Evidence supports cognitive-behavioral therapy (CBT) for anxiety in youth (e.g., Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008; Walkup et al., 2008), but CBT remains rarely implemented in community settings (Goisman, Warshaw, & Keller, 1999). One barrier is the lack of a CBT-trained workforce (Weisz, Hawley, & Jensen-Doss, 2004). Given the high prevalence (10% to 20%; Costello, Egger, & Angold, 2004) and morbidity associated with youth anxiety (Achenbach, Howell, McConaughy, & Stanger, 1995), the dissemination of CBT is a priority (Emslie, 2008); computer-assisted CBT, if effective, could broaden its availability (Greist, 2008).

Computer-based (stand-alone or self-help) and computer-assisted (therapist guided, with contact) CBT also offers practical advantages. Costs may be reduced (McCrone et al., 2004; Newman, 2000; Wright et al., 2005), and standardization and adherence may be improved. Programs can be self-paced and can facilitate review of material. Record keeping and data collection are also easier (Greist, 2008; Marks, Cavanagh, & Gega, 2007). Preliminary evidence supports computer-based and computer-assisted interventions with adults (see Griffiths & Christensen, 2006), and the National Institute for Clinical Excellence (NICE; 2006) deemed computerized CBT an acceptable option for adult depression and anxiety. Fewer evaluations exist of computer-based programs for youth.

Spence and colleagues (Spence, Holmes, March, & Lipp, 2006) delivered CBT via the Internet in a group format for anxious children ages 7–14. The program (CLIN-NET) was compared with group CBT and a waitlist. CLIN-NET delivers eight of 16 sessions via the Internet. Both treatments outperformed the waitlist, and anxiety reductions were comparable to previous group CBT outcomes. The Internet-assisted content was acceptable to families, with minimal dropout and high compliance. Results were promising; however, the therapists were psychologists trained in CBT for child anxiety, thus limiting generalizability to untrained clinicians. March, Spence, and Donovan (2008) evaluated BRAVE, an Internet-based (minimal therapist contact via phone or e-mail) therapy for anxious children (ages 7–13). Children receiving BRAVE, compared with waitlist, showed small posttreatment reductions in anxiety and increases in functioning, but the outcomes were less than in previous studies. Further, only 33% of children and 60% of parents completed all sessions. By 6-month follow-up, 62% of children and 72.3% of parents had completed all sessions, and outcomes improved and were similar to those found in previous trials.

The present study evaluated the feasibility, acceptability, and effects of a computer-assisted CBT, Camp Cope-A-Lot (CCAL; Kendall & Khanna, 2008), for youth anxiety compared with individual CBT (ICBT) and a computer-linked education, support, and attention (CESA) condition. CCAL is a computer-assisted program implemented with a mental health provider (“coach”) to ensure monitoring of symptoms, alliance, compliance, and the integrity of the empirically supported CBT (see Speck et al., 2007). The pro-
gram guides the coach and does not require previous CBT training. It was hypothesized that CCAL would be acceptable to children and feasible for novice therapists to implement in their setting. We also hypothesized that CCAL and ICBT would produce significant reductions in anxiety in comparison to the CESA condition and that posttreatment gains would remain at follow-up.

Method

Participants

Participants were children (ages 7–13) who met criteria in the Diagnostic and Statistical Manual of Mental Disorders (4th ed.; DSM–IV) for a principal anxiety disorder (i.e., separation anxiety, social phobia, generalized anxiety disorder, specific phobia, or panic disorder). Exclusion criteria included (a) full-scale IQ below 80, (b) psychotic symptoms, (c) use of antianxiety or depression medications or ongoing psychotherapy, (d) and lack of fluency in English. Children were referred from schools or by practitioners or parents. Recruitment began in September 2006, and all follow-ups were completed by July 2008. A 20-min telephone screen was followed for initial inclusion or exclusion. As noted in the CONSORT flowchart (see Figure 1), 55 of 76 children completed the intake assessment. One parent provided written informed consent, and children provided written assent (protocol approved by Temple University Institutional Review Board). Determination of eligibility was confirmed by results of intake, and the study coordinator delivered group assignments to participants based on a random number generating program.

Forty-nine (33 male) children ages 7–13 ($M = 10.1 \pm 1.6$) met criteria and were randomly assigned to ICBT ($N = 17$), CCAL ($N = 16$), or CESA ($N = 16$), and to a therapist. Therapist assignment was restricted using block randomization by location so that children were assigned to a provider in their area. Forty-one (83.7%) were Caucasian; seven (14.2%) were African American; and one (2%) was Hispanic. Twenty-eight (57.1%) had principal generalized anxiety disorder, eight (16.3%) had SP, seven (14.3%) had separation anxiety, four (8.1%) had specific phobia, and two (4%) had a principal diagnosis of panic disorder. Twenty-six (53%) met diagnostic criteria for a secondary diagnosis ($N = 15$ other internalizing; $N = 8$ attention-deficit/hyperactivity disorder; $N = 2$ oppositional defiant disorder; $N = 1$ tic disorder). One participant lost contact (CESA = 1), one withdrew from the study due to distance/time burden (ICBT = 1), and two were withdrawn due to worsening symptoms (CESA = 2). The 45 remaining participants completed all 12 sessions within 15 weeks of their first session.

Therapists

Therapists ($N = 16$; 12 female, 75%) were volunteers, including five school psychologists (two EdS degree holders, one licensed professional counselor, and two EdS candidates), 10 clinical psychology doctoral candidates (six PhD candidates and four PsyD candidates), and one clinical psychologist who reported no experience in CBT for child anxiety. Therapists ranged in experience from 0 to 11 years ($M = 1.5 \pm 2.6$); nine had <6 months and 2 had >10 years’ experience. Of the 16 therapists, four reported that they had read the Coping Cat manual (Kendall & Hedtke, 2006) and/or attended a workshop but had never implemented the treatment. The remaining eight therapists reported never having read the Coping Cat manual. Therapists were randomly assigned to provide CCAL or ICBT, and all provided CESA as well. Therapists received (a) a study orientation and (b) the CCAL computer software or the Coping Cat manual, respectively, and the CESA manual and software. So that ICBT could function as an adequate benchmark, therapists randomized to ICBT also received a full-day workshop on the implementation of ICBT, including an overview of the principles of CBT for anxiety, training in conducting sessions on problem solving, and strategies for effective exposure tasks. ICBT therapists also participated in weekly supervision of the implementation of the ICBT protocol via conference calls with experienced CBT licensed clinical psychologists (Muniya Khanna and Philip C. Kendall). CCAL therapists participated in a separate weekly supervision call, which focused on patient safety monitoring and did not include feedback on treatment implementation. CESA cases were discussed on both calls, with a focus on safety monitoring and on minimizing bleeding between treatment protocols.

Measures

Anxiety Disorders Interview Schedule for Children–Parent Version (ADIS-P; Silverman & Albano, 1997). This semi-structured interview assesses symptoms and severity for DSM–IV diagnoses and permits diagnoses of comorbidities. Good interrater and retest reliability (Silverman & Eisen, 1992) have been reported. Parents and children were interviewed together for this study, following current recommendations to inform endorsement of a diagnosis and to deal with discrepant reports (Grills & Ollendick, 2002).

Children’s Global Assessment Scale (CGAS; Shaffer et al., 1983). Rated by independent evaluators (IEs) following ADIS, the CGAS reflects general functioning. The CGAS has retest

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1 A participant was also excluded if he or she had missed more than 50% of school days in the preceding 2 months. Home schooling did not require exclusion. Children who met exclusionary criteria were referred as needed. Participants receiving psychopharmacology (other than antianxiety or antidepressant medications) were included if they were on a 2-month stable dose.

2 There were four geographic locations, with patients randomized by a random number generator to condition within blocks for geographic location. This was done to ensure that participants had an equal chance of getting each treatment in their local area.

3 A modified version of the Coping Cat therapist manual was used. The 16-session version was modified, keeping the core components but implementing them in 12 sessions. Parent sessions were included as part of Sessions 4 and 9, rather than in stand-alone sessions, and review activities were eliminated.

4 The parent and child were interviewed together for this study. If there was disagreement between parent and child in response to an item, we followed current recommended guidelines, including giving consideration to external validators of impairment and treating discrepant information with an “OR” rule—that is, using both perspectives to inform endorsement of the presence of a symptom or diagnosis (Grills & Ollendick, 2002).
reliability (.69–.95) and sensitivity to levels of impairment (Shaffer et al., 1983).

Multidimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, Stallings, & Conners, 1997). The MASC is a 39-item self-report inventory. Retest reliability (mean intra-class correlation) is excellent over 3 weeks and 3 months (.93 and .78, respectively). Evidence of acceptable convergent and discriminant validity has been provided (March & Albano, 1998).

Children's Depression Inventory (CDI; Kovacs, 1981). The 27-item CDI has high internal consistency and moderate retest reliability, and it correlates with measures of related constructs (Kazdin, French, Unis, Esveldt-Dawson, & Sherick, 1983).

Computer Experience Questionnaire (CEQ). The CEQ, developed for this project, assessed the child user’s experience with and comfort using computers. The CEQ is a four-item, 5-point scale that children completed at pretreatment.

Therapeutic Alliance, Adherence, and Flexibility. A 13-item, 5-point scale was adapted from previous measures (Chu & Kendall, 1999) used in previous trials (e.g., Walkup et al., 2008). All sessions were audiotaped. Two raters (Muniya Khanna and

Figure 1. Consort flowchart of participants.
Philip C. Kendall independently reviewed 20% of the tapes (110 tapes, 50-min sessions), randomly selected to ensure representation of age and sex of patient and session number. A score of 3 represents a therapist who was adequately adherent and flexible and achieved an adequate ("good") therapeutic alliance.

Client Evaluation of Services (CSQ-8; Larsen, Attkisson, Hargreaves, & Nguyen, 1979). The CSQ-8 measures client satisfaction and has good retest reliability, internal consistency, and sensitivity to treatment (Nguyen, Attkisson, & Stegner, 1983). Nguyen et al. (1983) found the CSQ-8 discriminated groups without ceiling effects found in other measures.

Reliability

IE training on the ADIS-C/P followed recommended guidelines. The IEs reached interrater agreement at the outset (ADIS, $\kappa = .95$, within 1 point on diagnoses in the clinical picture), and no retraining was required, as interrater agreement was > .85 for the duration of the study. Training and reliability on the CGAS was conducted simultaneously, with interrater agreement established (CGAS, $\kappa = .91$) at the outset of the study. IEs were blind to participant treatment condition.

Interventions

Camp Cope-A-Lot (Kendall & Khanna, 2008). CCAL is a 12-session computer-assisted intervention for anxious children (ages 7–13 years). Based on the empirically supported Coping Cat program (Kendall & Hedtke, 2006), CCAL uses Flash animation, audio, photographs, videos, schematics, a reward system, text, and a fun cartoon characters to guide the user through the program (see Figures 2 and 3). CCAL consists of twelve 35-min “levels” and optional video game rewards. The first six levels, which the user completes independently, are skill building; the remaining six levels, to be completed with the assistance of the therapist (the coach), consist of exposure tasks and rehearsal in the specific anxiety-arousing situations chosen for each child. Two parent sessions are conducted by the coach while participant children work independently on Levels 3 and 7.

The goal was to develop a state-of-the art program that takes advantage of a multimedia platform to ensure effective and standardized delivery of CBT content (e.g., psychoeducation, cognitive restructuring, relaxation training, principles of exposure, homework), while preserving the benefits of face-to-face treatment. Unlike other computer-based treatments, CCAL immerses the child in an interactive learning environment. The participant (user) learns experientially rather than by reading pages of online text or audio/video instruction. CCAL has features that can be individualized (e.g., theme music, program pace, type of exposure tasks, video games). The program eliminates the need for specialty training and reduces required contact hours but allows for monitoring of symptoms and building a therapeutic alliance and supports compliance (e.g., adequate exposure tasks), thereby maximizing the integrity of the empirically supported CBT (see Khanna & Kendall, 2008, for a detailed description of the CCAL program).

Individual Cognitive Behavioral Therapy (ICBT). Participants randomized to ICBT received twelve 50-min individual CBT sessions over 12 weeks. CBT was a 12-session version of the Coping Cat program (Kendall & Hedtke, 2006), shortened to be the same length and contact time as CCAL. The first six sessions teach skills to the child, and the second six provide opportunities to practice new skills in exposure tasks both within and outside the office. The treatment includes strategies such as exposure tasks, relaxation training, and cognitive retraining and homework.

Computer-Assisted Education, Support, and Attention (CESA). CESA controlled for therapist contact, education about anxiety, computer interaction, expectations, maturation, and the passage of time. Therapists organized the sessions to include 30 min of education and support and 20 min for the child to use the computer. The computer accessed a variety of age-appropriate video games (e.g., Pac-Man, Simon Says, etc.) that increased in degree of difficulty and intensity with success. A 12-session education, support, and attention manual (as in Kendall et al., 2008) provided content that included psychoeducation about anxiety and review homework tasks.

Results

Preliminary Analyses

A priori power analyses confirmed that the sample ($N = 49$) was adequate (.81) for the primary analyses to be able to detect moderate to large effects, such as those reported in Silverman et al. (1999), a study comparing CBT for anxiety to an attention control. Analyses were conducted using an intent-to-treat sample, where scores were pulled forward from last assessment period and replaced missing values at posttreatment. Preliminary analyses revealed no significant pretreatment differences across conditions (see Table 1; i.e., CCAL, ICBT, CESA) on age, gender, race, level of computer experience (based on CEQ), pretreatment primary diagnosis, or pretreatment diagnostic severity (i.e., ADIS, MASC, CGAS, and CDI score).

Primary Outcomes

Child diagnostic status. Diagnostic outcomes were analyzed by examining participants’ pretreatment principal diagnoses by condition that were no longer present at posttreatment (i.e., clinician severity rating [CSR] < 4). Analyses indicated that 70%, 81%, and 19% (ICBT, CCAL, and CESA, respectively) of principal diagnoses were no longer present at posttreatment. Both ICBT–CESA differences and CCAL–CESA differences were significant. No significant differences were found for gender or age (with children categorized developmentally as 7–9 years and

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5 Research assistants watched and rated “gold standard” videotapes until they matched those of the gold standard rater on four tapes. Trainees were then supervised by an expert in two mock interviews. The IEs then observed two real interviews and finally administered the interview to two actual participants and received feedback and supervision. The expert trainer conducted reliability checks randomly (twice). One IE was a master’s level graduate student in clinical psychology. One IE held a B.A. (postgraduate) with two years of experience conducting phone screens and attending ADIS supervision in the Child and Adolescent Anxiety Disorders Clinic. All completed reliability training and reached reliability with the diagnostic supervisor and with each other.

6 Completer analyses were equivalent to those using the intent-to-treat sample and thus were not interpreted separately.
Figure 2. Camp Cope-A-Lot: sample interactivities.
10–13 years). Twenty-one (43%) participants continued to meet diagnostic criteria for a secondary diagnosis (N = 10, other internalizing; N = 8, attention-deficit/hyperactivity disorder; N = 2, oppositional defiant disorder; N = 1, tic disorder).

Clinician-rated severity and global assessment of functioning. IE ratings of severity (CSR) and global functioning (CGAS) showed significant change over time (see Table 1), with significant time effects on CSR ($F_{1, 46} = 135.6$, $p < .001$, $\eta^2 = .75$) and CGAS ($F_{2, 46} = 141$, $p = .000$, $\eta^2 = .77$). Significant Time $\times$ Condition interaction effects were evident for CSR ($F_{2, 46} = 10.5$, $p < .001$, $\eta^2 = .31$) and CGAS ($F_{2, 46} = 10.9$, $p = .000$, $\eta^2 = .38$). Children in ICBT and CCAL conditions showed significantly greater improvement than those in CESA.

Child self-report. Results of analyses of variance showed no significant condition effect for the CDI or MASC (see Table 1). However, main effects for time were evident for the MASC ($F_{2, 46} = 10.7$, $p = .000$, $\eta^2 = .39$), and CDI ($F_{2, 45} = 5.6$, $p < .05$, $\eta^2 = .12$). No significant Time $\times$ Condition effect was found.

Follow-Up Analyses

Only CCAL (N = 12) and ICBT participants (N = 14) were involved in statistical analyses, because nonresponders (N = 10) to the CESA treatment were offered ICBT or CCAL or appropriate referral and thus were not available. At follow-up, there were four dropouts from CCAL and two from ICBT. The families were either not interested in participating in the diagnostic interview (N = 2) or nonresponsive to calls (N = 4). Significant effects for time across three assessment periods were found (see Table 1) on CSR ($F_{1, 26} = 85.4$, $p = .000$, $\eta^2 = .93$), CGAS ($F_{1, 26} = 20.9$, $p = .000$, $\eta^2 = .78$), and MASC ($F_{2, 26} = 14.6$, $p = .000$, $\eta^2 = .57$). No significant condition effects or Time $\times$ Condition interaction effects were found in CSR, CGAS scores, or child-rated CDI and MASC scores between children in CCAL and ICBT conditions at 3-month follow-up.

Therapist Adherence, Flexibility, and Therapeutic Alliance

There were significant therapist adherence differences across conditions (see Table 2). Ratings indicated significantly greater therapist adherence to protocol for CCAL, $t(40) = 2.1$, $p < .05$, and CESA, $t(33) = 3.2$, $p < .01$, than for ICBT ($F_{2, 39} = 2.6$, $p < .05$). However, ratings suggest greater therapist flexibility to meet the needs of the patient in the ICBT condition ($F_{2, 39} = 10.9$, $p < .01$) than in CCAL, $t(38) = 3.5$, $p < .01$, and CESA, $t(33) = 2.6$, $p < .05$. There were no significant differences in ratings of the therapeutic alliance across the treatments.

Patient Satisfaction

There were significant differences across conditions in child-reported satisfaction (see Table 3). CCAL children reported significant higher rates of satisfaction on the CSQ-8 than those in CESA ($F_{2, 45} = 6.1$, $p < .05$), as did children in the ICBT condition ($F_{2, 45} = 3.36$, $p < .05$). There was no difference in child-reported satisfaction between ICBT and CCAL. No significant difference was found across conditions in parent ratings of satisfaction, though means were higher for parents of children in ICBT and CCAL than parents of children in CESA.
Discussion

The computer-assisted approach was found to be acceptable to children and parents and feasible for computer-assisted education, support, and attention control.

Table 1
Means, Standard Deviations, and Group Differences for Measures of Disorder at Pretreatment, Posttreatment, and 3-Month Follow-Up Across Conditions

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pretreatment</th>
<th>Posttreatment</th>
<th>3-month follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ICBT (N = 17)</td>
<td>CCAL (N = 16)</td>
<td>CESA (N = 16)</td>
</tr>
<tr>
<td></td>
<td>ICBT (N = 14)</td>
<td>CCAL (N = 12)</td>
<td></td>
</tr>
<tr>
<td>CSR (95% CI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>5.8</td>
<td>5.7</td>
<td>5.2</td>
</tr>
<tr>
<td>SD</td>
<td>1.2</td>
<td>.87</td>
<td>1.2</td>
</tr>
<tr>
<td>CGAS rating (95% CI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>54.1</td>
<td>53.8</td>
<td>60.5</td>
</tr>
<tr>
<td>SD</td>
<td>12.1</td>
<td>7.5</td>
<td>13.7</td>
</tr>
<tr>
<td>MASC total score (95% CI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>48.9</td>
<td>50.5</td>
<td>48.2</td>
</tr>
<tr>
<td>SD</td>
<td>14.5</td>
<td>12.8</td>
<td>15.0</td>
</tr>
<tr>
<td>CDI total score (95% CI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>25.2</td>
<td>27.2</td>
<td>23.2</td>
</tr>
<tr>
<td>SD</td>
<td>8.3</td>
<td>4.4</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Note. CSR = Clinical Severity Rating (based on ADIS-C/P); CGAS = Clinical Global Assessment Scale; MASC = Multidimensional Anxiety Scale for Children; CDI = Children’s Depression Inventory.

Table 2
Means and Standard Deviations (95% CI) of the Therapist Adherence, Flexibility, and Therapeutic Alliance for the Three Treatment Conditions

<table>
<thead>
<tr>
<th>Variable</th>
<th>ICBT</th>
<th>CCAL</th>
<th>CESA</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence M</td>
<td>24.2</td>
<td>27.0</td>
<td>26.0</td>
<td>2.6*</td>
</tr>
<tr>
<td>SD</td>
<td>5.3</td>
<td>3.1</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Flexibility M</td>
<td>2.4</td>
<td>1.5</td>
<td>1.0</td>
<td>10.9**</td>
</tr>
<tr>
<td>SD</td>
<td>1.1</td>
<td>0.5</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Alliance M</td>
<td>2.8</td>
<td>3.0</td>
<td>3.0</td>
<td>0.45</td>
</tr>
<tr>
<td>SD</td>
<td>0.77</td>
<td>0.67</td>
<td>0.10</td>
<td></td>
</tr>
</tbody>
</table>

Note. ICBT = individual cognitive behavioral therapy; CCAL = Camp Cope-A-Lot (computer-assisted therapy); CESA = computer-assisted education, support, and attention control.

Table 3
Means and Standard Deviations (95% CI) of Patient Satisfaction: Child and Parent Ratings

<table>
<thead>
<tr>
<th></th>
<th>ICBT</th>
<th>CCAL</th>
<th>CESA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>26.0</td>
<td>27.3</td>
<td>22.4*</td>
</tr>
<tr>
<td>SD</td>
<td>4.5</td>
<td>4.1</td>
<td>5.2</td>
</tr>
<tr>
<td>Parent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>26.8</td>
<td>26.9</td>
<td>23.7*</td>
</tr>
<tr>
<td>SD</td>
<td>2.6</td>
<td>4.1</td>
<td>6.9</td>
</tr>
</tbody>
</table>

Note. ICBT = individual cognitive behavioral therapy; CCAL = Camp Cope-A-Lot (computer-assisted therapy); CESA = computer-assisted education, support, and attention control.

anxiety did not show posttreatment differences between conditions—all children reported a reduction in anxiety over time. This finding may reflect that children benefited from the educational components that were consistent across all conditions or from the therapeutic relationship. Some improvements in anxiety from ESA treatments are not uncommon (e.g., Silverman et al, 1999; Kendall et al., 2008). It may also be that parents, who were not blind to condition, influenced IE ratings of anxiety severity at posttreatment interviews.

Our results found that CCAL had higher ratings of therapist adherence than ICBT. Having a proportion of the treatment systematically delivered via computer likely contributed to greater adherence in novice therapists. Establishing adequate adherence is not only an important precursor to wide-scale dissemination (Schoenwald & Hoagwood, 2001) but also may reduce problems associated with therapist deviations using manual-based treatments (Greist, 2008).

Ratings of therapist flexibility (within fidelity) were greater in ICBT than in CCAL and CESA, likely due to the delivery of a
proportion of the content via computer in the CCAL and CESA conditions. Although both manuals and computers have been accused of limiting therapist flexibility (e.g., Eifert, Evans, & McKendrick, 1990), some evidence suggests that the degree of therapist flexibility is not predictive of outcome status (Chu & Kendall, 2009). In contrast to concerns voiced in the literature about computer-based work, therapeutic alliance did not suffer as a result of delivery via computer (no significant alliance differences across conditions). In CCAL and CESA, therapist involvement guided 50% of the treatment, which seems to have been sufficient for a therapeutic alliance. Related to this, therapist contact and alliance may account for the compliance (100%) in CCAL compared with compliance in computer-based treatments with minimal therapist contact (e.g., Spek et al., 2007).

Though both parents and children rated all three treatments as acceptable, only children rated having more satisfaction with ICBT and CCAL than with CESA. It may be that because the child participants had access to the treatment content and delivery approach, they had greater variability in their ratings, whereas parents’ ratings may reflect a positive experience with the therapists (i.e., “quality of service”) in all conditions.

Limitations

Future trials should include (a) longer term follow-up, (b) sufficient samples to examine mediators and moderators of outcome and to reliably detect small effects, (c) parent self-report measures, and (d) a more diverse sample, including data regarding socioeconomic status; ours was a primarily Caucasian sample, and socioeconomic status data are not available. An additional limitation of this study is that all therapists provided CESA, and there was no random therapist assignment for training to provide CESA. Therefore, future studies would also benefit from a larger sample of novice therapists to be able to achieve equal therapist random assignment to group. Questions also remain regarding differences in the effectiveness of the interventions, given that no differences were found in child self-reported symptoms of anxiety and depression across conditions. Also, it would be of interest to investigate whom CCAL would be most likely to benefit, particularly with regard to the type and severity of disorder. Large-scale effectiveness research is needed to determine the cost-effectiveness of computer-assisted approaches, the extent to which they will be adopted by community therapists with sustained use and adherence to the treatment protocol, and any barriers to implementation and sustainability.

Clinical Implications

As March (2009) noted, “more often than not, interventions will be streamed over the Internet for reasons of uniformity and standardization, ease of delivery, and cost-effectiveness” (p. 174). Though many patients will require specialized treatment, there is a place within stepped care for empirically supported computer-assisted treatments.

A significant proportion of children continued to meet diagnostic criteria for a secondary diagnosis; although there were gains, mean global functioning scores did not return to optimal functioning, and more treatment for nontarget issues would be warranted. Though questions remain and further evaluation research is needed, the computer-assisted approach holds promise for the dissemination of evidence-based treatment of child anxiety.

References


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