



Rethinking the role of technology-assisted cognitive behavioral therapy for youth in the post-COVID-19 era

Naama de la Fontaine^{1,2} · Shlomit Tsafir^{1,3} · Doron Gothelf^{1,3,4}

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The COVID-19 pandemic has led to a significant rise in pediatric anxiety disorders. In this issue, two manuscripts report an increase in mental health difficulties found among cohorts of Danish and German adolescents [1, 2]. Moreover, a recent meta-analysis that included 29 samples and 80,879 participants revealed a pooled prevalence rate of youth anxiety symptoms reaching 20.5%, in contrast to the pre-pandemic estimate of only 11.6% [3]. Currently, youth anxiety rates remain high, highlighting the persistent impact of COVID-19 on their mental health.

Throughout the pandemic, the alarming deterioration of child and adolescent mental health has emphasized the need for more accessible, efficient, and cost-effective treatment delivery mechanisms. In response, mental health care systems rapidly transitioned to digital interventions with technologically assisted cognitive behavioral therapy emerging as a promising remedy. This advancement necessitates changes to well-established evidence-based methods of treatment implementation. Therefore, we postulate that further analysis of both the advantages and disadvantages of technologically assisted mental health interventions is required to inform much needed professional guidelines.

The current issue presents a qualitative analysis of participants' responses to semi-structured interviews following therapist-assisted internet-delivered cognitive behavioral therapy (ICBT) for anxiety disorders [4]. This study offers

unique insight into their multifaceted experiences with the intervention. In a randomized-controlled trial conducted with the same cohort a decade prior, ICBT was found to be equally effective as face-to-face CBT in treating anxiety disorders, with maintained treatment outcomes in both groups at 12-month follow-up [5]. These findings are consistent with meta-analytic results that demonstrate ICBT to be more effective than waitlist control, and comparable to face-to-face intervention in treating pediatric anxiety symptoms [6, 7].

Furthermore, interview analyses conducted by Smart et al. [4] provide a novel and balanced report on the advantages and disadvantages of ICBT for adolescents with anxiety disorders. While the fundamental benefits of CBT (e.g., psychoeducation, cognitive restructuring, and gradual exposures) were maintained, participants also reported satisfaction with ICBT describing it as being convenient and available, while practical barriers associated with in-person therapy were eliminated. In addition, the use of interactive digital resources, such as animations and quizzes, was appreciated and contributed to engagement and information retention. However, participants reported dissatisfaction with the heavy reliance on reading-based materials and with the lack of individually tailored materials (e.g., age appropriate, specific to diagnosis). These issues have already been identified as impediments to digitally based therapy [8]. As the authors noted, these findings bear far greater relevance as we face the aftermath of the COVID-19 pandemic. Studies such as these forge the way for exploring how to integrate the benefits of both digitally based and in-person CBT to generate the most effective treatment for pediatric anxiety disorders.

When discussing the challenges of developing and distributing ICBT for pediatric anxiety disorders, researchers agree that successful programs should involve therapist guidance (virtually or in-person), be tailored to users' developmental needs, and incorporate interactive skills-training [9]. Here, we will explore the challenging aspects of ICBT through the lens of clinical setting, therapeutic alliance, and personalized

✉ Doron Gothelf
gothelf@tauex.tau.ac.il

¹ The Child and Adolescent Psychiatry Division, Edmond and Lily Safra Children's Hospital, Sheba Medical Center, Tel Hashomer, 5262000 Ramat Gan, Israel

² Child Study Center, Yale School of Medicine, New Haven, CT, USA

³ Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel

⁴ Sagol School of Neuroscience, Tel-Aviv University, Tel-Aviv, Israel

treatment. We will then propose that a hybrid model, integrating both digitally based and face-to-face CBT, may be more effective than either model independently.

1. Clinical setting. The physical environment of psychotherapy is typically designed by therapists to minimize distractions, facilitate open communication, and ensure privacy. However, during ICBT sessions, therapists cannot control patients' environments, shifting the burden of creating and maintaining a safe setting, conducive to psychotherapeutic work, onto patients. Patients are also expected to adhere to a consistent timeframe, which is essential for effective therapy and for identifying divergences from the setting that may provide important therapeutic information (e.g., patient motivation, breaches to therapeutic alliance, functional deterioration etc.). Thus, "the right patient" for ICBT is one who manages to maintain consistent discipline, accepts personal responsibility, and enjoys working independently [10]. Less motivated, capable, or younger patients, may require more priming to ICBT-related setting components (e.g., sitting in a quiet room with minimal distractions and adhering to expected session duration), and regular therapist interactions in the form of joint online conversations, phone calls, or intermittent face-to-face appointments.

2. Establishing therapeutic alliance. Therapeutic alliance includes different aspects of therapist–patient collaboration, such as agreeing on therapy goals and tasks, and establishing an interpersonal bond based on mutual acceptance and trust. The quality of therapeutic alliance is crucial as it has been associated with treatment outcome [11]. Despite the convenience of ICBT, participants' expressed preference for face-to-face sessions emphasizes the importance of establishing a therapeutic alliance [4]. Studies have shown that ICBT therapists' roles were less defined, that they lacked consensus on how to handle patient inactivity and feedback, and felt less confident in establishing a resilient therapeutic alliance [10]. These findings could shed light onto the limitations of ICBT. Additionally, relying on written communication could not only be experienced as burdensome to some patients [4], it may also interfere with evaluating nonverbal cues, which are crucial for accurately assessing and managing risk [9].

3. Personalized treatment. The importance of individually tailored treatment to meet patients' needs is well-established, but most ICBT programs employ an inflexible, "one-size-fits-all" method [8]. This method has been a consistent source of discontent among participants in Smart et al.'s [4] study. Thus, when treating youth, intellectual and reading abilities, attention span, and technological skills should be assessed. The results of this assessment will serve as the basis for interventions that offer individually tailored age-appropriate content, engagement strategies, and content load

[12]. Similarly, parental involvement, as is often incorporated in pediatric CBT, must be tailored to the needs and developmental stage of patients, to their parents' characteristics, and to the parent–child dynamics. Parental involvement may assist younger patients bear the responsibility of ICBT [10]. Though post-pandemic reviews of individually tailored ICBT for youth with anxiety disorders remain scarce, individually tailored ICBT for depressed youth has shown promising results, demonstrating the feasibility and benefits of highly responsive models that offer a flexible array of interactive materials and engagement strategies [8, 12].

Presenting a hybrid personalized model

Smart et al.'s [4] findings compel us to rethink how to integrate the advantages of remote and face-to-face modalities into a hybrid model of treatment for child and adolescent anxiety disorders in the post-COVID-19 pandemic era. We propose that a hybrid model should be implemented when possible, in order to incorporate initial face-to-face meetings for personalized assessment, alliance building, and for the initiation of a carefully tailored treatment plan. As mentioned, during these initial meeting, therapists should assess the strengths and limitations of patients and their parents, with the aim of facilitating their ability to benefit from remote treatment modalities. Based on this initial assessment, therapists will be able to make better decisions regarding the proportion of therapy to be conducted face-to-face versus remotely. To ensure a personalized approach, it is recommended that therapists construct a wide, diverse bank of materials, involve parents, maintain ongoing monitoring of treatment progress, and use technology to enhance between-session practices.

As evidence continuous to accumulate regarding the effectiveness of remote treatment modalities, studying the effectiveness of hybrid treatments may serve as the next step in developing more accessible treatment to an ever-growing population in need. We believe that hybrid models that combine the advantages of remote and face-to-face treatments will be more effective than the two models applied individually. Further research could refine hybrid treatment protocols by identifying the needs of diverse populations and by providing specific recommendations such as ideal session duration, proportion of face-to-face versus remote therapist engagement, use of technological support, as well as strategies for establishing an effective therapeutic setting and alliance.

References

1. Hoffmann SH, Pisinger VSC, Rosing JA, Tolstrup JS (2021) Symptoms of distress among young Danes during the national lockdown in May 2020. *Eur Child Adolesc Psychiatry*. <https://doi.org/10.1007/s00787-021-01888-2>

2. Ravens-Sieberer U, Kaman A, Erhart M, Otto C, Devine J, Löffler C, Hurrelmann K, Bullinger M, Barkmann C, Siegel NA (2021) Quality of life and mental health in children and adolescents during the first year of the COVID-19 pandemic: results of a two-wave nationwide population-based study. *Eur Child Adolesc Psychiatry*. <https://doi.org/10.1007/s00787-021-01889-1>
3. Racine N, McArthur BA, Cooke JE, Eirich R, Zhu J, Madigan S (2021) Global Prevalence of Depressive and Anxiety Symptoms in Children and Adolescents During COVID-19: A Meta-analysis. *JAMA Pediatr*. 175(11):1142–1150. <https://doi.org/10.1001/jamapediatrics.2021.2482>
4. Smart K, Smith L, Harvey K, Waite P (2021) The acceptability of a therapist-assisted internet-delivered cognitive behaviour therapy program for the treatment of anxiety disorders in adolescents: a qualitative study. *Eur Child Adolesc Psychiatry*. <https://doi.org/10.1007/s00787-021-01903-6>
5. Spence SH, Donovan CL, March S, Gamble A, Anderson RE, Prosser S, Kenardy J (2011) A randomized controlled trial of online versus clinic-based CBT for adolescent anxiety. *J Consult Clin Psychol* 79:629
6. Vigerland S, Lenhard F, Bonnert M, Lalouni M, Hedman E, Ahlen J, Olén O, Serlachius E, Ljótsson B (2016) Internet-delivered cognitive behavior therapy for children and adolescents: a systematic review and meta-analysis. *Clin Psychol Rev* 50:1–10
7. Ye X, Bapuji SB, Winters SE, Struthers A, Raynard M, Metge C, Kreindler SA, Charette CJ, Lemaire JA, Synshyn M (2014) Effectiveness of internet-based interventions for children, youth, and young adults with anxiety and/or depression: a systematic review and meta-analysis. *BMC Health Serv Res* 14:1–9
8. Weaver A, Zhang A, Xiang X, Felsman P, Fischer DJ, Himle JA (2021) Entertain me well: an entertaining, tailorable, online platform delivering CBT for depression. *Cogn Behav Pract* 30(1):96–115
9. Hill C, Creswell C, Vigerland S, Nauta MH, March S, Donovan C, Wolters L, Spence SH, Martin JL, Wozney L (2018) Navigating the development and dissemination of internet cognitive behavioral therapy (iCBT) for anxiety disorders in children and young people: a consensus statement with recommendations from the iCBTLorentz Workshop Group. *Internet Interv* 12:1–10
10. Weinland S, Ribbegårdh R, Kivi M, Bygdell A, Larsson A, Vernmark K, Lilja JL (2020) Transitioning from face-to-face treatment to iCBT for youths in primary care—therapists’ attitudes and experiences. *Internet Interv* 22:100356
11. Liber JM, Mcleod BD, Van Widenfelt BM, Goedhart AW, Van Der Leeden AJ, Utens EM, Treffers PD (2010) Examining the relation between the therapeutic alliance, treatment adherence, and outcome of cognitive behavioral therapy for children with anxiety disorders. *Behav Ther* 41:172–186
12. Stasiak K, Fleming T, Lucassen MF, Shepherd MJ, Whittaker R, Merry SN (2016) Computer-based and online therapy for depression and anxiety in children and adolescents. *J Child Adolesc Psychopharmacol* 26:235–245