



A Toolbox for Use During the Post-Pandemic Era: Preparing Youth for Re-entry

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Accepted: 18 September 2023 / Published online: 25 October 2023
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Abstract

While most individuals hope that the COVID-19 viral global pandemic is over, waves of infection and multiple mutating variants persist prompting considerable uncertainty. Re-entering previously familiar routines is especially difficult for youth challenged by excessive intolerance of uncertainty and accompanying anxiety. Therefore, constructing a conceptual map to explain these stressors and a viable skill set to cope with their anxiety are potentially helpful tasks. This is the exact focus of this article. A review of the past and current impact of COVID-19 on children and adolescents' lives sets the proper context. Intolerance of uncertainty and health anxiety are two core constructs used to understand the psychological impact of the viral outbreak. Consequently, these variables are explained and summarized. A cognitive-behaviorally based toolkit focused on equipping youth experiencing high intolerance of uncertainty and anxious symptoms with skills for re-entry into an uncertain environment is outlined. Various processes and practices are illustrated via a representative confabulated case example.

Keywords Cognitive behavioral therapy · COVID-19 · Intolerance of Uncertainty · Anxiety

Introduction

The COVID-19 viral outbreak disrupted lives in previously unimaginable ways. Children and families lived in a world locked down through quarantines where schools, businesses, movie theatres, libraries and playgrounds were shuttered due to contagion fears. Playdates, birthday parties, sleepovers, visits with grandparents, proms, graduations, and sporting events were all cancelled indefinitely. Upended routines, social isolation, grief, and health-related worries were the norm. This once in 100 year public crisis created much uncertainty which bred widespread anxiety and fear. Now, consider re-entering this still uncertain world offering in-person schooling, added routines, new viral waves as well as mutating variants, increased peer interaction, and performance pressures. Adapting to these dynamic forces is challenging and youth need a conceptually sound toolkit based on coherent theory as well as evidence-based interventions

to manage their anxiety associated with ambiguous circumstances. Consequently, this is the precise focus of the article.

Approximately 140,000 youth lost a parent or grandparent to COVID-19-related illnesses during the peri-pandemic period (U.S. Surgeon General, 2021). Rosen et al. (2021) found the number of stressors associated with the viral outbreak predicted both internalizing and externalizing symptoms. The prevalence of clinically significant depression and anxiety in the peri-pandemic period was significantly higher than first estimated and is poised to increase in the post-pandemic years (Racine et al., 2021). Behavioral health professionals and policy experts expect referrals for psychotherapy and pharmacology to continue to increase creating a subsequent youth “mental health crisis (U.S. Surgeon General, 2021).”

Data collected from the first year of COVID suggested that 1 in 4 youth globally were displaying symptoms of clinical depression and 1 in 5 youth showed symptoms of clinical anxiety (Racine et al., 2021). Traditionally marginalized populations such as youth from Black Indigenous People of Color (BIPOC) families, LGBTQ+ individuals as well as children who were recent immigrants, received limited incomes, and lived in rural area were disproportionately impacted by the COVID-19 crisis (U.S. Surgeon General, 2021). Lack of health care coverage, exclusion

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from governmental relief packages, rising hate crimes, racism, and other forms of oppression represented additional typical adversities (Chavira et al., 2022). Further, many families experienced considerable stress due to serving as front-line workers without remote employment opportunities, mandated furloughs, and food insecurities (Jones et al., 2023). Haller et al. (2022) found the pandemic accelerated the rates of internalizing disorders in youth especially for those individuals who experienced more stressors. Courtney and colleagues (2020) argued that while the pandemic will eventually end, its aftermath will likely increase the numbers of anxious and depressed youth. Therefore, the effects of the pandemic are likely not self-limiting (Czeisler et al., 2020).

Ngov and colleagues (2023) concluded, “the ideas of schools as infectious disease incubators is one of the most common worries when it comes to COVID-19 (p. 326).” Consequently, fear of re-entry into the next normal is also expected (Sanderson et al., 2020). These stressors certainly strain young people’s coping resources so bolstering their skill sets is a clinical necessity.

This article addresses the dynamic interaction of pandemic stressors, intolerance of uncertainty, and health anxiety in youth. The well-known but sometimes overlooked construct of intolerance of uncertainty is explained. A discussion of health anxieties in youth follows. These variables form the conceptual foundation for the cognitive behaviorally based intervention package that comes next. A case conceptualization predicated on these theoretical notions guides the treatment recommendations. A modular CBT approach is illustrated and augmented by several clinical examples.

Intolerance of Uncertainty (IU) in Youth

Intolerance of uncertainty is a dispositional trait variable that fuels fear of the unknown (Carleton, 2016). Often, individuals harbor catastrophic negative predictions about ambiguity (Hebert & Dugas, 2019). Novel, unpredictable, and unexpected circumstances typically increase perceptions of uncertainty. More specifically, young people with higher intolerance of uncertainty are more likely to interpret ambiguity as threatening in objectively neutral situations (Kendall et al., 2020). In turn, catastrophic predictions about these circumstances strengthen anxiety, worry, and the use of safety behaviors (Kendall et al., 2020). Catastrophizing, rumination, and avoidance are subjectively overvalued because they create a mere illusion of control (Carleton, 2016). Consequently, worries about loss of control increase.

The peri-pandemic as well as the post-pandemic re-entry period represent uncertain contexts. Asmundson and Taylor (2020) logically suggested that heightened intolerance of uncertainty could increase COVID-related fear. More

recently, Li et al. (2021) proposed COVID-19-specific intolerance of uncertainty as a tendency to overestimate the threat of infection, illness, and complications. Further, Paluszek and colleagues (2021) advanced a COVID-stress syndrome characterized by emotional (e.g., fear of the virus, foreigners who may transmit virus) and behavioral (e.g., reassurance-seeking, checking COVID-19-related information) manifestations. Individuals with greater anxiety sensitivity and an anxiety disorder diagnosis reported more COVID-19 related stress—a relationship that is potentially strengthened by excessive intolerance of uncertainty (Paluszek et al., 2021).

Intolerance of uncertainty also determines how children recognize and react to potential threats to physical and psychological well-being (Petrongolo et al., 2020). Additionally, inhibitory IU in which people become emotionally frozen with fear may be coupled with restricted coping resources. Consequently, young people’s negative self-beliefs about their ability to effectively problem solve over time are reinforced which leads to increased use of worry as a coping strategy (Lee & Woodruff-Borden, 2018). These findings suggest that cognitive restructuring and problem-solving interventions are indicated to ameliorate emotional functioning.

Intolerance of uncertainty initiated or exacerbated by COVID-19 may be particularly sensitive to overgeneralization to non-pandemic situations. Moreover, prolonged intolerance of uncertainty prompts significant negative outcomes. A long-term consequence of intolerance of uncertainty such as rumination was typically found in anxious and depressed school-aged children (Evans et al., 2020). Elevated intolerance of uncertainty was associated with more severe and comorbid anxious pathologies over a single Generalized Anxiety Disorder diagnosis (Rifkin & Kendall, 2020). Not surprisingly then, intolerance of uncertainty is considered a common pathway to generalized anxiety, panic disorder, specific phobias, social anxiety disorder, obsessive–compulsive disorder, and health anxiety in children and adolescents (Evans et al., 2020).

Health Anxiety in Youth

Health anxiety is a relatively new concept that was recently introduced in the DSM-V classification system under the category of illness anxiety disorder (Tyrer, 2018). Tyrer (2018) asserted that health anxiety should be classified diagnostically within the anxiety disorders spectrum. Further, Newby et al. (2017) argued that the classification of health anxiety as an illness anxiety disorder and somatic symptom disorder is more reliable than when it was classified as hypochondriasis in DSM-IV. Health anxiety is common among youth and these individuals are particularly vulnerable to its sequelae (Haig-Ferguson et al., 2020). Specifically, the condition is

characterized by both physical and psychological symptoms. Similar to other anxiety disorders, health anxiety is marked by worry, ruminations, intrusive thoughts, checking, avoidance, and maladaptive safety-seeking behaviors. Hypervigilance to body cues is paramount (Tyrer, 2018). Common bodily variations such as coughing, sneezing, muscle aches, and even blemishes are seen as danger signals. This threat appraisal process is a function of excessive worry about developing severe diseases (Tyrer, 2018).

During the COVID-19 pandemic, health anxieties spiraled because there was much uncertainty regarding the novel virus (Asmundson & Taylor, 2020). Conditions such as pre-existing health anxiety and obsessive–compulsive disorder also intensified due to continuous COVID-19-related media coverage and affective responses to the pandemic (Sauer et al., 2020).

Youth with pre-existing medical illnesses and prior associated behavioral health disorders were susceptible to COVID-19 infections with greater complications (Asmundson & Taylor, 2020). Not surprisingly, these patients with pre-existing medical conditions report hypervigilance to somatic perceptions. Wheaton et al. (2021) explored the relationship between health anxiety, obsessive–compulsive disorder, intolerance of uncertainty, and fear related to the spread of the virus that was prevalent at the beginning of the pandemic. Anxiety about the pandemic was positively correlated with fear of illness, obsessive–compulsive symptoms, and health anxiety. The authors noted that these results were consistent with data from past pandemics showing relationships between heightened illness anxiety and obsessive–compulsive disorder.

The connection between health anxiety, perception of danger, and intolerance of uncertainty provides a compelling explanation for the emergence of anxiety disorders amid the COVID-19 pandemic and beyond (Akbari et al., 2021). Akbari and colleagues' (2021) results revealed that intolerance of uncertainty and perception of danger mediated the relationship between pandemic-related distress, family infection, and the development of health anxiety as well as the subsequent development of other anxiety disorders. Thus, individuals who were high in intolerance of uncertainty and perceived more threat of illness were more likely to report clinically significant anxiety. This work illustrates how some people become reasonably alarmed during the crisis, take measured precautions, and cope relatively well while others become extremely fearful, ruminate, catastrophize, and engage in undue avoidance.

The combination of the global pandemic, inherent uncertainties, and individuals' pre-existing intolerance of uncertainty created a synergistic effect igniting waves of health-related anxieties. Helping children and adolescents manage the next normal presents a challenge to behavioral health professionals. Therefore, becoming equipped with a set of

effective and efficient CBT-oriented change-makers is an important clinical endeavor.

Outfitting for Re-entry: Inoculating Lexi with Coping Skills

In this section, recommendations for equipping youth with tools to mitigate intolerance of uncertainty and accompanying emotional distress when they re-enter the post-pandemic world are offered. A confabulated case which represents several typical patients is presented and a case conceptualization emphasizing intolerance of uncertainty as a core construct is described. An evidence-based modular approach to CBT is then applied to the confabulated example.

Case Description: Lexi

Lexi is a 12 year-old Asian-American youth who presented to the clinic complaining of feeling jittery, jumpy, distracted, and anxious upon returning to classes after school closures were ended. Prior to the pandemic, she was an A student, a member of the math team, class student council representative, soloist in the school choir, and a star striker on her soccer team. Her parents described Lexi as very achievement oriented, ambitious, perhaps a bit too perfectionistic, and controlling. Lexi disclosed that she always wanted everyone to like her and to do things right. She and her parents agreed that she always was “somewhat of a worrier,” but her anxieties have escalated during the pandemic and post-pandemic re-entry period. Presently, Lexi worries about getting sick and passing it on to others. Additionally, social anxieties and fears about negative evaluation are multiplying.

During the pandemic, her grandparents moved into the home with Lexi and her family. Her grandmother contracted a mild to moderate case of COVID which required medication and quarantine measures within the home. Lexi disclosed that this was very frightening, unexpected, and caused her to be “very careful” about germs. The family cleaned quite diligently and were extremely careful to avoid any contamination. Both parents and Lexi shared that she wants to know “everything in advance” as well as now requiring reassurance that things will be OK and she is not coming down with any illness or causing contagion. Lexi and her parents noted that emotional control, others' approval, and achievement are highly valued within family.

She dreads unanticipated changes such as switching seating arrangements in class, pop quizzes, and having a substitute teacher. Lexi said, “If I get COVID or even a cold, I think people will think I am dirty.” Not surprisingly, she holds numerous anxiogenic beliefs such as “I will get sick if I am around other kids,” “I must know everything in advance, something bad will happen,” “When I don't know what will

happen, I worry it will be awful.” “I must be in absolute control,” and “If I am not perfect, I am no good.” In sum, all these presenting problems contribute to Lexi’s reluctance to attend school Case Conceptualization.

The case conceptualization is guided by the framework integrating intolerance of uncertainty and pandemic-related stressors developed by Korte and her team (2022). In this scheme, the pandemic is viewed as a critical antecedent giving rise to increasing intolerance of uncertainty (diathesis) which in turn increases avoidance, catastrophic expectations, fears of loss of control, checking behavior, and magnification of threat probabilities. Moreover, these behaviors appear amplified by the high value being placed on approval, orderliness, and achievement.

Lexi’s pre-existing vulnerabilities to perfectionism as well as a strong desire for control likely appear related to intolerance of uncertainty and anxiety. It seems quite reasonable that the pandemic-related stressors in general and more specifically, her grandparents’ infection ignited full-blown symptoms of anxiety related to illness and contagion, loss of loved ones, as well as a deepening fear of the unknown. Her anxiety is perpetuated by various safety behaviors such as avoidance, overvaluing control, excessive checking, and reassurance seeking. Consequently, she needs to acquire flexible coping skills to reduce the safety behaviors.

Cognitive behavioral therapy spectrum approaches are recommended for treating youth experiencing internalizing disorders in the post-pandemic era (Chavira et al., 2022). Additionally, a comprehensive systematic narrative review concluded that the approach is effective with Asian American youth (Xin et al., 2022). A recent meta-analysis demonstrated impressive effect sizes for CBT in treating youth presenting with depressive ($g = 1.31$) and anxious ($g = 1.61$) symptoms (Rith-Najarian et al., 2019). Since CBT’s flexible paradigm is governed by its theoretical maxims rather than defined by any specific procedures, various techniques from third wave approaches such as Dialectical Behavioral Therapy and Acceptance and Commitment Therapy are easily integrated into the approach (Friedberg, 2015). Evidence-based practice is historically defined as the synthesis of available research findings, clinical wisdom, and patient characteristic/preferences (Spring et al., 2019). Accordingly, the multiple sample techniques are all rooted in the empirical science supporting CBT spectrum procedures for youth, clinical experience, and patients’ contexts.

CBT-based treatment with Lexi begins with psychoeducation. Orienting children and caregivers to treatment is an essential first step in the intervention package. Since children who are intolerant of uncertainty are fearful when in doubt or lacking information, providing some knowledge about the therapeutic process often fosters engagement. Additionally, introducing the idea that the way they view uncertainty shapes their reactions to unknown situations

is often a good idea. Past experiences with roller coasters or surprise parties are metaphors suggested to patients such as Lexi as ways in which uncertainty may be viewed in a more positive light. Hebert and Dugas (2019) offered another alternative involving recommending trying to see the world through uncertainty glasses. Teaching Lexi to scale her anxiety on a numerical scale (e.g. 1–5, 1–10, etc.) is an important psychoeducational task. In this way, Lexi will learn that her emotions are not categorical (e.g. all or none) but rather dimensional (e.g. varying in intensity on a continuum). Finally, administering and sharing patients scores on the new Intolerance of Uncertainty Scale for Children (IUS-A-C; Rifkin & Kendall, 2020) is a helpful psychoeducational option. Consequently, children and their caregivers can concretely identify their perceptions regarding uncertainty.

Beginning with relatively non-intrusive behavioral coping skills training is a sensible strategy. Relaxation, mindfulness, distress tolerance, acceptance skills, and behavioral activation are well-suited to Lexi’s presentation marked by anxiety and avoidance. Behavioral activation owns very solid empirical support with youth ((Malik et al., 2021). For example, Lexi and her therapist might collaboratively construct a behavioral activation experiment where she attends soccer practice for gradually increasing time (e.g. 25%, 50%, 75%, 100% of practice) and rates her mood before and after attendance. Additionally, relaxation will target her autonomic arousal (e.g. jumpiness, jitteriness).

Developing initial acceptance, distress tolerance, and mindfulness tools is likely indicated for Lexi. Mindfulness techniques teach her to experience anxieties and uncertainties non-judgmentally from an observer lens. Additionally, mindfulness enables Lexi to remain fully present in the here and now. Accepting her distress is yet another key goal. Twohig and colleagues (2015) explained that accepting aversive emotions “means genuinely being open to having them for as long as they occur-without attempting to change them-even if one does not enjoy them (p. 167–168).” It is important for Lexi to recognize that distress tolerance, mindfulness, and acceptance techniques are active rather than coping strategies. Moreover, she will eventually rely on them during the subsequent exposure tasks.

Clearly, Lexi presents with elevated intolerance of uncertainty which makes unpredictability and uncontrollability seem disastrous. Therefore, empowering her with decatastrophizing skills is a critical next step. Decatastrophizing is a characteristic cognitive behavioral skill that helps patients question the authority of their dire predictions. The procedure is implemented via a Socratic Dialogue characterized by several major questions (e.g., What’s the worst thing that could happen? What’s the best that could happen? What’s the most likely thing to happen? If disaster is most likely, how can you problem solve?).

As the literature review revealed, youth with health-related worries often confuse probability (will happen) with possibility (might) happen. Simply, they overestimate the probability of the dreaded circumstance occurring. Further, anxious youth often form mental equations that conflate possibility with probability (e.g., possible = probability). Lexi is no exception. Consequently, teaching her to separate what is possible from what is probable via cognitive restructuring procedures is the next treatment focus. For patients who do this mental calculus and understand simple mathematical symbols (>, =, <), *Changing the sign* may be a fitting technique. A new equation that spawns a more adaptive coping thought (e.g., “possible does not equal probable. It is far less likely”) may be a useful initial self-instructional procedure.

Mighty Predictions is a basic self-instructional cognitive restructuring procedure based on the *Just Because* technique (Elliott, 1991). *Mighty Predictions* coaches distressed youth to re-engineer their absolutistic thinking and replace it with more relativistic reasoning. Once patients identify their over-estimation of the probabilities of the feared event occurring (e.g., I will get really sick and have to spend months in the hospital), they are taught to replace “will” with “might” (e.g., “I might get really sick and have to spend months in the hospital”). Next, they develop an action-oriented problem-solving strategy to employ if the circumstance happens (e.g., “If that happens, how can you cope with/handle that?”).

Exposure is essential when treating anxiety (Banneyer et al., 2018). Currently, exposure-based interventions are guided by Inhibitory Learning Theory which emphasizes violation of threat expectancies over habituation (Craske et al., 2022). McGuire and Storch (2019) explained that varying contexts in which exposure occurs, maximizing expectation-outcome discrepancies, eliminating safety behaviors, and building distress tolerance/acceptance skills are pivotal augmentations for better exposures. An added benefit to the Inhibitory Learning Model is

it’s congeniality with third wave approaches such as Acceptance and Commitment Therapy as well as Dialectical Behavioral Therapy (Twohig et al., 2015). Finally, treatment outcomes based on exposure-treatment appear relatively free from demographic moderators and seemed influence by only some comorbidities (Norris & Kendall, 2021).

There are many possible exposure procedures that might be helpful. The key is that they all should incorporate some sense of randomness and young patients are coached to approach new, unfamiliar, and unpredictable situations rather than avoid them. For patients similar to Lexi, we recommend varying types of exposure (e.g. decontextualization). Since Lexi is a singer, an early exposure involving Karaoke, is a logical choice. Uncertainty is amplified when youth are invited to sing aloud unfamiliar or unknown songs. Simply, they cannot prepare in advance or exert control over the song selection. Therefore, randomly selecting songs to sing that are unfamiliar to Lexi represents a solid plan. Additionally, an activity grab bag exercise where Lexi blindly picks uncertain things to do is another alternative. Finally, improvisational theatre games are all based on uncertainty and offer yet another option (Fessell et al., 2020). Fessell and colleagues concluded that this type of exposure is particularly suitable for young patients whose social anxiety or generalized anxiety is punctuated by intolerance of uncertainty.

Imaginal and additional in vivo exposures are more ways to facilitate decontextualization. For example, Lexi might imagine herself in uncertain situations she cannot avoid (e.g. sitting next to classmate sneezing, getting a new soccer coach, being assigned a pop quiz, etc.) and engage in distress tolerance/coping skills. In vivo exposures could include playing games without traditional rules, inserting a negative comment in the clinic suggestion box, and mailing a letter without a stamp on it. Table 1 presents a summary of treatment targets and interventions Table 1.

Table 1 Treatment target and interventions

Treatment targets	Interventions
Somatic symptoms: jitteriness, jumpiness	Relaxation, mindfulness, acceptance strategies
Emotional symptoms: anxiety, worry	Psychoeducation, behavioral activation cognitive restructuring
Cognitive symptoms:	Cognitive restructuring and rational analysis techniques
I will get sick if I get around lots of people/kids	
I will pass it on to others	
People will think I am dirty if I get COVID	
I must everything in advance	
When I don’t know everything ahead of time, something bad will happen	
If am I not perfect, I am no good	
I must be in total control	
Avoidance/Escape behaviors	Behavioral parent training, exposure, distress tolerance skills, behavioral activation

Conclusion

This article addresses the dynamic interaction between intolerance of uncertainty, health anxiety, and pandemic-related stressors in fostering re-entry anxiety in young people. Additionally, a typical case example with an Asian-American 12 year-old female experiencing various anxious symptoms in the post-pandemic era was provided along with a proposed coping kit. The procedures contained in the toolkit were all based on the literature supporting evidence-informed care and clinical wisdom. Nonetheless, no one scholarly product can reasonably address all the obvious nuances and complexities that characterize pediatric behavioral healthcare. Therefore, this piece is designed as a launchpad for future contributions.

Clearly, more empirical and clinical work is necessary to fully identify idiomatic psychological processes, contextual stressors, and treatment options for children and adolescents especially those individuals from traditional marginalized groups. The literature on intolerance of uncertainty and health anxiety in diverse groups is limited and needs to be expanded. While CBT approaches enjoy considerable success with BIPOC and LGBTQ+ youth, clinical research examining the specific stressors and associated cognitive appraisals in the post-pandemic period is a much-needed initiative.

Finally, the impact of intolerance of uncertainty on youth is well-known in academic circles, but it may not be as widely appreciated in treatment-as-usual settings. However, the construct seems especially important in contemporary society's unprecedented circumstances. Renewed interest in the role of intolerance of uncertainty and the relationship to anxiety spectrum disorders as well as sound interventions to mitigate adverse effects is a meritorious clinical research frontier. Studying the mediating role of intolerance of uncertainty on CBT outcomes is another worthy scientific endeavor as way to dismantle treatment outcomes. Finally, expanding the stockpile of evidence-based interventions to treat intolerance of uncertainty and anxiety with innovative methods rooted in evidence-based practices such as Acceptance and Commitment Therapy and Dialectical Behavior Therapy is warranted. In this way, youth can be better equipped to re-enter the next normal.

Funding Open access funding provided by SCEL, Statewide California Electronic Library Consortium.

Declarations

Conflict of interest Dr. Friedberg receives royalties from Springer, Guilford, Routledge, John Wiley, and Professional Resource Press. Additionally, He is a consultant to Kinark Child and Family Services

Psychological Assessment Resources, and Syra Health as well as serving on the speaking faculty of the Beck Institute for Cognitive Behavioral Therapy. All the other authors have nothing to disclose.

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