



# Practitioners' Use and Evaluation of Transdiagnostic Youth Psychotherapy Years After Training and Consultation Have Ended

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## Abstract

We examined practitioners' use of the transdiagnostic *Modular Approach to Therapy for Children* (MATCH) 7 years after learning MATCH for a clinical trial. The practitioners ( $N = 29$ ;  $M_{age} = 52.10$ ,  $SD = 12.29$ , 86% women, 97% white) reported using MATCH with 55% of their caseload; use of the various MATCH modules ranged from 39 to 70%. Use was positively associated with amount of MATCH experience in the trial, perceived effectiveness, and ease of implementation. Patterns of specific module use did not consistently match strength of prior evidence (e.g., exposure was least used of the anxiety modules), suggesting challenges for implementation science.

**Keywords** Empirically supported · Psychotherapy · Children · Adolescents · Sustainability

In recent decades, knowledge about empirically-supported psychotherapies has grown substantially (e.g., see Evidence-Based Practices Resource Center—<https://www.samhsa.gov/ebp-resource-center>), and has been coupled with concerted efforts to disseminate and implement empirically-supported treatments (ESTs) in clinical care settings. In research on usual clinical care for children and adolescent (herein “youths”), findings suggest that ESTs are not being provided to youths with much intensity or consistency (e.g., Brookman-Frazee et al. 2010; Mitchell 2011). This may be unfortunate, given evidence that EST elements are associated with positive effects when used at high intensity by practitioners (e.g., Garland et al. 2014), and that ESTs produce better clinical outcomes than usual clinical care in randomized controlled trials (Weisz et al. 2006, 2013). Considering the significant resources needed for training and implementing ESTs, and the challenges associated with incorporating ESTs into everyday clinical practice, an important focus of scientific inquiry is the relation between

training and skill-building in ESTs, on the one hand, and their subsequent use in everyday clinical practice after the training and support have ended. This topic is an emerging focus of the implementation science of youth psychotherapy (Weisz et al. 2014; Williams and Beidas 2018).

Implementation studies have increasingly been incorporated within randomized trials in clinical practice settings (e.g., Aarons and Palinkas 2007; Glisson et al. 2010; Whitley et al. 2009), often with a focus on processes observed during the trials. Studies have, for example, tested different approaches to practitioner training (e.g., Herschell et al. 2010), probed for predictors of community practitioners' use of therapy techniques (e.g., Beidas et al. 2015), evaluated collaborative models for scaling up ESTs (e.g., Chamberlain et al. 2012), studied practitioner burnout and other costs associated with scaling up ESTs (Kim et al. 2018; Tommeraa and Ogden 2017), and examined financing issues linked to implementing ESTs in practice (Crome et al. 2017; Stewart et al. 2016).

Less common have been studies of whether practitioners who learn ESTs, often in treatment studies, continue to use those ESTs over time after the studies have ended. Some researchers (e.g., Bond et al. 2012) have analyzed what agency and state administrators report about sustainability of ESTs over time within their programs, and that is useful. However, since front-line practitioners actually do the treatment, it seems important to follow up with them over time after EST training and support (e.g., via

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case consultation from EST experts) have ended, to assess the extent of continued EST use by those who know firsthand what practices they are employing. Previous work has focused on studying sustainability by following up with practitioners after they received training in an EST, often as part of a treatment trial. In their reviews, Beidas and Kendall (2010) and Herschell et al. (2010) both found that *long-term* follow-ups with practitioners after EST training were rare.

One exception is a follow-up study conducted by Chu et al. (2015). The study obtained practitioners' reports 3 to 5 years after their participation in one of two randomized effectiveness trials for which they had completed training and consultation in cognitive behavioral therapy (CBT) for either youth anxiety or depression. Practitioners rated each manual and its component procedures as effective, but most reported using only some components of the learned manuals rather than implementing the full treatment manual in the prescribed sequence. The study also found that intervention procedures that were rated as more difficult to implement were less likely to be sustained years later. The study sheds light on continued implementation of traditional ESTs in which a prescribed sequence of session content is used to address a single type of problem or disorder. As a complement, it may be useful to focus research on a recently emerging approach to youth psychotherapy, for which patterns of continued use may operate somewhat differently: transdiagnostic, modular treatment.

The development of transdiagnostic, modular treatment reflects, in part, an effort to improve synchrony between treatment design and the conditions of everyday mental health care (Weisz et al. 2015). Practitioners tend to work with youths across a range of disorders and problems, but often lack the time or resources to learn a separate treatment manual for each disorder or problem area in their caseload. In addition, most clinically referred youths present with multiple disorders and problems (Angold et al. 1999), so that even if a practitioner were to master many single disorder treatment manuals, there would be no evidence-based guidelines for navigation among the manuals to address comorbidity. Furthermore, a youth's problems that need attention may shift during a treatment episode, and manuals with linear design (a prescribed sequence of sessions in a relatively fixed order) may lack the flexibility to address this flux. An effort to fit empirically supported treatment content to the conditions of clinical practice has led to the development of approaches that can address multiple disorders and problem areas, and shift focus as needed. Such *transdiagnostic, modular* treatments are designed to combine the structure of manuals that use empirically supported content with the flexibility needed to meet the complex needs of youths and families in everyday treatment (for more details, see Marchette and Weisz 2017).

A current example of transdiagnostic, modular treatment for young people is the *Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, or Conduct Problems* [MATCH] (Chorpita and Weisz 2009). MATCH was created to address some of the common barriers faced by practitioners when trying to implement ESTs in everyday clinical settings, by incorporating design features that address breadth of practitioner caseloads, client comorbidity, and fluctuations in client problems during treatment episodes. In addition, MATCH was intended to ease the training burden for practitioners by providing treatment content that addresses a substantial portion of an outpatient practitioner's typical caseload. Designed for 5- to 15-year-olds, the MATCH manual is essentially a menu of treatment components that are common in CBT for depression (e.g., behavioral activation), CBT for anxiety (e.g., graduated exposure), CBT for trauma (e.g., trauma narrative), and behavioral parent training for conduct problems (e.g., praise and reward). The breadth of problem coverage, synthesis of multiple treatment elements, flexibility, and personalizability of MATCH were intended in part to improve effectiveness and user appeal for practitioners, and thus to support sustained use over time. However, the broad problem coverage and the challenge of navigating through multiple protocols and modules might also increase difficulty of implementation and potentially undermine perceived effectiveness and sustainability. During research trials, practitioners receive consultation on their clinical decision making about coordinating modules. In real-world practice without expert consultation, practitioners may feel less confident and knowledgeable about how to coordinate treatment modules. Thus, research is needed to assess the extent to which MATCH use is sustained over time in practice, and how practitioners evaluate the implementation difficulty and effectiveness of MATCH and its components.

One group of investigators took an interesting qualitative look at implementation related to both MATCH and single-disorder empirically supported treatments, over a relatively brief period. Palinkas et al. (2013) used semi-structured interviews and focus groups to ask practitioners who had used either treatment approach about their patterns of use three months after a randomized controlled trial (Palinkas et al. 2013). The practitioners reported relatively high levels of continued use of at least some components of MATCH and single disorder treatments, albeit with numerous adaptations and adjustments. To our knowledge, there has never been a study of sustained use of MATCH over an extended period of time, using quantitative and qualitative methods, and focused only on practitioners trained in MATCH. We carried out such a study. Our reasoning was that following up on a MATCH treatment study with assessments of long-term continued use—and of practitioner evaluations of MATCH and its components—might contribute usefully

to implementation science, informing efforts to understand and improve sustainability of transdiagnostic, modular youth psychotherapy.

Toward this end, we examined practitioners' use and perceptions of MATCH and its component modules years after the practitioners had received training and consultation in MATCH for an effectiveness trial based in the community mental health clinics where they worked (Weisz et al. 2018). Our questions included: (1) To what extent are practitioners continuing to use MATCH and its component modules, years after the end of the original trial? (2) How do practitioners evaluate MATCH and its modules on effectiveness and ease or difficulty of implementation? (3) What do practitioners identify as perceived barriers to and facilitators of MATCH use? (4) What is the strength of association between current MATCH use and (a) perceived effectiveness, (b) perceived implementation difficulty, and (c) amount of practitioners experience delivering MATCH with consultation in the original trial.

## Method

### Participants

Participants were practitioners who had participated in a trial of the MATCH program in three large outpatient community mental health clinics (Weisz et al. 2018). In that trial, 168 clinically-referred youths were treated by 53 practitioners, all using MATCH. The MATCH training spanned 6 days. After training, the practitioners treated clinic-referred youths using MATCH while receiving weekly group consultation (1 h/week) on their study cases. The trial compared practitioners who received their consultation from external MATCH consultants to those who received their consultation from internal MATCH consultants who were supervisors within their clinic; the findings showed no significant group differences in any of six MATCH fidelity measure comparisons or on any of 28 clinical outcome measure comparisons. So, it seemed appropriate to combine practitioners from the two consultation conditions for analyses of the present follow-up study.

We attempted to contact all 53 practitioners to determine whether they were still providing psychotherapy to children and/or adolescents; 14 were not, and ten could not be located. We contacted the remaining 29 practitioners, and all agreed to participate. These included 25 women, 4 men ( $M_{age} = 52.10$ ,  $SD = 12.29$ ), one native American and the others white. Practitioners indicated their highest degree and credentials; 52% identified as Licensed Clinical Social Worker, 24% as Master of Social Work, 7% as Masters degree unspecified, 10% as Licensed Clinical Professional Counselor, 3% as PhD in Psychology, and 3% as Ed.D. in

Education. Primary theoretical orientations included: Cognitive-behavioral ( $n = 17$ ), Acceptance and Commitment Therapy ( $n = 1$ ), Psychodynamic ( $n = 1$ ), Family Systems ( $n = 1$ ), Eclectic ( $n = 4$ ), and other ( $n = 5$ ; e.g., Humanistic, Solution-focused, Client-centered, and Faith-based CBT).

For the 29 practitioners, the mean number of weeks of experience delivering MATCH in the trial—all with MATCH weekly consultation provided—was 84.41 ( $SD = 35.24$ ). This number was obtained by summing the number of weeks practitioners attended consultation, after having been assigned a study case. The mean lag between completion of MATCH training in the trial and survey completion for this follow up was 6.91 years ( $SD = 1.33$ ). The mean lag between the end of the treatment phase of the trial and survey completion for the follow-up was 3.63 years ( $SD = 1.81$ ).

### The MATCH-ADTC Program

MATCH ADTC (Chorpita and Weisz 2009) is a collection of 33 “modules,” each one describing a particular treatment procedure (e.g., praise, problem solving) derived from ESTs. The modules are grouped within four clusters or “protocols”: anxiety, depression, trauma, and conduct. Each protocol is comprised of core modules for the designated problem area (e.g., exposures for anxiety, cognitive restructuring for depression), but practitioners can “borrow” modules from other protocols to facilitate successful treatment. Flowcharts provide guidance in navigating through core treatment procedures for a specific problem and incorporating secondary procedures where needed. For instance, a practitioner attempting to guide a youth through exposure (the “Practicing” module), may face interference from a resistant youth. Using guidance in the flowchart, the practitioner seeks to identify the nature of the interference, then use a secondary module to address it (e.g., using the Rewards module to boost the youth's motivation to try exposure), then return to the Practicing module. Randomized controlled effectiveness trials (Chorpita et al. 2017; Weisz et al. 2012) have found that MATCH produces clinical outcomes superior to those of usual clinical care and to standard treatment protocols that use prescribed sequences of treatment content to treat a single type of problem or disorder.

## Measures

### Therapist Background Questionnaire

Practitioners completed a therapist background questionnaire (TBQ) that included questions about their demographics, education, professional credentials, age group served, and theoretical orientation.

## MATCH Follow-Up Survey

The MATCH follow-up survey was adapted from the list of question posed by Chu et al. (2015) in their follow-up study focused on use of the Coping Cat Anxiety CBT protocol and the PASCET Depression CBT protocol. The survey included three components. First, practitioners were asked to report on (a) perceived effectiveness, (b) difficulty in implementing, and (c) percent use with current cases for MATCH overall and for each of the MATCH modules separately (e.g., “Thinking about the MATCH treatment overall, how *effective* do you think the MATCH treatment is for your current cases?” “How *difficult* is it for you to use MATCH with your current cases?” and “About what percentage of your current child and adolescent cases do you use MATCH with?”). For the questions about perceived effectiveness, difficulty implementing, and percent use with current cases, we used the same wording as Chu et al. (2015) to facilitate comparison of their findings for traditional manualized treatments focused on one type of psychopathology (one treatment for anxiety, one for depression) with our findings for the transdiagnostic and modular MATCH treatment program. MATCH use was defined as *any* use. In other words, there was no minimum usage required for practitioners to endorse using MATCH with their cases.

The second component asked practitioners to report on (a) perceived effectiveness and (b) percent use with current cases, across a range of presenting problems (e.g., “How *effective* has MATCH been with cases involving these problems?” and “In what percentage (0–100%) of your cases did you *use* MATCH with cases focused on these problems?”). The third component asked practitioners to report on (a) perceived strengths and weaknesses of the MATCH program as well as (b) three things to change and three things to keep (i.e., “Based on your use of MATCH in your clinical practice, what do you see as the strengths/weaknesses of the MATCH program?” “If you could change MATCH in three ways, to make it a better fit to your clinical practice, what would those changes be?” and “What are three things about MATCH that you would want to keep as they are?”).

## Procedure

The research team initially reached out to practitioners using their contact information from the original trial. If that approach failed, the team attempted to contact practitioners via previous employers, reviewing licensure databases, and searching professional/social media sites. All practitioners whom we contacted consented to completing the survey; 26 completed the survey online via Qualtrics, and three chose to complete a hardcopy version. Practitioners were compensated \$50 for their time. All procedures were approved by the university’s Institutional Review Board.

## Results

### Continued Use of the MATCH Program, Protocols, and Modules

When asked what percentage of their child and adolescent caseload they use the MATCH program with, practitioners reported a range of 1% to 100% use, with a mean of 55.33% ( $SD = 33.22\%$ ). As shown in Table 1, the Conduct protocol was the most frequently used (58%), followed by the Depression (56%), Anxiety (50%), and Trauma protocols (39%). Paired-samples  $t$  tests with bootstrapping (5000 resamples) examined differences between the protocols. The Conduct protocol was used significantly more than the Anxiety and Trauma protocols,  $t(27) = 3.21$ , BCa 95% CI [3.56, 14.83] and  $t(27) = 3.30$ , BCa 95% CI [7.12, 32.55], respectively. The Anxiety and Depression protocols were used significantly more than the Trauma protocol,  $t(27) = 2.01$ , BCa 95% CI [1.50, 20.14] and  $t(27) = 2.48$ , BCa 95% CI [3.91, 29.85], respectively. No other comparisons were significant.

One part of the survey had separate sections for each of the four MATCH protocols, for practitioners to report their use of the modules within each problem area. Within Anxiety, percent use of the modules ranged from 49 to 60%. Getting Acquainted—Anxiety (i.e., psychoeducation) was used the most, and Practicing (i.e., exposure) was used the least,  $t(27) = 2.28$ ,  $p = .031$ , BCa 95% CI (bias-corrected and accelerated bootstrap 95% confidence interval, based on 5000 resamples) [3.21, 21.61]. Depression module use ranged from 49 to 66%. Learning about Depression—Parent (i.e., psychoeducation) was the least frequently used and Learning to Relax (i.e., progressive muscle relaxation training) was the most frequently used,  $t(27) = -3.16$ ,  $p = .004$ , BCa 95% CI [-28.07, -6.70]. Module use from the Trauma protocol was significantly lower for Trauma Narrative than Safety Planning,  $t(27) = 2.39$ ,  $p = .024$ , BCa 95% CI [2.24, 19.43]. Finally, percent use of Conduct modules ranged from 39% to 70%. Daily Report Card was used significantly less frequently than the Praise module, which was used the most,  $t(27) = 5.75$ ,  $p < .001$ , BCa 95% CI [20.18, 41.59].

Practitioners also reported on their continued use of MATCH with different presenting problems, and these reports are presented in Table 2. Practitioners reported using MATCH the most for conduct-related problems (66.81%), followed by anxiety (61.43%), family problems (53.29%), depression (48.38%), ADHD (46.19%), and post-traumatic stress (33.57%). Percent use was reported at 47.40% for “Other” problems; those noted most often were school problems and working with families awaiting adoption or reunification. We conducted  $t$ -tests with

**Table 1** Continued use of MATCH modules and protocols

	Mean percent use (SD)
Overall MATCH program	55.33 (33.22)
Anxiety protocol	49.69 (36.72)
Getting acquainted—anxiety	60.36 (43.65)
Fear ladder	49.39 (41.81)
Learning about anxiety—child (psychoeducation)	56.21 (40.59)
Learning about anxiety—parent	53.14 (39.96)
Practicing (exposure)	48.61 (40.99)
Maintenance	49.21 (41.21)
Cognitive—STOP	49.25 (41.39)
Wrap up	52.29 (42.41)
Depression protocol	55.56 (35.19)
Learning about depression—child (psychoeducation)	54.18 (39.15)
Learning about depression—parent	49.39 (39.05)
Problem solving	55.54 (37.92)
Activity selection (behavioral activation)	53.29 (39.94)
Learning to relax (relaxation skills)	66.07 (37.20)
Quick calming	56.71 (38.57)
Presenting a positive self	51.39 (39.90)
Cognitive coping—BLUE	53.39 (37.44)
Cognitive coping—TLC	58.14 (37.85)
Plans for coping	57.54 (38.93)
Trauma protocol	39.23 (38.38)
Safety planning	44.61 (42.89)
Trauma narrative	33.86 (37.26)
Conduct protocol	58.46 (31.90)
Engaging parents	64.29 (38.41)
Learning about behavior (psychoeducation)	64.75 (36.30)
One-on-one time	64.21 (34.77)
Praise	70.00 (32.46)
Active ignoring	66.25 (33.04)
Giving effective instructions	62.04 (35.27)
Rewards	61.25 (35.39)
Time out	47.61 (33.35)
Making a plan	58.68 (33.67)
Daily report card	39.39 (31.98)
Looking ahead	57.89 (37.79)
Booster session	45.11 (35.35)

bootstrapping (5000 resamples) to test for differences in use for specific presenting problems. Given the number of comparisons, we applied a Bonferroni correction. Practitioners reported using MATCH significantly more for conduct problems than depression, posttraumatic stress, and ADHD. Also, MATCH was used significantly more for anxiety than for posttraumatic stress.

### Perceived Effectiveness and Difficulty in Implementing MATCH and Its Modules

#### Effectiveness

The overall effectiveness of MATCH was rated at a 7.59 ( $SD = 1.97$ ) on a scale of 0 (*not at all effective*) to

**Table 2** Continued use of MATCH and paired-samples *t* tests comparing percent MATCH use for types of presenting problem

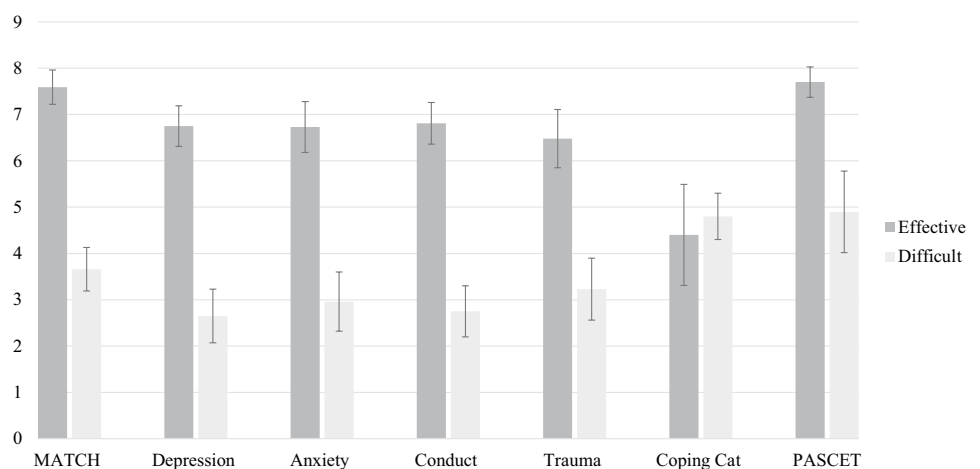
Presenting problem	Mean percent use (SD)			
Anxiety	60.36 (43.65)			
Depression	48.38 (31.29)			
ADHD	46.19 (33.50)			
Misconduct, behavior problems	66.81 (30.36)			
Post-traumatic stress	33.57 (35.95)			
Family relationship problems	53.29 (31.66)			
Other	47.40 (45.25)			
Comparison	<i>t</i> (26)	<i>p</i>	BCa 95% CI	
			Lower	Upper
Anxiety vs. depression	2.14	.042	1.70	18.37
Anxiety vs. PTS	3.33	.003*	11.54	42.23
Anxiety vs. conduct	-1.65	.111	-26.59	1.40
Anxiety vs. ADHD	2.96	.006	7.07	26.48
Anxiety vs. family problems	.74	.466	-7.74	17.62
Depression vs. PTS	2.21	.036	1.34	32.69
Depression vs. conduct	-3.35	.003*	-34.09	-9.10
Depression vs. ADHD	1.48	.152	-1.63	15.59
Depression vs. family problems	-.78	.440	-16.24	7.17
PTS vs. conduct	-4.90	.000*	-53.15	-23.56
PTS vs. ADHD	-1.14	.266	-26.69	7.28
PTS vs. family problems	-2.39	.025	-37.63	-4.40
Conduct vs. ADHD	4.10	.000*	16.30	40.93
Conduct vs. family problems	2.81	.009	6.85	28.50
ADHD vs. family problems	-2.02	.053	-23.00	-.91

Negative *t*-values indicate more use of MATCH for the second presenting problem listed than for the first (e.g., MATCH used more for conduct problems than for depression)

BCa bias-corrected and accelerated (bootstrap confidence interval based on 5000 resamples), *PTS* posttraumatic stress, *ADHD* attention-deficit/hyperactivity disorder

\*Indicates significance with a Bonferroni correction (.05/15)

**Fig. 1** Perceived effectiveness and difficulty in implementing the MATCH program overall and the depression, anxiety, conduct, and trauma protocols. The two sets of bars on the right represent effectiveness and difficulty ratings for the coping cat and PASCET protocols as published in Chu et al. (2015)



9 (*extremely effective*), in which “5” indicates moderate effectiveness. Protocol effectiveness ranged from 6.48 (Trauma) to 6.81 (Conduct). See Fig. 1. We examined effectiveness for all modules rated separately. The Praise module from the Conduct protocol was rated as the most effective ( $M = 8.00$ ,  $SD = 2.13$ ), and the Daily Report Card (also from the Conduct protocol) was rated as the least effective ( $M = 5.46$ ,  $SD = 3.00$ ). None of the modules was rated as less than moderate in terms of effectiveness. Paired-samples t-tests showed no significant differences between any pair of protocols (t-values:  $-.74$  to  $.85$ ).

Practitioners also reported on perceived effectiveness of MATCH for various presenting problems. Mean effectiveness was 7.64 for anxiety problems ( $SD = 2.40$ ), 7.37 for conduct problems ( $SD = 2.29$ ), 7.00 for depression ( $SD = 2.33$ ), 6.29 for family relationship problems ( $SD = 2.76$ ), 5.71 for post-traumatic stress ( $SD = 3.17$ ), 5.64 for ADHD ( $SD = 2.74$ ), and 3.83 for other problems (e.g., problems between home and school;  $SD = 3.69$ ). MATCH was rated at least moderately effective (i.e., 5 or above) for all identified problem areas except “other.”

### Comparison to Traditional Manuals

We compared practitioners’ effectiveness ratings of MATCH to practitioner ratings of more traditional treatments each focused on a single type of problem or disorder—i.e., Coping Cat and PASCET—reported by Chu et al. (2015). This was possible because our follow-up effectiveness questions were the same as those of Chu et al. We conducted t-tests using the effectiveness means, standard deviations, and sample sizes reported in Chu et al.; MATCH overall was rated significantly more effective than Coping Cat,  $t(38) = 3.60$ ,  $p < .001$ ,  $d = 1.10$ . Because Coping Cat is designed to address anxiety, we also compared effectiveness ratings for the MATCH Anxiety protocol with Coping Cat effectiveness ratings; MATCH Anxiety was rated significantly more effective than Coping Cat,  $t(38) = 2.13$ ,  $p = .040$ ,  $d = .71$ . There were no significant differences in effectiveness between MATCH and PASCET,  $t(39) = 0.18$ ,  $p = .858$ ,  $d = -.07$ , or between MATCH Depression and PASCET,  $t(39) = 1.33$ ,  $p = .190$ ,  $d = -.52$  (See Fig. 1). Since Chu et al. reported ratings of Coping Cat effectiveness with anxiety cases, and PASCET with depression cases, we examined the corresponding ratings for MATCH. MATCH was rated significantly more effective than Coping Cat for anxiety cases,  $t(38) = 3.31$ ,  $p = .002$ ,  $d = 1.06$ . MATCH and PASCET ratings were very similar for effectiveness with depression cases,  $t(39) = 0.99$ ,  $p = .330$ ,  $d = -.38$ .

### Difficulty in Implementing

Overall difficulty in implementing MATCH was rated 3.66 ( $SD = 2.54$ ) on a scale of 0 (*not at all difficult*) to 9 (*extremely difficult*). Difficulty in implementing the various MATCH protocols ranged from 2.65 (Depression) to 3.23 (Trauma) (See Fig. 1). We examined difficulty ratings of all modules to identify any that were rated particularly difficult to implement. Praise was rated the least difficult to implement ( $M = 1.96$ ,  $SD = 3.38$ ). Trauma Narrative and Cognitive STOP (from the Trauma and Anxiety protocols) were both rated as the most difficult to implement ( $M = 3.43$ ,  $SD = 3.72$  and  $M = 3.43$ ,  $SD = 3.53$ , respectively). All modules were rated below the moderate level of difficulty (i.e., 5). Paired-samples t-tests showed that no two protocols differed significantly (t-values  $-1.32$  to  $.90$ ).

### Comparison to Traditional Manuals

We compared MATCH difficulty ratings to the difficulty ratings for Coping Cat and PASCET as reported in Chu et al. (2015). Both MATCH and the MATCH Anxiety protocol were rated significantly less difficult to implement than the Coping Cat,  $t(38) = 3.41$ ,  $p = .002$ ,  $d = -.93$  and  $t(38) = 5.13$ ,  $p < .001$ ,  $d = -1.46$ , respectively. Similarly, both MATCH and the MATCH Depression protocol were rated significantly less difficult to implement than PASCET,  $t(39) = 3.86$ ,  $p < .001$ ,  $d = -1.02$  and  $t(39) = 2.16$ ,  $p = .037$ ,  $d = -.57$ , respectively (See Fig. 1).

### Perceived Barriers and Facilitators of MATCH Use

We measured perceived barriers and facilitators in two ways. First, practitioners reported on perceived weaknesses and strengths of the MATCH program. All text responses from these open-ended questions were coded and organized by subtype. When a practitioner’s response included more than one weakness or strength, each was counted as a unique barrier or facilitator. Second, practitioners reported on the things they would change and keep with the MATCH program. These questions were open-ended, with practitioners limited to identifying three things they would change and three things they would keep. Responses were coded by a PhD-level MATCH consultant, and to examine inter-rater reliability of this coding, all responses were independently coded by a second PhD-level MATCH consultant. Kappas ranged from .82 to .92 across four sets of categories—one for barriers ( $k = .89$ ), one for what practitioners would change about MATCH ( $k = .92$ ), one for facilitators ( $k = .82$ ), and one for what practitioners would keep the same about MATCH ( $k = .86$ ).

## Perceived Barriers

Practitioners identified 29 unique barriers, which were classified into four categories: structure ( $n=3$ ), content ( $n=8$ ), effectiveness ( $n=2$ ), and other ( $n=16$ , not MATCH related). Structure-related barriers focused on practitioners' perception that MATCH can be rigid at times (e.g., "It feels somewhat linear at times and too focused."). In terms of content, practitioners commented that materials do not cover the full developmental spectrum (e.g., "Some of the depression tools were a little young for older kids, but easy to adapt."). Two practitioner responses related to perceived ineffectiveness (e.g., "I haven't found it to help as much with depressive symptoms." and "I find with depression and anxiety it can help decrease symptoms but often changes feels more temporary."). Several responses were classified as "other" because they referred to barriers that were not related to MATCH specifically. Rather, they were related to practitioner characteristics (e.g., "I never got comfortable with [the] anxiety module," "I prefer trauma focused CBT as opposed to the MATCH trauma protocol.") and client characteristics (e.g., "Also, parents may not want to do homework. This gets really problematic." "Parents not following through with use of techniques consistently." "Sometimes a challenge is working w/parent when the co-parent isn't on board with learning skills").

Practitioners identified 47 things they would change about MATCH, which were classified into six categories: material options ( $n=14$ ), content ( $n=10$ ), structure ( $n=3$ ), support ( $n=5$ ), additional adaptations ( $n=9$ ), and other ( $n=6$ ). In terms of material options, practitioners stated they would like worksheets and handouts for older youth (e.g., "Make several versions of the handouts to match age/developmental level." and "More handouts for adolescents.") and recommended other materials that could be useful such as reference cards for the modules, creative end-of-session progress reports, and more ideas for relaxation. Practitioners recommended clarifying or simplifying module content (e.g., "Make the rewards portion easier to understand/follow or better directions." "Time out instructions streamlined or get rid of time out." "Rewards chart streamlined"). Three responses commented on MATCH structure such as making MATCH more flexible. Practitioners recommended additional supports such as phone consultation and booster training sessions (e.g., "Someone available by phone if needed." "Online chat or support for clinical questions or coaching." "Yearly training brush-ups."). Practitioners identified opportunities for adaptations of MATCH for other problem areas, home-based treatment, and short-term treatment. Finally, five responses were classified as "other" because they did not pertain to MATCH specifically (e.g., "Having common barriers to engagement identified and intervention strategies identified.").

## Perceived Facilitators

Practitioners identified 53 facilitators of MATCH use, which were classified into five types: structure ( $n=19$ ), content ( $n=19$ ), effectiveness ( $n=7$ ), target population ( $n=4$ ), and other ( $n=4$ , these did not relate to MATCH use). Structure-related facilitators included: structured sessions with step-by-step guides (e.g., "Step by step makes it organized and easy to prepare for session, no surprises on approach." "Ease of session structure.") and the modular approach (e.g., "I love that MATCH has modules, a very spelled-out way of doing things." "Ability to move between modules as needed."). Practitioners also commented on the flexibility of MATCH and being able to individualize the treatment to fit children and families (e.g., "Provides a way to individualize skills based therapy for children and families."). Practitioners identified specific content as facilitating use, including specific tools available within modules; these included the psychoeducation information, session activities, metaphors (e.g., coach metaphor), and handouts (e.g., "Parents seem to really like the handouts to help in enforcing topics at home." "With nearly all the parents I work with, I ask them about traits of their favorite coach, teacher, boss... Which is VERY effective to aid in cognitive shifts around parenting approaches."). Practitioners highlighted effectiveness as a primary facilitator of MATCH (e.g., "Most importantly- it works!!!" "Increases positive outcomes." "The skills themselves are effective."). Practitioners highlighted the target population MATCH addresses as a strength of the program (e.g., "MATCH provides a consistent, systematic format that can be used to address the major child mental health problems, which I encounter.").

Practitioner identified 61 things they would keep in the MATCH program, which were classified into six categories: content such as the specific protocols/modules ( $n=26$ ), MATCH approach ( $n=12$ ), structure ( $n=10$ ), handouts ( $n=8$ ), training ( $n=3$ ), and other ( $n=2$ ). A majority of the responses falling within the content category simply listed the protocol or module the practitioners would keep (e.g., relaxation and problem solving from the Depression protocol, fear ladder and exposures from the Anxiety protocol, and psychoeducation and active ignoring from the Conduct protocol). Comments acknowledged MATCH handouts, metaphors and acronyms, parental involvement throughout the course of treatment, and the "leave 'em laughing" element at the end of the session. Practitioners highlighted the importance of the MATCH program structure, including the modular approach and session structure, as important components to keep. Practitioners reported wanting to keep the flexibility and ease of treatment resulting from the structure of MATCH. Finally, two responses referred to the training (e.g., "Original training was terrific.") and consultation (e.g., "Having the consultation group allows for therapist to learn



from each other and keeps fidelity to program—too easy to drift!!!!”). Two responses were coded as “other” because they did not relate to MATCH specifically.

## Do Practitioner Variables Predict MATCH Use and Perceived Effectiveness and Difficulty?

### Clinical Experience Level

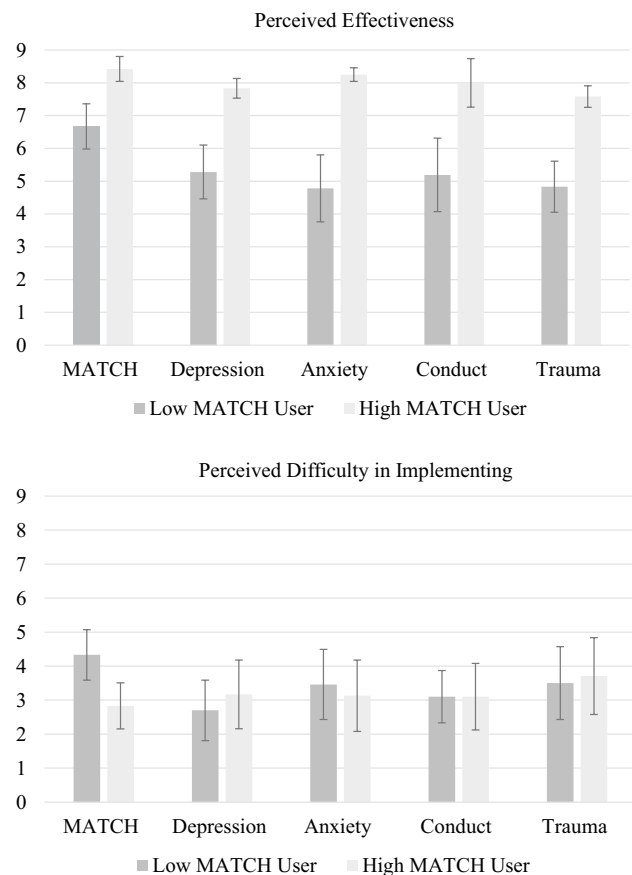
Experience was measured by the number of years since the completion of the most advanced degree, reported at the time practitioners began the original trial. Mean experience was 15.41 years ( $SD=6.06$ ). Practitioner experience was not significantly related to current MATCH use,  $r=.13$ ,  $p=.494$ ,  $BCa\ 95\% \text{ CI} [-.21, .47]$ , or perceived difficulty,  $r=.08$ ,  $p=.674$ ,  $BCa\ 95\% \text{ CI} [-.26, .45]$ . However, practitioner experience was significantly and positively related to perceived effectiveness of MATCH,  $r=.47$ ,  $p=.010$ ,  $BCa\ 95\% \text{ CI} [.25, .68]$ .

### Amount of MATCH Experience in the Original Trial

Amount of experience using MATCH in the original trial—all accompanied by weekly MATCH consultation—predicted practitioners’ sustained use of MATCH,  $r=.43$ ,  $p=.020$ ,  $BCa\ 95\% \text{ CI} [.16, .67]$  and practitioners’ perceived effectiveness of MATCH,  $r=.39$ ,  $p=.038$ ,  $BCa\ 95\% \text{ CI} [.03, .69]$ . MATCH experience in the trial did not predict perceived difficulty in implementing MATCH,  $r=-.13$ ,  $p=.500$ ,  $BCa\ 95\% \text{ CI} [-.54, .30]$ .

### MATCH User Level

MATCH use was positively related to perceived effectiveness,  $r=.49$ ,  $p=.007$ ,  $BCa\ 95\% \text{ CI} [.17, .72]$ , but was not significantly associated with perceived difficulty,  $r=-.26$ ,  $p=.178$ ,  $95\% \text{ CI} [-.59, .13]$ . Exploratory analyses examined differences between high users of MATCH—the 12 practitioners who reported using MATCH with more than 50% of their young clients—and low users—the 12 who reported using MATCH with less than 50%. Five practitioners reported using MATCH with exactly 50% of their youth caseload, and these were excluded from this analysis. A one-way ANOVA tested whether high and low users differed in perceived effectiveness and perceived difficulty in implementing MATCH. Results indicated that high users rated MATCH overall as significantly more effective than low users,  $F(1,22)=4.96$ ,  $p=.037$ ,  $d=.91$ . High users also rated the Anxiety ( $d=1.36$ ), Depression ( $d=1.20$ ), and Conduct protocols ( $d=1.35$ ) as more effective than low MATCH users; the pattern was similar for the Trauma protocol but did not reach significance,  $F(1,22)=4.22$ ,  $p=.052$ ,  $d=.84$ .



**Fig. 2** Top panel: high MATCH users rated MATCH overall as significantly more effective than did low MATCH users. High users also rated the anxiety, depression, and conduct protocols as significantly more effective than did low users. Bottom panel: no significant differences between low and high MATCH users in their ratings of difficulty

There were no significant differences between low and high MATCH users in their ratings of difficulty (See Fig. 2).

## Discussion

We examined continued use of, and attitudes toward, the transdiagnostic *Modular Approach to Therapy for Children* (MATCH; Chorpita and Weisz 2009) among practitioners who had participated, years earlier, in a MATCH trial (Weisz et al. 2018). Three primary findings emerged from the current study. First, practitioners report that they are continuing to use the MATCH program and protocols with approximately half of their cases (range from 39 to 58% depending on the protocol). However, continued use of specific modules varied and did not always map on to what CBT experts would consider active ingredients for specific presenting problems (e.g., exposure for anxiety, cognitive restructuring for depression). Second, practitioner ratings

of perceived effectiveness and difficulty in implementing MATCH suggest that practitioners find MATCH to be effective for a range of presenting issues and relatively easy to implement. These findings are notable because they address the potential concern that MATCH may be more difficult to implement than standard manual treatments because it includes so many different treatment components designed to target such a broad range of problems. In fact, in comparison to previous research on the sustained use of standard treatments (Chu et al. 2015), practitioners may find MATCH more effective and easier to implement than some standard treatment manuals. Third, practitioners provided useful information about facilitators and potential barriers to MATCH use. This direct feedback from practitioners may help clarify what challenges practitioners are facing during implementation and suggest strategies for addressing those challenges.

Practitioners reported using MATCH with 55% of their caseload, and use of the various MATCH modules ranged from 39 to 70%. In some cases, frequency of module use was relatively consistent with evidence on efficacy, but in other cases, mismatches raised significant implementation issues. In perhaps the clearest example of the latter, the “Practicing” (i.e., exposure) module was the least-often used of all the Anxiety modules. This is consistent with previous findings suggesting low levels of practitioner use of exposures in everyday practice (Neudeck and Einsle 2012), but it is concerning because exposure is regarded by many experts as the key component of CBT for anxiety (Nakamura et al. 2009; Peris et al. 2015). At first blush, our finding might be seen to reflect a downside of the flexibility of transdiagnostic treatment: practitioners who can select which modules to use may avoid modules that make them uncomfortable (e.g., exposure), select skills that are easier to deliver, or otherwise omit or downplay skills that more structured manuals might simply require practitioner to use. That said, we should note that Chu et al. (2015) also found exposure to be the least often-used component of Coping Cat, a structured treatment protocol for anxiety, within which exposure is quite central. What this suggests is that for transdiagnostic, modular treatments, and perhaps also for more focused treatments, it may be helpful to use research like the present study and that of Chu et al. (2015) to identify components that are less likely to be implemented by practitioners on their own and put special emphasis on those components in training and consultation.

Practitioners consistently rated MATCH and MATCH modules as at least moderately effective. In addition, none of the modules was rated as particularly difficult to implement; that is, all ratings fell below the “moderately difficult” cutoff. We compared these ratings to practitioner ratings found for Coping Cat and PASCET in Chu et al. (2015) and found that MATCH was rated as more effective and less difficult

to implement than both of these more focused treatments. These results may help mitigate the concern that transdiagnostic, modular treatment adds complexity that undermines practitioner learning, implementation, or sustainability. We found that level of clinical experience was positively related to MATCH use and perceived effectiveness (but not perceived difficulty in implementing). Relatedly, perceived MATCH effectiveness was associated with MATCH use. Consistent with previous research (Cook et al. 2009), these findings suggest that effectiveness is one important factor practitioners consider in their selection of treatment programs and components. That may suggest, in turn, that training in ESTs that emphasizes the strength of evidence on treatment benefit might thereby enhance sustainability of the practices being taught. It should be noted, however, that we did not assess the relation between practitioners’ perceived effectiveness of MATCH modules and the empirical base supporting the various modules’ effectiveness. Another notable finding is that the amount of experience delivering MATCH in the trial, with weekly MATCH consultation provided throughout, predicted both perceived effectiveness and sustained use of MATCH years later. This finding suggests that the extent to which practitioners are initially given hands-on experience and expert support for skill building may be significantly linked to their perceptions of the treatment’s effectiveness and their likelihood of sustained use years later. Though not measured in this study, contextual or setting characteristic may also account for uptake and sustainability of ESTs, including MATCH (Marchette et al. 2019). In particular, organizational culture and climate are likely to influence practitioner attitudes, and in turn, the adoption of ESTs (Aarons and Sawitzky 2006).

Our study has certain limitations that suggest possible directions for future research. The sample size may have limited our ability to detect small effects; a larger sample in future research would increase sensitivity. That said, our sample of 29 practitioners falls within the range of other such effectiveness follow-up studies; for example, Chu et al. (2015), referenced earlier, was based on a sample of 11 practitioners reporting on one protocol (Coping Cat), 12 on another (PASCET). Moreover, that fact that we were able to enroll 100% of the practitioners who were eligible and whom we were able to contact suggests that representativeness may have been acceptable. Responses to open-ended questions about strengths and weaknesses of MATCH were relatively brief. Administering the questions in an interview format might have allowed for more discussion and therefore a more nuanced understanding of implementation barriers and strategies for addressing them. However, trade-offs would need to be considered, because an interview procedure might have introduced interviewer effects, complicating interpretation of findings. We did not ask practitioners about which protocols and modules they had received consultation in during

the prior trial, or about their clinical decision making during the implementation of MATCH. In future research, it would be useful to examine how practitioners choose and implement sequences of modules, and this might be usefully examined in relation to the combination of modules and protocols in which each practitioner had experience and consultation during the effectiveness trial. In a similar vein, it would also be worthwhile to ask practitioners to reflect on their implementation of MATCH versus more focused and single-disorder treatments with youths who have significant comorbidity and with youths treated for a single problem or disorder. Finally, our findings rest on self-reports by the practitioners, and we have no data that would provide objective verification of their reports. Developing methods for such verification could be a useful objective for future research.

Our study also has certain strengths. One is its real-world assessment of the extent of, and factors related to, continued use of an empirically supported transdiagnostic and modular treatment by practitioners in everyday youth mental health care. To our knowledge, this is the first ever quantitative and qualitative examination of continued use of a transdiagnostic youth treatment program. Another strength is the substantial time period spanned by this survey, providing years of opportunity for practices to fall into disuse. The extent to which the treatment is still regarded as effective and implementable, and still being used, years after training and the end of researcher support suggests considerable potential for sustainability. The ideas suggested by practitioners in our survey may suggest strategies for magnifying that potential.

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## Compliance with Ethical Standards

**Conflict of interest** Author JRW receives royalties from sales of the MATCH-ADTC treatment manual. Authors KT and LKM declare that they have no conflict of interest.

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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