

Deborah J. Jones
Margaret T. Anton

Advances in Psychotherapy –
Evidence-Based Practice

Integrating Digital Tools Into Children's Mental Health Care



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Advances in Psychotherapy – Evidence-Based Practice

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Dedication

We dedicate this book to the mentors who instilled in us the importance of the link between research and practice and the children and families with whom we have worked in both domains.

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We are grateful to the American Psychological Association (APA Division 12) and Hogrefe for producing a book that aims to bridge the research-to-practice gap in children's mental health. We thank our series editor, Jonathan Comer, for allowing us to share our knowledge and experience toward practical guidance for clinicians interested in incorporating digital tools into their practice. Dr. Jones also extends her gratitude to the APA Division 12 Task Force on Digital Mental Health (Jenna Carl, Jon Comer, Brian Doss, Oliver Lindhiem, Adela Timmons, Ken Weingardt). Participation in this group has profoundly enriched my understanding of the nuances inherent in the impact of digital innovation on mental health service delivery and the critical importance of collaboration between industry, academics, practitioners, and policymakers. Finally, both Dr. Anton and Dr. Jones would like to acknowledge the children and families with whom we have worked as our experiences with them helped to shape our interest in digital mental health.

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Preface

COVID-19 and associated stay-at-home and social distancing public health guidelines dramatically expedited the use of digital tools in mental health generally, and children's mental health is no exception (see Sullivan et al., 2021; Torous et al., 2022 for reviews). Changes in reimbursement policies for remote services have further paved the way for new service delivery models and options. Although vaccination efforts should ultimately allow for the resumption of in-person services, telemental health and other digital mental health approaches and tools will likely continue to be a part of the children's mental health landscape moving forward.

As such progress unfolds, we are reminded of a quote by Steve Jobs, Apple cofounder, in a 1994 *Rolling Stone* interview: "Technology is nothing. What's important is that you have faith in people, that they're basically good and smart, and if you give them tools, they'll do wonderful things with them" (Goodell, 2011) We use this quote when training therapists, working clinically with children and families, and presenting our research at conferences as it echoes our evaluation of the role of digital tools in children's mental health as well. That is, technology is one tool that clinicians have at their disposal that may help to increase access to, engagement in, and/or outcomes of evidence-based clinical practice. Accordingly, we aim to provide evidence-based and practical clinical information and illustrations along with supporting didactic materials to guide clinician adoption and integration of digital tools in assessment and treatment plans with children and families.

This book is divided into five chapters. Chapter 1 describes the broad range of terminology used in digital mental health. Chapter 2 reviews some leading theoretical approaches that highlight the mechanisms through which it is posited that digital tools can increase access to, engagement in, and outcomes of evidence-based mental health services for children and families. In Chapter 3, we present guidance for therapeutic decision making regarding if, when, and for whom digital tools may be most useful. Chapter 4 presents examples of ways in which digital tools can be incorporated into clinical practice, the efficacy data available for such examples, and common obstacles to successful outcomes. Finally, Chapter 5 presents case examples that describe the incorporation of digital tools into clinical practice. A variety of forms and handouts to guide the use of digital tools and related decision making are presented in the Appendix. One that may be helpful even before you dive into the first chapter on terminology is the Provider Self-Assessment of Technology Comfort and Attitudes handout in Appendix 1. Importantly, there is no scoring system or right or wrong answers to these questions. Rather, we hope that this assessment will encourage you to think about your comfort with and attitudes toward digital mental health and incorporating digital tools into your clinical care with child clients and their

families. It may be helpful to revisit the questions as you work your way through each chapter of the book to see if your comfort and attitudes are changing and if so how.

1.8 Digital Games

Digital or video games are played by millions. Numerous studies have demonstrated the potentially harmful effects of playing video games in children, including increased risk for aggression, addiction, and depression in some children (Ferrari et al., 2020). In turn, WHO has now identified the new classification of gaming disorder characterized by a pattern of lack or loss of control, precedence over other daily activities, and continuation in spite of negative consequences. Such trends may make clinicians cautious about recommending digital games as an assessment or treatment tool for children and families. That said, the ubiquity of digital games simultaneously highlights the potential to be a convenient, familiar, and thus potentially engaging digital mental health tool as well. To that end, some data exist to suggest that games can help children improve their attention span, develop problem-solving skills, manage emotions, and assist with treatment for a range of disorders (Ferrari et al., 2020).

The Smartphone-Enhanced Child Anxiety Treatment (SmartCAT) is a smartphone app that was developed to augment traditional face-to-face treatment for child anxiety (Pramana et al., 2014). After pilot testing, the developers engaged in a redesign process to add gamification to promote engagement. The SmartCAT tool now includes interactive games and activities designed to reinforce skill knowledge, an in vivo skills coach that prompts the client to use skills when experiencing real-world distress, a challenge to promote home-based exposure practice, and a digital reward system that contains points that can be traded in for trophies and other digital rewards (Pramana et al., 2018). The developers found that the addition of the gamification features boosted engagement in SmartCAT as well as the intervention overall (see also Silk et al., 2020).

1.9 Augmented and Virtual Reality

As noted earlier, augmented reality uses technology to overlay sight, sound, touch, or other sensory information onto the user's real-world experience. Common examples of augmented reality wearables available to consumers include smart glasses (e.g., Google Glass, Microsoft HoloLens, Oculus Quest). Research on augmented reality and youth is in the very nascent phase, and only a few small case studies exist to date. One example is a smartglass intervention for youth with autism spectrum disorders called Brain Power System. Brain Power System has several gamified, augmented reality interventions built into the smartglass system, including one called Face Game, designed to increase face gazing. The system overlays cartoon features on faces detected in the individual's visual field to improve and reinforce eye contact. Digital features are removed as the child learns to interact on their own (Liu et al., 2017).

Box 1**Examples of Digital Mental Health Tools**

Telemental health generally refers to the use of a video and audio data to facilitate therapist-led, real-time mental health care. Most providers are likely familiar with telehealth at this point given the mass transition necessary during the COVID-19 pandemic. Although telemental health was not a dominant mode of mental health care delivery prior to COVID-19, it has now entered the clinical mainstream.

Mental health apps or applications are software programs designed to provide psychoeducation, monitoring, and/or skills designed to target one or more mental health concerns. This broad category of mental health apps is typically available direct to the user through various app stores and can be used on various devices including computers and mobile phones. Although thousands of mental health apps are available that claim to target a range of mental health-related issues, relatively few are evidence based.

Digital therapeutics are generally distinguished from the broader category of mental health apps because they require review and oversight by agencies such as the Food and Drug Administration (FDA). Given the current state of this process, use of digital therapeutics is limited to those with prescription privileges meaning the vast majority of mental health providers cannot “prescribe” them in their practices currently.

Digital games may be one component or feature of mental health apps or digital therapeutics or the game itself may be digital mental health tool. Although providers need to be thoughtful about the incorporation of digital games given increased awareness of the negative side effects of gaming, they offer unique opportunities to engage children in meaningful ways especially if used in moderation or with other services.

Virtual reality typically includes some sort of headset used in combination with an app that allows the user to be immersed in a virtual environment. The virtual environment is increasingly realistic and includes visible, auditory, and other sensory cues and details. The immersive nature of virtual reality makes it particularly promising for treating conditions in which the context of the client (user) is especially important, such as anxiety and trauma.

Augmented reality is sort of the opposite of virtual reality and, instead of immersing the user in a virtual world, essentially overlays sight, sound, touch, or other sensory information onto the client’s real-world experience. At this point, the application of augmented reality devices (e.g., smart glasses) and software to mental health is in its relative infancy compared to virtual reality but holds promise for targeting mental health issues in which clients (users) will benefit from real-time prompts, coaching, and feedback increasing the generalizability of intervention to their daily life.

Wearable sensors are increasingly being integrated into common devices, such as smartphones and wearables, and can be used in combination with other digital mental health tools (e.g., apps) to passively collect a range of information (e.g., sleep time). Although still used in fairly preliminary ways in children’s mental health, sensors move us further toward the opportunity to provide just-in-time interventions in the context of the client’s daily life. Sensors further provide the promise of providing greater support and increasing the likelihood of generalizability of treatment and progress between sessions.

2.4 Implementation Models

Digital mental health tools can help bridge the research-to-practice gap by making evidence-based interventions more easily accessible and by helping providers deliver high-quality care. Excitement for these tools stem from their ability to transport intervention components into the daily lives of those who need them the most. They also offer the potential to help guide clinical care and streamline the delivery of evidence-based care by providing clinicians with built-in and easy-to-access support. Although digital mental health tools were proposed to help with the implementation and dissemination of evidence-based practice, they often introduce new challenges. That is, like other advances in mental health science, research on digital mental health tools progressed with a focus on demonstrating efficacy in highly controlled research trials. There has been less attention in digital mental health research, however, to if, how, and in what ways digital mental health tools can be incorporated into, and thus effectively implemented into, mental health care settings (see Anton & Jones, 2017; Graham et al., 2020 for reviews). With this in mind, it is perhaps not surprising then that there has been relatively poor uptake and use of digital tools by mental health providers in mental health care. As a result, the field is yet again at a crossroads at which the translation of scientific advances is challenged by the same research-to-practice gap scientists and policy makers set out to address with digital mental health tools in the first place.

In mental health broadly, implementation science is a broad approach that focuses on the barriers and facilitators to the adoption and sustained use of evidence-based interventions by clinicians in front-line service settings. There has been increased focus on implementation strategies to help promote the adoption and use of these tools (see Box 4). These include exploring the pros and cons of adopting a digital mental health tool (or tools) as they relate to the setting, providers, and/or clients. Then, if the decision is to adopt a digital mental health tool, you must consider for whom, when, and how the tool will be used in clinical decision making and the treatment process. Finally, providers and the administrators in the settings in which providers are working must consider both clinician- and organization-level barriers to adoption and

Providers and organizations should consider barriers and facilitators to the adoption of digital tools

Box 4

Implementation Considerations in Digital Mental Health

- Consider pros and cons of digital mental health tool(s) for setting, providers, and clients.
- Consider for whom, how, and when the tool will be used in clinical decision making and treatment.
- Consider clinician- and organization-level barriers to adoption and sustained use, including access to digital mental health tools, preparation and support for data security, privacy, and use, and if and how providers can and will be reimbursed.
- Consider the cost-effectiveness of integrating digital tools, including reduction in number of sessions required for clinically significant change.

therapist an opportunity to provide tailored feedback on skill use outside of session, and offer reminders for homework practice or session attendance. Digital tools may also foster more efficient or robust treatment outcomes. Perhaps a child presents with a particular phobia that makes the standard of care use of exposure therapy challenging. During the COVID-19 pandemic, for example, treating a child with in vivo exposures for social phobia might not have been feasible given social distancing and associated public health guidelines. Exposures conducted via virtual technology, however, would be another treatment option guided by the case conceptualization and treatment plan. Such decisions will include considerations of the following factors (see Figure 2), which are discussed further in the next sections.

3.2 Participants (Parent or Child)

Child mental health providers are of course well aware that parents (or other guardians and caregivers) are a critical part of the treatment process. Whether they serve as the mechanism of treatment as is the case of externalizing disorders (e.g., behavioral parent training or parent management training), for example, or as coach as is more often case with internalizing disorders (e.g., anxiety), child therapy involves parents (see Forehand et al., 2013 for a review). Providers can think about who is actively participating in treatment and, in turn, generate ideas regarding whether parents, children, and/or both may benefit from digital tools.

Digital tools can be used carefully with parents, children, or both

3.3 Sociodemographic Factors

Access to and use of consumer-based technology continues to evolve quickly. That said, sociodemographic factors may play a role in case conceptualization and, in turn, the incorporation of digital tools into therapeutic decision making (see Box 5).

Box 5

Sociodemographic Factors to Consider in Digital Mental Health Assessment and Treatment

- Age
- Family structure
- Geographic region
- Parent gender
- Race and ethnicity
- Sexual/gender minority status
- Socioeconomic status

4.3.1 Does Technology Increase Access to Children's Mental Health Services?

One of the best examples of research on the capacity for digital mental health to improve children's access to services is in the area of rural mental health. Rural children and families have long faced barriers to health care, including children's mental health care, due to a variety of factors such as provider shortages and associated burden of travel to traditional in-person appointments. Although there are also many challenges inherent in the promise of digital mental health for rural children and families, such as limited high-speed Internet, efforts are ongoing to increase evidence-based mental health care to rural families.

The Rural Health Information (RHI) Hub describes a hub and spoke model in which agencies are serving as spokes (i.e., they provide digital tools for children to receive mental health care) or hubs (i.e., they provide the mental health care using digital tools for students in the school system and beyond) for rural children's health care, including mental health. One of the examples listed on their website is the University of Kansas Medical Center's Telehealth Rural Outreach to Children in Kansas City Schools (ROCKS) program through which providers at the University of Kansas partner with statewide agencies, schools, and communities to both train professionals and paraprofessionals in various evidence-based treatment models as well as to provide those services to children and families directly. To date, such programs have relied primarily on video conferencing to provide remote, real-time services to children and families and, importantly, research continues to suggest that such approaches not only have the potential to increase access to evidence-based interventions but may also yield outcomes equivalent to in-person services (see Hilty et al., 2013 for a review).

Nelson and colleagues (2017) highlight that telemental health has been effectively used to address provider shortages in order to increase access to a wide age range of children and adolescents with behavioral and developmental disorders in underserved areas. Consistent with an overarching theme in this volume, they recommend that as data on the efficacy of such approaches continue to be collected, the key is for providers to use digital tools to deliver assessment and intervention approaches that already have an evidence base (i.e., only the delivery mechanism is new). In turn, increased access should also improve the efficiency of service delivery as more providers are able to serve more children and families in ways that overcome many of the most cited barriers to effective engagement in traditional service delivery models (e.g., weekly appointments, time for travel to and from appointments, unreliable transportation). This may become even more feasible with movements like the Psychological Interjurisdictional Compact (PSYPACT), which aims to coordinate cross-state practice for participating states.

Case Vignettes

This chapter presents examples of ways in which mental health providers can incorporate digital tools into the assessment and treatment of children. Given the mass transition to telehealth during COVID-19, we focus these case vignettes on other examples. All names and demongrapnic information have been changed to protect the privacy of the clients.

Case Vignette 1: Technology-Enhanced Treatment Model

Hazel is a 4-year-old White, non-Hispanic female presenting with symptoms of noncompliance (e.g., she often says “no” in response to parent requests), oppositionality (e.g., arguing, yelling, tantrums), and aggression (e.g., hitting parents and peers, breaking toys). Hazel presents for services with her married parents, Caroline and Matt, who say that this behavior spiked when she turned 3 years old and continues to worsen. Their impetus for seeking treatment now is that the day care is not allowing Hazel to return until the family seeks therapy and demonstrates improved behavior. Both parents have full-time jobs and do not have family support for childcare in this area making day care essential. They also want to address Hazel’s behavior before she starts school when they fear the consequences for misbehavior will impact her relationships with teachers and classmates and affect her school performance as well.

A diagnostic interview reveals Hazel’s behavior meets the criteria for a diagnosis of oppositional defiant disorder, moderate, given it occurs in at least two settings (i.e., home, day care). Her Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999) scores also exceed clinical cutoffs.

ECBI	Score	Possible range	Clinical cutoff
Intensity	200	36–252	>131
Problem	30	0–36	>15

Although neither parent meets criteria for depression, both parents have Beck Depression Inventory (BDI) scores in the moderate (Range 10–18) range (Caroline BDI = 17; Matt BDI = 13) (Beck et al., 1961; Beck et al., 1988). They

Appendix: Tools and Resources

The following materials for your book can be downloaded free of charge once you register on the Hogrefe website:

Appendix 1: Provider Self-Assessment of Technology Comfort and Attitudes

Appendix 2: Exploring and Identifying a Digital Tool to Integrate Into Child Mental Health Care

Appendix 3: Evaluate the Evidence Base of a Digital Tool for Child Mental Health

Appendix 4: Preparing to Introduce a Digital Tool Into Child Mental Health Care

Appendix 5: Strategies and Tips for Talking to Your Clients About Using Technology as a Part of Care

Appendix 6: Evaluating Client Attitudes About Digital Tools in Child Mental Health Care

Appendix 7: Sample Script for Introducing a Digital Tool Into Child Mental Health Care

Appendix 8: Additional Web-Based Resources