Identifying and Making Recommendations for Pediatric Anxiety Disorders in Primary Care Settings: A Video-Based Training

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Abstract

Introduction: Pediatric anxiety disorders have high rates of prevalence and confer risk for later disorders if they go undetected. In primary care, they are underdiagnosed, partly because pediatricians often lack relevant training. We developed a brief, video-based training program for pediatric residents aimed at improving early identification of anxiety disorders in primary care. Methods: Video content was consistent with the American Academy of Pediatrics Behavioral Health Competencies, as applied to the evaluation of anxiety disorders and guidance for discussing treatment options. This training can be delivered in two formats: videos (43 minutes) can be shown in a live, group-based format, or accessed via an online, asynchronous training. We tested this training program using both formats and developed surveys to evaluate knowledge about child anxiety, perceived evaluation skills, and satisfaction with the training. We also developed a video-based vignette to measure sensitivity to detecting disorders (how much the condition is interfering, diagnostic severity, and referral urgency). Results: Pediatric residents from two residency programs completed the training and pre- and posttraining assessments to evaluate program efficacy. Residents' knowledge and perceived evaluation skills increased posttraining, with large effect sizes. Residents also demonstrated increased sensitivity to detecting anxiety disorders on the vignette-based assessment and reported high levels of satisfaction. Discussion: Our results suggested that residents participating in this training improved their evaluation skills and that residents found the training beneficial. Video-based trainings can significantly supplement existing education. This cost-effective and minimally burdensome training program can be used to enhance resident education in a much-needed area.

Keywords

Anxiety, Anxiety Disorder, Pediatric, Residency, Remote Learning, Distance Learning, Mental Health

Educational Objectives

By the end of this training, learners will be able to:

1. Recall and define the four domains to assess in order to evaluate for childhood anxiety disorders during primary care visits.
2. Identify examples of how anxiety can manifest in young children.
3. Formulate appropriate recommendations for patients with anxiety disorders to help manage anxiety symptoms in primary care.
4. Label red flags that indicate when further evaluation is necessary.
5. Analyze an interaction between a pediatrician and family to identify appropriate recommendations (as tested with the assessment video).

Introduction

Pediatric anxiety disorders high prevalence rates and confer risk for later conditions if they go undetected. Although prevalence estimates vary widely across studies, anxiety disorders as a group—typically including social anxiety disorder, separation anxiety disorder, generalized anxiety disorder, specific phobia, panic disorder, and agoraphobia—affect approximately 10% of children by age 16, with high levels of comorbidity. Social anxiety disorder, generalized anxiety disorder, and panic disorder tend to be more common in older children and adolescents, while separation anxiety disorder and selective mutism are more common in younger children. In general, prevalence estimates for anxiety disorders tend to be higher in preschool-aged children. Anxiety disorders are associated with severe impairments, affecting academic and social functioning.
Fortunately, effective treatments do exist for pediatric anxiety disorders, including both pharmaceutical and behavioral interventions, most notably cognitive-behavioral therapy (CBT). 3

Primary care offers an ideal opportunity to identify children in need of services, but anxiety disorders are under-diagnosed in primary care.10 This trend may be most pronounced for young children; for example, research suggests the prevalence in preschool-age children in the general population may be as high as 19%,7 but a recent study reported that only 1.3% of preschool-age children had been diagnosed with an anxiety disorder by a professional in the US.11 Because anxiety disorders in young children are risk factors for emotional disorders in adolescence and adulthood, this suggests medical professionals may be missing opportunities for early intervention, which offers significant public health benefits.1,12,13

Pediatricians represent gateways to mental health services, as they detect problems and provide important assistance to families including information, treatment, recommendations, treatment, and/or referrals.14 However, pediatricians often lack the training necessary to screen for, evaluate for, and treat anxiety disorders.10,15 Studies suggest the majority of practicing pediatricians feel they lack the appropriate training in identifying and treating mental health problems.15 In our survey-based study, 78% of pediatric residents reported they lacked adequate training in evaluating anxiety disorders, and 86% reported inadequate training in discussing anxiety with parents.17 This problem has led the American Academy of Pediatrics (AAP) to call for enhanced training in pediatric residency programs regarding the early identification of emotional and behavioral disorders.18 The lack of training was more specifically emphasized in a recent call to action to improve resident education to address mental health needs in pediatric populations.19

Adding enhanced training for pediatric medical students and residents is challenging due to limited available time, as well as burden on faculty. One potential solution is web-based training programs that residency programs (and others) can use to supplement existing training. Such programs can be implemented as a core component of a developmental and behavioral pediatrics rotation curriculum or as a supplemental or optional training opportunity. Further, it has been recommended that pediatric faculty form collaborations with psychologists, who may have specific expertise, as a way to address this need.20 Finally, the emergency generated by the 2020 COVID-19 outbreak has emerged as a powerful reminder of the need for high quality, remote learning opportunities in the medical profession.

As of July 2020, the few trainings specific to anxiety disorders available in MedEdPORTAL were adult focused. For example, Levine and colleagues developed a training on anxiety, dissociative, and somatoform disorders that was aimed mostly at making accurate diagnoses and treatment recommendations.21 Another training used a specific interactive case to help residents with differential diagnosis and treatment recommendations.22 While these are very valuable resources, they do not address the presentation of anxiety disorders in pediatric populations or how to talk to parents about them.

To address this need, we developed a brief, video-based training program for pediatric residents aimed at improving early identification and management of child anxiety disorders in primary care. This training was the result of collaboration between pediatric residency faculty and clinical psychologists who were experts in pediatric anxiety evaluation and treatment. The training was based on adult learning theory, which specifies that effective learning occurs when participants can engage in self-directed learning for a specific purpose, engage with experts, and when materials are relevant to their work.23

**Methods**

Training on Identifying Pediatric Anxiety Disorders

The stand-alone training included 12 short videos (1-10 minutes each; 43 minutes in total) featuring experts in child anxiety evaluation and treatment. The video content (e.g., scripts and role-plays) was developed by the authors to be consistent with the AAP Behavioral Health Competencies,24 as applied to the evaluation of anxiety disorders and guidance for discussing treatment options. The videos were produced by the Boston University Office of Distance Education, experts in using video to enhance remote learning. Videos were designed to be informative but also interesting. To reduce monotony and increase breadth of expertise, six different child anxiety experts appeared in the videos, each presenting on an area of their own expertise. For example, Donna Pincus, PhD, an expert in anxiety and CBT with adolescents, presented on anxiety in adolescence; David Langer, PhD, an expert on matching treatment to parental preferences, presented on and demonstrated how to discuss treatment with concerned parents.

The focus of video content was on: (1) identifying a potential problem, (2) evaluating problem severity, (3) discussing the problem with children and parents, and (4) making recommendations. In role-plays, patients were played by actors while pediatricians were played by child anxiety clinicians.
This stand-alone training package included a set of learning objectives, the training videos, a learner guide with supplemental readings (Appendix A), a facilitator guide (Appendix B), assessments for learners (Appendix C), and a vignette assessment video (Appendix D).

The appropriate viewing order of the videos, along with brief descriptions of each, was as follows:

1. Trailer Video (Appendix E; 2:59) - A preview-style video that included several experts discussing the importance and benefits of early intervention for pediatric anxiety disorders.
2. Welcome (Appendix F; 2:05) - Welcomed the learner to the program, emphasizing the important role that pediatricians (and others in primary care) play in identifying emotional disorders.
3. Anxiety in Children: Introduction (Appendix G; 2:32) - Introduced what anxiety is, commonalities among anxiety disorders, prevalence, risk for later psychopathology, and efficacy of treatment.
4. Anxiety at Different Ages (Appendix H; 10:46) - Included three segments with role-play, each focusing on how anxiety manifests during a different developmental stage (preschool, school-age, and adolescence).
5. When is Anxiety a Problem? (Appendix I; 3:25) – Provided an overview of the difference between normal and pathological anxiety and what questions to ask to differentiate these.
6. The Four Domains to Evaluate (Appendix J; 2:06) - Introduced the four domains to evaluate: frequency, duration, distress, and interference (FDDI).
7. Illustrating the Four Domains (Appendix K; 3:56) - Included two role-plays in which a pediatrician interviewed two families about FDDI.
8. Red Flags (Appendix L; 1:47) - Described several red flags that indicated when further evaluation or referral may be necessary.
9. Conversations with Parents (Appendix M; 5:48) - Included an introduction with helpful suggestions when discussing anxiety with parents, along with two role-plays in which an expert demonstrated discussing mental health treatment with concerned and skeptical parents.
10. Discussing Treatment Options (Appendix N; 6:58) - Provided perspectives from various experts on the importance of evidence-based treatment (with an emphasis on CBT) and how to describe treatment options to parents. Then illustrated these topics by revisiting the two families from video 7 and making recommendations to the families.
11. Recommendations for Parents (Appendix O; 3:09) - Provided basic recommendations for parents of anxious children, namely: don’t encourage avoidance, use attention strategically, empathize and encourage, and one-on-one time.
12. Thank You! (Appendix P; 0:43) - Thanked the learner for their participation and their interest in addressing emotional disorders.

A transcript of the videos was also provided in Appendix Q.

Training Delivery
This training was tested at two pediatric residency programs. Both were urban residency programs that served many low-income and immigrant families. All activities were reviewed by a university institutional review board. More details on the training and its delivery have been published elsewhere. We delivered the training in two different formats, with certain adjustments in accordance with differences in the training schedules at participating sites.

Live, group-based format: We delivered the training in a live, group format at both sites. Residents, faculty, and a member of the research team watched the videos together over multiple sessions (two 50-minute sessions or three 30-minute sessions). Because the videos were short, they could be divided into informal modules to fit the different time frames of the different sites. Group size was large at one site (40 residents, all 3 years at the same time) and small at the other (6 residents, only those residents who were in clinic that day). The live, group-based format (both large and small) allowed for brief discussion of the videos after viewing. Pen-and-paper assessments, which required approximately 10 minutes, were completed before the first session and after the last session. These pre/post assessments have been modified as described in the Educational Assessment section.

Asynchronous, web-based format: For residents who were not able to attend all or part of the live sessions, the training was also offered in an asynchronous format. Residents were first provided with a link to an online version of the pretraining assessment and received a link to the training itself after the survey, which was delivered with a free, web-based education platform called EdX Edge. Finally, after watching all the videos, residents accessed a link for the online version of the posttraining assessment. Pediatric faculty emailed residents with the initial link, information on how to access the training,
Research Assessment

For the original study, we developed three pre/post-surveys to measure: (1) knowledge about child anxiety disorders, (2) sensitivity to detecting anxiety disorders, using an objective, vignette-based assessment, and (3) perceived evaluation skills. The pre/post knowledge of anxiety assessment was a 15-item measure that was scored as a summative quiz. This scale was developed from a previous version which used a true/false format and simpler items because the audience were parents rather than medical professionals. A sample question included, “It is very rare for children under the age of 6 to have diagnosable problems with anxiety.”

For the pre/post objective, vignette-based assessment, residents were shown a brief video and then answered 3 questions (either on paper or online depending on the delivery method). For residents taking the surveys online, the video was embedded in the survey. The questions asked how much the problem was interfering in the child’s life, how severe the symptoms were, and how urgently they would refer to professional help. Higher scores (each item ranging from 1-5), indicated a higher degree of concern/sensitivity for detecting a problem and taking action.

The pre/post perceived evaluation skills questionnaire (PESQ) included 11 items measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). This scale was developed specifically for the research study and was reviewed by all authors, including experts in child anxiety and pediatric resident education. The PESQ was designed to measure subjective evaluation skills, or confidence in evaluation. A sample question included, “I know what questions to ask parents to evaluate if a problem with anxiety warrants professional intervention.” The scoring questions and scoring instructions for facilitators are included in Appendix A, and the questions for learners are also included in Appendix C.

In the original study residents completed the three pretraining assessments before the training, then completed the training (either viewing videos in group format or online asynchronously), and then completed the three posttraining surveys as well as a posttraining satisfaction survey. In total, the implementation and evaluation process was completed over the course of approximately 4 weeks.

Educational Assessment

We modified the assessment protocol used in the original study, which was developed for research purposes, to create a single knowledge posttraining assessment (Appendix C) that was shorter (10 questions) and more appropriate for educational applications (e.g., multiple choice rather than Likert-scale response format). The knowledge assessment (Appendix D) contained modified questions from the original 15-item pre/post knowledge of anxiety assessment and from the original 3-question objective, vignette-based assessment for measuring sensitivity to detecting anxiety disorders. For educational assessment, both the knowledge assessment and the PESQ (Appendix C) should be completed only after the videos are viewed.

Results

After we developed the training program, we tested it with two different residency programs in the United States, using the assessment protocol described above. Pediatric residents from the two programs (n = 62) participated in the study. Mean age for participants was 28.9 years (SD = 1.95), and the majority were female (69%). More than half (66%) identified as White/Caucasian, 21% as Asian/Asian-American, 7% as Black/African-American, and 7% as other. All residency years were equally represented, with 21 first-years, 21 second-years, 20 third-years.

Participants completed pre- and posttraining surveys to evaluate program efficacy. Results here included and expanded upon results from the previously published study. Participants’ knowledge of child anxiety disorders—based on the 15-item knowledge of anxiety assessment quiz (maximum score = 30)—increased from pretraining (M = 23.3) to posttraining (M = 26.2) with a large effect size (Cohen’s D = 1.1; p < .001). Participants demonstrated increased sensitivity to detecting anxiety disorders on the 3-question objective, vignette-based assessment (each item ranging from 1-5), as indicated by higher scores for level of interference in the child’s life (ΔM 3.1 to 3.5; Cohen’s D = 0.32; p < .001), diagnostic severity (ΔM 2.9 to 3.2; Cohen’s D = 0.43; p = .048), and referral urgency (ΔM 3.1 to 3.8; Cohen’s D = 0.82; p < .001). Perceived evaluation skills—as measured by the PESQ (maximum score = 55)—also increased from pretraining (M = 31.7) to posttraining (M = 40.6) with a large effect size (Cohen’s D = 1.7; p < .001). Scores increased for all three resident years, suggesting that the training was helpful regardless of training level.

Residents also reported high levels of satisfaction with the training: 92% reported that they would recommend this training program to a colleague; 90% rated the quality of the teaching as good or excellent; 88% reported that the program helped somewhat or a great deal with dealing more effectively with
patient concerns; 100% reported they agreed with the goals of the program; and 83% reported that they would come back to a similar program in the future. Some residents also provided qualitative feedback, as one reported: “...I had seen a lot of the issues mentioned in the video but hadn’t recognized that they were anxiety or what to do with that...I realized I could do more with those kinds of issues in clinic and how to refer appropriately.”

Discussion

This training program was developed to address a training gap in pediatric residency by helping residents identify and manage anxiety disorders in their practice. This was accomplished through a collaboration between clinical psychologists and pediatric residency faculty. Our results suggested that residents participating in this program improved their evaluation skills for identifying anxiety disorders and that residents were satisfied with the training program. While this program was developed specifically for residents, based on feedback from faculty at participating institutions, we believe that it would also be helpful for practicing pediatricians, nurses, medical students, and virtually anyone in the medical field who works with children and would like further training on anxiety disorders in this population.

In addition to the study cited here, this training was recently implemented in a second phase at three residency programs in the US, which used the training exclusively as a remote-learning tool. We have received similar satisfaction ratings to date, but faculty from participating sites have reported suboptimal rates of completion. As residents and other medical trainees typically have very demanding schedules, this is an ongoing challenge. Even when we presented the program in a live, group format, some residents were clearly distracted (e.g., simultaneously working on documentation or needing to briefly leave the room to attend to a patient issue) and unable to fully engage with the training. As such, we recommend that institutions that wish to use the program dedicate and/or protect time for learners to complete the program.

Additionally, anecdotal feedback from participating residents and faculty suggested that discussion of the videos was helpful, so incorporating and facilitating discussion among learners is recommended. In our experience, learners were quick to connect video content to their own clinical experiences and share with the group. One common discussion theme was that, in the context of families with very complicated challenges—poverty, undocumented immigration status, and/or housing instability—anxiety can seem insignificant and deprioritized. This topic can lead to conversations about how anxiety is exacerbated and intertwined with these challenges, so recognizing it can open up an important conversation and help connect a family with needed services. Indeed, when these complicated challenges are present, evaluating for anxiety may be especially important.

Limitations

Our investigation was not without limitations. The evaluation of the training program did not include a control group, so results should be interpreted with some caution. We also were not able to include a follow-up assessment, so it is unclear if improvements in scores were maintained over time. Additionally, the assessments used in the original study were developed specifically for our study, so they had not been previously validated. Lastly, we do not include the two full pre/post knowledge assessment tools described and used for measuring effectiveness as reported in our results, but instead include a shortened posttraining knowledge assessment that has not yet been tested.

There were also limitations to the training program itself. First, the program had some limitations that are inherent in all asynchronous video-based trainings, such as inability to ask questions or seek clarification (highlighting the benefit to viewing in live, group format with discussion). Second, the training mostly focused on discussions with parents. This was intentional, as parents are almost always the decision makers when it comes to seeking treatment. However, we understand that some learners may have benefitted from more focus on discussing anxiety directly with children. Finally, this training focused almost exclusively on the evaluation of anxiety disorders. While we do not specifically address evaluating other conditions, such as attention-deficit/hyperactivity disorder, depression, or bipolar disorder, it is worth noting that many of the evaluation skills taught in our training (e.g., FFDI, red flags, how to discuss treatment options) are useful for evaluating those conditions as well.

Conclusion

While our training, and the study presented above, have some important limitations, this program allows for easy generalizability and delivery anywhere in the world. This program is cost-effective and requires only minimal burden on the training program and/or faculty for delivery and can play a significant role in enhancing resident education.
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Informed Consent
All identifiable persons in this resource have granted their permission.

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