chamber effectively dismantled his psychological defenses, overwhelming his ability to reality-test and triggering a primal survival response to a non-existent threat.<sup>16</sup>

Although serum biomarkers were not collected due to the outpatient nature of the case, the clinical phenotype—persistent tachycardia (104 bpm), hyperventilation, and somatic heaviness—allows for a robust theoretical formulation based on established neurobiology. The patient's presentation is consistent with acute HPA-axis (Hypothalamic-Pituitary-Adrenal) dysregulation. The specific fear cognition ("If I sleep, I die/dissociate") transformed the bed—a neutral stimulus—into a conditioned threat trigger. This suggests the involvement of the amygdala, which hijacked the prefrontal cortex's regulatory control. As the evening hours approached (the "anticipatory window"), the amygdala likely initiated a defensive cascade, signaling the hypothalamus to secrete Corticotropin-Releasing Hormone (CRH). This, in turn, stimulated the release of ACTH and subsequently cortisol from the adrenal cortex, alongside a sympathetic discharge of norepinephrine. This adrenergic surge creates a physiological paradox in the context of sleep. Biologically, the onset of sleep requires a dominance of the parasympathetic nervous system (rest and digest) and the secretion of melatonin. However, high levels of cortisol and norepinephrine are biologically antagonistic to melatonin. The norepinephrine induced the observed tachycardia and palpitations (the "fight or flight" response), while the cortisol maintained a state of hyperarousal. Consequently, a vicious psychophysiological cycle was established: the fear of the "dream world" triggered a sympathetic surge that physically prevented sleep initiation (insomnia).<sup>17</sup> The resulting sleep deprivation likely lowered the patient's anxiety threshold, making him more susceptible to intrusive thoughts the following night. The rapid normalization of Sleep Onset Latency (SOL) demonstrated in Figure 2 following the removal of the stressor supports the hypothesis that this insomnia

was functionally psychophysiological rather than organic in origin.

The rapid remission of symptoms validates the Parental Mediation Theory, specifically highlighting the superiority of a multi-modal approach over simple prohibition. As noted by Sanders et al. (2016), restrictive mediation (simply banning devices) often leads to "reactance"—a psychological pushback where the child desires the forbidden content more. In this case, restriction was necessary to break the HPA-axis activation loop, but it was the Active Mediation (co-viewing) that provided the cure. The intervention utilized Vygotsky’s concept of the "Zone of Proximal Development." The patient was unable to independently deconstruct the metaphysical lies of the videos. The parents, by watching with him and engaging in Socratic questioning (such as "Is that special effect real?"), acted as an external "prefrontal cortex." They provided the cognitive scaffolding necessary for the child to re-evaluate the threat. By labeling the content as "fiction" and "coding," the parents helped the child recategorize the stimulus from "threat" to "entertainment," thereby extinguishing the amygdala’s fear response.<sup>18</sup>

Perhaps the most significant finding of this case is the intersection of digital content with local cosmology. The patient’s Balinese Hindu background provided a specific cultural schema—the duality of *Sekala* (visible) and *Niskala* (unseen)—which the digital content hijacked. The "Astral Projection" videos resonated with, and warped, his pre-existing cultural belief in the soul (*Atman*) and spirits. The Cultural Formulation was therefore critical to the intervention’s success. A standard Cognitive Behavioral Therapy (CBT) approach might have dismissed the "soul separation" fear as irrational. However, by integrating the Balinese ritual of *Canang Sari* (daily offerings) into the bedtime routine, the intervention respected the patient’s ontological reality. The ritual served a dual purpose: spiritually, it reassured the child that his room was "locked" against malevolent forces; psychologically, it served as a grounding technique, a somatic signal to the brain that safety had been established. This demonstrates that digital health interventions in non-Western contexts cannot be generic; they must be culturally adapted. The digital world is global, but the psyche processing it remains deeply local.<sup>19</sup>



**Interpretation:** The model illustrates the progression from cognitive vulnerability (Stage 1) to physiological dysregulation (Stage 2), and the interruption of this cycle via multi-modal intervention (Stage 3).

Figure 3. Digital pathogen model.

This study is limited by its design as a single-subject case report (N=1), which inherently restricts causal inference and generalizability. However, the use of the Reliable Change Index (RCI) provides statistical weight to the clinical observation, suggesting the improvement was not due to chance or measurement error. Furthermore, the temporal association visualized in Figure 1—showing the sharp incline of symptoms post-exposure and the precipitous decline post-intervention—serves as a strong proxy for causality. The lack of objective biomarkers (such as salivary cortisol, actigraphy) relies on subjective parental reporting, which may introduce recall bias. Future research should aim to utilize longitudinal cohort designs to track the impact of metaphysical content on larger pediatric populations. Specifically, fMRI studies examining the neural activation of children watching "reality-bending" content versus standard cartoons could elucidate the specific neural pathways of the Digital Pathogen. In summary, this case challenges the psychiatric community to look beyond the clock of screen time and examine the content. It suggests that in the algorithmic age, we are treating not just biological imbalances, but information infections—cognitive pathogens that require digital, psychological, and cultural antibodies to resolve.<sup>20</sup>

#### 4. Conclusion

The case of digital nightmares serves as a sentinel event for pediatric mental health. It demonstrates that in the algorithmic age, the quality of content is as critical a risk factor as the quantity of screen time. Lucid Dreaming tutorials, while seemingly innocuous, can precipitate severe psychopathology in preadolescents by exploiting cognitive and cultural vulnerabilities. The statistically significant remission of symptoms following a structured, culturally responsive parental mediation protocol suggests that the role of the parent must evolve from gatekeeper to digital guide. Clinicians must routinely audit content history when assessing pediatric sleep and anxiety disorders.

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