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The Integration Bridge: From Threat-Dominant Cognition to Integrated Choice

Research Article

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Abstract

Background: Perfectionism, self-criticism, catastrophic thinking, excessive responsibility, reassurance seeking and behavioural control are commonly described as separate psychological symptoms or personality characteristics. In clinical practice, however, these patterns frequently co-occur and may reflect a shared threat-dominant mode of information processing.

Objective: This review integrates research on stress, threat processing, emotion regulation, perfectionism and cognitive control and introduces the Amygdala–Prefrontal Integration Model and its clinical translation, The Integration Bridge.

Methods: A narrative, theory-building review was conducted using established and recent literature on prefrontal–amygdala circuitry, stress-related changes in executive control, affect labelling, cognitive reappraisal, clinical perfectionism, self-criticism, intolerance of uncertainty and safety behaviours. The synthesis was combined with recurring observations from 32 years of full-time clinical neuropsychological practice. No new patient data were collected or analysed.

Results: The synthesis supports a model in which prolonged or repeatedly activated threat processing can narrow attention, interpretation, self-evaluation and behavioural selection. The proposed construct of threat-dominant cognition describes a functional state in which anticipated danger, error, uncertainty or negative evaluation receives disproportionate weight while contextualisation, cognitive flexibility and value-guided choice become less effectively recruited. Perfectionism and control may function as safety strategies. Their temporary relief can reinforce the prediction that safety depends on continued vigilance, forming a disaster–control cycle. The Integration Bridge targets this cycle through four iterative phases: Understand, Regulate, Integrate and Develop.

Conclusion: The model does not propose that the amygdala independently produces thoughts or that fear should be suppressed. It proposes that treatment should restore flexible integration of emotional signals with contextual, compassionate and value-based information. The model generates testable hypotheses, but controlled clinical research is required before efficacy claims can be made.

Keywords: Amygdala; Prefrontal Cortex; Threat-Dominant Cognition; Hypervigilance; Perfectionism; Self-Criticism; Emotion Regulation; Cognitive Flexibility; Neuropsychological Rehabilitation; Psychological Flexibility.

Abbreviations: PFC: Prefrontal Cortex; mPFC: Medial Prefrontal Cortex; dlPFC: Dorsolateral Prefrontal Cortex; vlPFC: Ventrolateral Prefrontal Cortex; PCS: Persistent Post-Concussion Symptoms; ACT: Acceptance and Commitment Therapy.

Introduction

The human brain is organised not only to understand the world but, more fundamentally, to survive within it. Before a situation is consciously analysed, its possible relevance to physical safety, social belonging, status, shame, loss and bodily integrity may already have influenced attention and physiological preparation. This rapid protective capacity is essential. It becomes restrictive when protection changes from a temporary response into a persistent mode of functioning.

Patients living in this state frequently describe themselves as being constantly on. They scan for errors, bodily changes, disapproval and future problems. Their thinking becomes repetitive and control-ori-

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ented. They may work excessively, prepare beyond what a task requires, avoid uncertainty, seek reassurance or criticise themselves in an effort to prevent mistakes. These patterns are often classified separately as anxiety, rumination, perfectionism, people-pleasing, avoidance or low self-worth. The present article proposes that, in at least a subgroup of patients, they are different expressions of a shared neuropsychological process.

The article introduces threat-dominant cognition as a clinical and theoretical construct. It also describes The Integration Bridge, a structured model intended to reconnect emotional and bodily information with contextualisation, cognitive flexibility, compassion, future consequences and consciously selected values. The model was developed by Erik Matser, a clinical neuropsychologist with 32 years of full-time experience in the assessment and treatment of neurological, neurocognitive and stress-related conditions. It arose from recurring patterns observed in patients with chronic hypervigilance, maladaptive perfectionism, burnout, persistent post-concussion symptoms and post-viral complaints.

Clinical experience can generate hypotheses, but it cannot establish treatment efficacy. Accordingly, this article distinguishes among evidence derived from existing research, the author's clinical synthesis and new propositions requiring empirical evaluation. The aim is to formulate a coherent and testable framework, not to claim that a new treatment has already been proven.

Materials And Methods

Narrative Review and Model Development

This article uses a narrative, theory-building review rather than a systematic review or meta-analysis. Literature was selected to address six domains central to the proposed model:

a.stress-related changes in prefrontal functioning;

b.amygdala–prefrontal interaction during threat processing;

c.cognitive reappraisal and affect labelling;

d.clinical perfectionism and self-critical evaluation;

e.uncertainty, safety behaviours and negative reinforcement; and

f.psychological flexibility, self-compassion and experiential learning.

Priority was given to influential reviews, meta-analyses and experimental studies that clarify mechanisms relevant to the model. The literature was synthesised with recurring clinical observations accumulated across neuropsychological practice. No identifiable case material, clinical dataset or treatment outcome data are reported. The proposed constructs and treatment stages should therefore be understood as a conceptual framework and research agenda.

Conceptual Safeguards

Three safeguards guided model construction. First, amygdala-driven thinking is treated only as a clinical metaphor; thoughts emerge from interacting neural networks and are not generated by the amygdala alone. Second, psychological processes are not assumed to explain every persistent physical or cognitive symptom. Third, reduced distress following an intervention is not taken as proof that an underlying medical condition was psychological. The model addresses modifiable processes that may interact with biological vulnerability and disease.

Results

Neurobiological Foundations

Threat processing is a network function involving the amygdala, hippocampus, insula, cingulate regions, prefrontal areas and autonomic systems. The amygdala contributes to learning and detecting emotional or motivational relevance rather than serving as an isolated fear centre. The hippocampus supplies contextual information; the insula contributes to representation of bodily states; cingulate regions participate in salience, conflict and error monitoring; and prefrontal regions support working memory, inhibition, reappraisal, planning and goal-directed behaviour [1-6].

Stress can change the balance among these functions. Neurochemical events associated with uncontrollable stress can impair prefrontal working memory and top-down control while strengthening more habitual and emotionally conditioned responses [1,2]. This is not a complete transfer of control from one structure to another. It is a shift in the relative availability and weighting of information. Under heightened threat, possible danger becomes easier to detect and harder to disengage from, while holding alternative explanations in mind becomes more demanding.

Cognitive reappraisal recruits frontal and parietal control regions and modulates emotional responding [7]. Meta-analytic work further indicates that amygdala–prefrontal connectivity changes dynamically during emotion regulation [8]. Affect labelling putting feelings into words has been associated with increased vlPFC activity and reduced amygdala response to emotional stimuli [9]. These findings support the general principle that naming and contextualising emotion can alter processing, although they do not prove that the exact wording used in The Integration Bridge produces a specific neural effect.

Threat-Dominant Cognition

Threat-dominant cognition is defined as a recurrent state in which anticipated danger, uncertainty, error or negative evaluation exerts a disproportionate influence on attention, interpretation, self-evaluation and behavioural choice, while contextualization, cognitive flexibility and value-guided processing become less effectively recruited.

The term dominant does not mean exclusive. A person may remain articulate, intelligent and apparently logical. The internal logic, however, is constructed from a narrowed selection of information. Threat-consistent evidence is amplified; safety evidence is discounted; immediate relief is prioritised over long-term learning; and uncertainty is treated as a problem requiring action.

Four functional domains

i.Attentional selection: Attention is repeatedly drawn towards possible mistakes, bodily changes, disapproval, incomplete tasks and future risks. Continuous monitoring increases the number of signals interpreted as evidence of danger.

ii.Interpretative narrowing: Possibilities begin to feel like probabilities and probabilities like certainties. The question 'Could this go wrong?' becomes 'This will probably go wrong' and then 'I must prevent it.'

iii.Threat-based self-evaluation: An unsatisfactory outcome is interpreted not only as information about a task but as evidence about personal worth. 'I made a mistake' becomes 'I am a failure.'

iv.Protective behavioural selection: Checking, avoidance, reassurance seeking, people-pleasing, overworking and perfectionistic preparation are prioritised because they reduce uncertainty or distress in the short term.

v.Perfectionism as a safety strategy

Perfectionism is multidimensional. High personal standards are not invariably pathological. The dimensions most consistently associated with distress include evaluative concerns, fear of mistakes, doubts about actions and self-critical reactions [10-13]. Clinical perfectionism has been defined by excessive dependence of self-evaluation on

pursuing demanding standards despite adverse consequences [10]. Meta-analytic findings link perfectionistic concerns to multiple forms of psychopathology and burnout [11,12].

The present model extends these accounts by conceptualising maladaptive perfectionism as a threat-regulation strategy. Its defining feature is not simply the wish to perform well but the predicted meaning of not performing well. Healthy striving asks, 'How can I do this well and what can I learn?' Threat-driven perfectionism asks, 'What will happen to me if I make a mistake?' The feared consequence may be criticism, rejection, shame, loss of status, loss of control or confirmation of inadequacy.

Success may fail to correct the underlying prediction because it is attributed to exhaustive preparation: 'It only went well because I checked everything.' The outcome reinforces the control strategy rather than building confidence. Self-criticism can function similarly. Its surface message is punitive-'You are not good enough'-but its protective intention may be, 'You must improve immediately because failure is unsafe.'

The Disaster Control Cycle

The proposed relationship between threat and protective behaviour is represented as a negatively reinforced learning cycle. Uncertainty activates a threat prediction. The prediction produces catastrophic interpretation and physiological activation. The individual responds with control, checking, reassurance, avoidance or perfectionism. This produces temporary relief. Relief is then attributed to the protective response, teaching the brain that control was necessary.

Uncertainty → threat prediction → catastrophic interpretation → control or avoidance → temporary relief → safety attributed to control → increased future vigilance

The cycle deprives the person of corrective experience. Instead of learning, 'I could tolerate the uncertainty,' the person learns, 'I was safe because I controlled it.' The short-term effectiveness of the behaviour explains its long-term persistence.

The Integration Bridge Clinical Model

The Integration Bridge is a structured, transdiagnostic model designed to restore flexible communication between emotional threat processing and reflective, contextual and value-guided functions. It does not ask patients to distrust emotion. It teaches them not to treat an emotional signal as a complete conclusion.

The protective system provides warnings. Reflective systems evaluate meaning, context and possible action.

The model consists of four iterative phases. They provide a conceptual sequence but are not rigidly linear. Patients may return to regulation when arousal rises, revisit understanding when a new pattern becomes visible and repeat integration each time an old prediction is activated.

Phase 1—Understand

The first phase answers: 'Why does my brain do what it does?' Psychoeducation reframes symptoms and coping patterns as possible products of a protective system. The patient learns the difference between a trigger, bodily response, prediction and protective instruction. The starting question changes from 'What is wrong with me?' to 'What is my brain attempting to protect me from?'

A central linguistic intervention separates identity from experience: 'I am afraid' becomes 'I experience fear'; 'I am a perfectionist' becomes 'I use perfectionistic strategies when I feel unsafe'; and 'I am my symptoms' becomes 'I experience symptoms whose meaning must be evaluated.' This is not positive thinking. It creates sufficient distance to observe an internal event without denying it.

A focused developmental timeline may explore when the brain learned that mistakes, criticism, uncertainty or loss of control were unsafe. The aim is not to reconstruct or repeatedly relive all traumatic events. It is to connect past learning with present prediction and ask whether a formerly adaptive strategy remains necessary in its current form.

The phase concludes with a personal disaster–control formulation identifying triggers, feared outcomes, bodily alarm, control strategies, temporary relief and what the brain learns from that relief.

Phase 2-Regulate

The second phase answers: 'How can I remain present when my protective system becomes activated?' Regulation is defined as maintaining or restoring access to reflective choice while emotion and bodily activation are present. It is not the successful elimination of discomfort.

Patients learn to identify early signs such as altered breathing, muscular tension, internal urgency, accelerated thinking and impulses to check, withdraw or seek reassurance. Methods may include paced breathing, Jacobson progressive muscular relaxation, grounding, mindful attention, rhythmic walking, graded movement, compassionate co-regulation and engagement with safe natural environments. Techniques are adapted to medical status and personal response.

Regulation exercises must not become new perfectionistic rituals. The patient is not taught, 'I am safe only if I perform this exercise correctly.' The message is, 'This method can create space; it cannot guarantee the disappearance of discomfort.' When arousal is high, the sequence is to notice activation, reduce urgency, orient to the present, postpone conclusions and introduce analysis only when flexibility returns.

Rigid rest can also become a safety behaviour. Some patients schedule, monitor and evaluate rest so intensely that physical inactivity coexists with continuous cognitive activation. The clinical term rest addiction may describe this pattern, but it is not proposed as a validated addiction diagnosis. The target is flexible alternation among activation, recovery, meaningful activity, movement, connection and sleep—not maximal inactivity.

Phase 3-Integrate

The third phase asks: 'What do I feel, what does my protective system predict, and what else is true?' The therapist guides seven recurring steps: name the experience; locate the bodily response; identify the protective prediction; identify the protective instruction; open the prefrontal toolbox; make an integrated choice; and review new learning.

The prefrontal toolbox contains questions that widen the information set: What are the observable facts? What is prediction and what is evidence? Is there an immediate threat? Which alternatives are possible? What would I say to someone I care about? What are the short- and long-term consequences of obeying the alarm? Which response is consistent with my values? What is the smallest responsible experiment I can perform?

I feel …; my protective system predicts …; I additionally know …; and therefore I choose …

Self-compassion is used as additional information rather than comfort alone. It recognises suffering, understands the protective origin of behaviour, preserves realistic responsibility and supports effective action. Self-criticism says, 'You must change because you are unacceptable.' Compassion says, 'This matters, and you deserve support while changing it.'

Behavioural experiments convert insight into learning. Examples include sending an adequate but non-perfect email, leaving a minor task unchecked, saying no without extensive justification, making a manageable decision without reassurance or engaging in graded activ-

ity without continuous symptom monitoring. The predicted outcome is recorded beforehand; actual events and coping capacity are evaluated afterwards. The question is not only whether nothing bad happened, but whether the person could respond if something difficult occurred.

Phase 4-Develop

The fourth phase asks: 'If protection no longer organises my entire life, where do I want to direct my energy?' Reduced threat creates space, but that space requires direction. Values such as connection, compassion, justice, self-discipline, inner peace, curiosity and personal growth provide a navigation system distinct from fear-based rules.

A value is distinguished from a guarantee or performance goal. 'Being compassionate' is a value; 'calling a friend' is a value-consistent action; 'never disappointing anyone' is a threat-based rule. Patients gradually restore exploration, movement, play, creativity, social connection and meaningful challenge. These activities are not merely rewards after recovery; they can provide experiences that are not organised around threat.

Confidence is redefined as evidence of coping rather than certainty of success: 'I can experience uncertainty, respond to difficulty and remain connected to myself.' Relapse planning identifies triggers, bodily signs, recurring predictions, control behaviours, regulation methods, Integration Bridge questions and values requiring renewed attention. Recurrence of fear is not failure; the relevant question is whether the bridge can be rebuilt (Table 1).

Table 1: Operational structure of The Integration Bridge.

Phase	Central question	Primary Mechanism	Observable Progress
Understand	Why does my brain do what it does?	Decentring, formulation and recognition of protective learning	Patient distinguishes experience, prediction and identity
Regulate	How can I remain present during activation?	Reduced urgency and increased tolerance of arousal	Patient delays automatic control and remains available for reflection
Integrate	What else is true and how do I choose?	Contextualisation, compassion, flexible appraisal and behavioural learning	Patients reduce safety behaviour and acts using broader information
Develop	Where do I direct the recovered space?	Values, exploration, connection and meaningful action	Life becomes less organised around danger prevention

Therapist Position and Delivery

The therapist acts as educator, co-regulator, compassionate investigator and facilitator of behavioural learning. The therapist should not become a substitute prefrontal cortex by repeatedly supplying certainty. Excessive reassurance may maintain the belief that uncertainty cannot be evaluated independently. The therapeutic stance combines validation with movement: Your response is understandable in light of what your brain learned; we will now investigate whether the same response remains necessary and helpful.'

The model can be delivered individually, in groups or in an intensive multidisciplinary programme. Group psychoeducation is suitable because precipitating events may differ while the processes of prediction, control and avoidance are shared. Individual work remains important when formulation is unclear, neurological or medical complexity is present, trauma-related activation cannot be contained in a group or risk assessment is required.

Safety and Clinical Boundaries

Relevant medical, neurological, psychiatric, sleep-related and pharmacological explanations must be considered before symptoms are attributed to threat-related processes. The model does not assume that every alarm is false. New neurological, cardiovascular or otherwise medically significant warning signs require appropriate assessment. Exposure and graded activity must be adapted to the patient's condition.

Stabilisation or specialist care may take priority in acute suicidality, psychosis, mania, severe dissociation, active substance dependence, unstable medical illness or cognitive impairment preventing informed participation. The Integration Bridge is a formulation and intervention framework, not a replacement for emergency, medical or condition-specific treatment.

Proposed Mechanisms and Measurable Outcomes

The proposed central mechanism is restored flexibility in the presence of threat. Potential mediators include reduced identity fusion, improved affect recognition, increased tolerance of uncertainty, reduced safety behaviour, greater cognitive flexibility, increased self-compassion, corrective experiential learning and stronger value-guided behavioural selection [14-18].

Treatment success should therefore not be defined solely by disappearance of anxiety, fatigue or physical symptoms. Relevant outcomes include reduced catastrophic interpretation, fewer control behaviours, greater tolerance of uncertainty, improved self-compassion, increased meaningful activity and improved social or occupational functioning.

Candidate measures for pilot research include validated instruments assessing clinical perfectionism, self-criticism and self-reassurance, intolerance of uncertainty, perseverative thinking, cognitive fusion, self-compassion, psychological flexibility, anxiety, fatigue, cognitive functioning and goal attainment. Behavioural tasks examining inhibition, set shifting or attentional bias may complement self-report. Measurements should be obtained before intervention, after intervention and at follow-up.

Testable Hypotheses

Maladaptive perfectionism and self-criticism will be associated with stronger threat appraisal and reduced tolerance of uncertainty.

The relationship between symptom burden and functional impairment will be partly mediated by catastrophic thinking, hypervigilance and control-based safety behaviour.

Early improvement will be expressed as increased behavioural flexibility in the presence of fear before complete reduction of fear.

Reduced safety behaviour and increased value-guided action will predict functional improvement beyond changes in symptom intensity.

Changes following The Integration Bridge will be mediated by cognitive flexibility, self-compassion, tolerance of uncertainty and reduced cognitive fusion.

Neurobiological studies will identify task-dependent changes in interactions among amygdala, prefrontal, insular and cingulate regions rather than a simple global reduction in amygdala activation.

Discussion

The Amygdala–Prefrontal Integration Model provides a unifying explanation for patterns often treated as separate clinical phenomena. Perfectionism, self-criticism, catastrophic prediction, people-pleasing, reassurance seeking and excessive control can all function as attempts to create safety. Their short-term effectiveness may explain persistence, while long-term consequences include cognitive exhaustion, behavioural restriction and continued threat expectancy.

The model differs from approaches framed primarily around eliminating anxiety. It proposes that the more fundamental objective is to increase the number of information sources available while anxiety is present. Fear becomes information rather than instruction. A feeling becomes an experience rather than an identity. A prediction becomes a possibility to be evaluated rather than a fact that automatically requires action.

This formulation also offers an alternative to describing patients as irrational, defective or insufficiently motivated. Behaviours that are dysfunctional in the present may have developed as understandable attempts to create safety in an earlier context. Recognising their protective origin makes compassion possible without removing responsibility for change.

Application to Persistent Neurological and Post-Viral Symptoms

The model may be particularly relevant when biological vulnerability interacts with sustained monitoring and control. Following concussion or post-viral illness, persistent threat monitoring, fear of symptoms, activity avoidance and perfectionistic self-demands may add cognitive and physiological load. This does not establish that these processes caused the original condition or explain every persisting symptom [19-22].

The clinically relevant question is not whether symptoms are physical or psychological. It is which biological, cognitive, emotional, behavioural and contextual processes are interacting in a particular patient. The Integration Bridge targets modifiable threat- and control-related components while preserving appropriate medical care and respecting genuine neurological or systemic pathology.

Limitations

The framework is based on narrative synthesis and long-term clinical observation. It has not yet been evaluated as a complete protocol in controlled trials. The term threat-dominant cognition requires psychometric and experimental validation. The proposed four-phase treatment combines elements overlapping with established approaches, including cognitive reappraisal, exposure, ACT, mindfulness and compassion-focused methods. Its potential novelty lies in their organisation around amygdala–prefrontal reintegration and the disaster–control cycle, not in claiming that every component is new.

The broad transdiagnostic formulation may improve clinical accessibility but risks obscuring meaningful differences among anxiety disorders, trauma-related conditions, neurological injury, post-viral syndromes and medical illness. Future research must determine for whom the model is appropriate, which components produce change, whether outcomes exceed nonspecific therapeutic factors and whether effects are sustained.

Research Agenda

A logical first study would be a prospective feasibility cohort with pre-intervention, post-intervention and three-month follow-up assessment. The primary outcome should be restored cognitive and behavioural flexibility in the presence of threat rather than symptom disappearance alone. Feasibility, acceptability, adherence and adverse events should be reported alongside clinical outcomes. A subsequent randomised controlled study should compare the protocol with an appropriate active control and examine proposed mediators.

Conclusion

The human protective system is not an enemy. Fear, vigilance and rapid threat detection are necessary for survival. Difficulties arise when protective information receives so much weight that contextualisation, flexibility and conscious choice become restricted.

The Integration Bridge proposes that recovery does not require the elimination of fear. It requires renewed communication among emotional experience, bodily information, context, compassion, future consequences and values. The patient learns: 'This is what I feel. This is what my protective system predicts. This is what I additionally know. And this is how I consciously choose to respond.'

The transition from survival to freedom is therefore not a movement away from emotion. It is a movement towards integration. The model is clinically grounded and scientifically testable, but its efficacy must now be established through prospective research.

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Conflicts of Interest

Erik Matser is the developer of The Integration Bridge and the author of the related book manuscript From Survival to Freedom. These intellectual and professional interests are disclosed for transparency. No other conflict of interest is declared.

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Data Availability

No new empirical data were collected or analysed for this article.

Ethics Statement

This article presents a theoretical and clinical model and contains no identifiable patient data or results from a formal research study. Institutional ethical approval was therefore not required. Future empirical studies of the model should undergo appropriate ethical review and informed-consent procedures.

References

1. Arnsten AFT (2009) Stress signalling pathways that impair prefrontal cortex structure and function. Nat Rev Neurosci 10: 410-422.
2. McEwen BS, Morrison JH (2013) The brain on stress: vulnerability and plasticity of the prefrontal cortex over the life course. Neuron 79: 16-29.
3. Kredlow MA, Fenster RJ, Laurent ES, Ressler KJ, Phelps EA (2022) Prefrontal cortex, amygdala, and threat processing: implications for PTSD. Neuropsychopharmacology 47: 247-259.
4. Kenwood MM, Kalin NH, Barbas H (2022) The prefrontal cortex, pathological anxiety, and anxiety disorders. Neuropsychopharmacology 47: 260-275.
5. Friedman NP, Robbins TW (2022) The role of prefrontal cortex in cognitive control and executive function. Neuropsychopharmacology 47: 72-89.

6. Ochsner KN, Silvers JA, Buhle JT (2012) Functional imaging studies of emotion regulation: a synthetic review and evolving model of the cognitive control of emotion. Ann N Y Acad Sci 1251: E1–E24.

7. Buhle JT, Silvers JA, Wager TD (2014) Cognitive reappraisal of emotion: a meta-analysis of human neuroimaging studies. Cereb Cortex 24: 2981-2990.

8. Berboth S, Morawetz C (2021) Amygdala-prefrontal connectivity during emotion regulation: a meta-analysis of psychophysiological interactions. Neuropsychologia 153: 107767.

9. Lieberman MD, Eisenberger NI, Crockett MJ, Tom SM, Pfeifer JH, et al. (2007) Putting feelings into words: affect labeling disrupts amygdala activity in response to affective stimuli. Psychol Sci 18: 421-428.

10. Shafran R, Cooper Z, Fairburn CG (2002) Clinical perfectionism: a cognitive-behavioural analysis. Behav Res Ther 40: 773-791.

11. Limburg K, Watson HJ, Hagger MS, Egan SJ (2017) The relationship between perfectionism and psychopathology: a meta-analysis. J Clin Psychol 73: 1301-1326.

12. Hill AP, Curran T (2016) Multidimensional perfectionism and burnout: a meta-analysis. Pers Soc Psychol Rev 20: 269-288.

13. Curran T, Hill AP (2019) Perfectionism is increasing over time: a meta-analysis of birth cohort differences from 1989 to 2016. Psychol Bull 145: 410-429.

14. Hayes SC, Luoma JB, Bond FW, Masuda A, Lillis J (2006) Acceptance and commitment therapy: model, processes and outcomes. Behav Res Ther 44: 1-25.

15. Kashdan TB, Rottenberg J (2010) Psychological flexibility as a fundamental aspect of health. Clin Psychol Rev 30: 865-878.

16. MacBeth A, Gumley A (2012) Exploring compassion: a meta-analysis of the association between self-compassion and psychopathology. Clin Psychol Rev 32: 545-552.

17. Craske MG, Treanor M, Conway CC, Zbozinek T, Vervliet B (2014) Maximizing exposure therapy: an inhibitory learning approach. Behav Res Ther 58: 10-23.

18. Carleton RN (2016) Into the unknown: a review and synthesis of contemporary models involving uncertainty. J Anxiety Disord 39: 30-43.

19. Silverberg ND, Iverson GL (2021) Expert panel survey to update the American Congress of Rehabilitation Medicine definition of mild traumatic brain injury. Arch Phys Med Rehabil 102: 76-86.

20. Polinder S, Cnossen MC, Real RGL (2018) A multidimensional approach to post-concussion symptoms in mild traumatic brain injury. Front Neurol 9: 1113.

21. Davis HE, McCorkell L, Vogel JM, Topol EJ (2023) Long COVID: major findings, mechanisms and recommendations. Nat Rev Microbiol 21: 133-146.

22. Yong SJ (2021) Long COVID or post-COVID-19 syndrome: putative pathophysiology, risk factors, and treatments. Infect Dis (Lond) 53: 737-754.