

CE Corner

Behavioral Treatments for Tourette's Disorder and Tics

BY STEPHANIE PAPPAS

CHRONIC TIC DISORDERS are marked by repetitive, uncontrolled movements or vocalizations that can range from mild to disruptive and are sometimes painful. These tics are neurobiological in origin, but the first-line treatment for tics and Tourette's disorder (TD)—a condition marked by both vocal and motor tics—is behavioral.

Comprehensive Behavioral Intervention for Tics (CBIT), a program designed and tested by psychologists and psychiatrists, has been recommended by the American Academy of Neurology as the first-line treatment for TD and other chronic tic disorders since 2019. Randomized controlled trials suggest that behavioral therapy is equally as effective as medication for reducing tic severity, without the potential side effects of medication (Piacentini, J., et al., *Journal of the American Medical Association*, Vol. 303, No. 19, 2010).

"You have to remember that one of the biggest things that tic disorders take away from people who are affected is a sense of predictability and control over their own actions," said Douglas Woods, PhD, a clinical psychologist now at Loyola University Chicago and a CBIT pioneer. "CBIT teaches patients that tics can be effectively managed, and by learning that, patients learn they are more in control over what they do. That can have a very powerful impact on how a person with tics approaches the world."

Access and efficacy remain an issue, however. Experts say that not enough kids and adults with tics have access to CBIT because of a lack of skilled providers. Experts are also looking for improvements, as the intervention is effective only about half the time for kids and less than that for

adults. One persistent question is how to help support the 85% of people with tics who have a comorbid psychiatric disorder such as anxiety and obsessive-compulsive disorder.

Epidemiological studies suggest that about 1% of children and 0.01% of adults experience chronic tic disorders (Yilmaz, A. Y., & Jankovic, J., *Brain Sciences*, Vol. 15, No. 5, 2025). For

that reason, psychologists are wise to be familiar with tic disorders and their treatments. They might also find that they can help patients through referrals to a CBIT provider, by providing psychoeducation on these conditions, or even by becoming trained to provide CBIT themselves.

"We see it in our offices, and we need to know how to adequately address it, we need to know how to talk about it with compassion," said Suzanne Mouton-Odum, PhD, a clinical psychologist at the Baylor College of Medicine in Houston who treats tic disorders. "[Otherwise] we're going to miss the opportunity to help a significant number of people."

Tic basics

Tics can come in the form of uncontrolled motor movements or as vocal utterances. People with only vocal tics or only motor tics for more than 1 year

are said to have persistent or chronic tic disorders.

Although TD is sometimes thought to be the "worst case" of tic disorders, this is a myth. A TD diagnosis simply means a person experiences both motor and vocal tics, which can be anywhere on the spectrum from mild to severe. Tics are most common in children, with an estimated 20% of kids experiencing transient tics that clear up on their own (Black, K. J., et al., *Current Developmental Disorders Reports*, Vol. 8, 2021). Even chronic tic disorders improve

CE CREDITS: 1

Learning objectives

After reading this article, CE candidates will be able to:

- 1 Define tics and describe the typical onset and trajectory of tic disorders.
- 2 Explain the procedure for CBIT, the first-line intervention for tics and Tourette's disorder.
- 3 Discuss the broader environmental context of tics and the importance of considering comorbidities in diagnosis.

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KEY POINTS

1

Tics are uncontrolled repetitive movements that begin in childhood and typically lessen or resolve by late adolescence.

2

CBIT works for about half of children and less than half of adults, so current research aims to improve the treatment and elucidate which mechanisms are most important to see a reduction in tic severity and impairment.

with age. A meta-analysis found that 0.77% of kids had TD, which dropped to 0.05% in adulthood (Knight, T., et al., *Pediatric Neurology*, Vol. 47, No. 2, 2012). Although the reasons that tics improve with age are not entirely clear, experts suspect that brain maturation plays a major role.

The specific tic can determine how impactful these disorders are. Some people may have subtle tics that do not interfere with their daily lives. Others may experience tics that cause muscle pain or social stigma. The most stigmatizing tics tend to define the disease in the public imagination, though they are not the most common: The stereotypical TD coprolalia, or inappropriate utterances of obscenities or slurs, occurs in only 10% to 15% of people with TD.

“There are a lot of myths and misconceptions when it comes to tics,” said Joseph McGuire, PhD, a clinical psychologist at Johns Hopkins School of Medicine who specializes in TD. Beyond the stigma, parents often fear their children’s tics are signs of a dangerous neurological condition, such as a brain tumor. Or they may not

realize that most tics improve with age. Sometimes one of the most impactful statements for a family, McGuire said, simply is: “You’re not alone.”

Tics in children

Transient childhood tics are common, with about 15% to 20% of kids experiencing temporary tics that lessen on their own, said John Piacentini, PhD, a clinical psychologist at the University of California, Los Angeles, and one of the pioneers of CBIT.

Tics that last less than a year fall under the diagnosis “provisional tic disorder.” The trajectory of provisional tic disorder is somewhat controversial. Prospective research led by Washington University in St. Louis psychiatrist Kevin Black, MD, suggests that these transitory tics may not be as transitory as they sometimes seem (*Comprehensive Psychiatry*, Vol. 134, 2024). In that study, 98% of 89 kids recruited to a study of children with new tics were still experiencing them a year later. The tics had become less bothersome and clinically relevant, but the finding suggests that previous research may have missed or not counted tics that had diminished in severity but were still present.

Regardless, most kids who experience tics do outgrow them or inhibit them to the point where they are not bothersome without treatment. Thus, the first step for clinicians seeing a child with new tics is often psychoeducation, Piacentini said. Families need to understand that tics typically wane over time and they should be taught ways to avoid accidentally reinforcing tic behavior.

“I’ve seen parents have little kids with tics, and every time the kid tics, the parent will look at the child and try not to cry,” Piacentini said. “The kids see this. Or every time the kid comes

home from school with tics, and the loving parent comes up and [rubs their back] and says, ‘You don’t need to do your homework.’ All of that serves to reinforce the tics.”

Family education may be enough unless the tics are particularly long-lasting or disruptive to the child’s daily life, Piacentini said.

Often, reassuring parents and kids that tics are not a symptom of a dangerous medical condition and that most kids with tics will see improvement as they get older gives families hope, said Christine Conelea, PhD, a clinical psychologist at the University of Minnesota who researches tic disorders.

“We see this in our data,” Conelea said. “Just having education about it makes people feel a lot better.”

A behavioral treatment for tics

For people for whom tics do not ease on their own, there are treatment options. The first is typically CBIT. Medication options may be added after CBIT if disruptive tics remain, Piacentini said. However, medication tends to be most effective on simple tics, said John Walkup, MD, a psychiatrist at Lurie Children’s Hospital and the Northwestern University Feinberg School of Medicine in Chicago who specializes in TD. More complex tics respond better to behavioral treatment because there are more opportunities to disrupt the tic.

CBIT intervention takes place in about eight sessions over 10 weeks and consists of three components. First, the patient learns to be more aware of tics and the premonitory urge, a feeling that sometimes rises before the tic. Second, the CBIT practitioner helps the patient develop a competing response, which is a movement or action that makes it difficult or



Sometimes people will imagine the urge to tic as an ocean wave and let it crest and collapse. Others will anchor themselves to their breath and ride out the urge.

impossible to do the tic. For example, if the tic is jerking one's head back, the competing urge might be to tuck the chin, straighten the neck and hold that position, said Mouton-Odum. The third step is functional intervention, which involves figuring out which situations tend to exacerbate or reinforce tics and changing the circumstances so as not to encourage the tics.

A systemic review of the evidence conducted during the development of practice guidelines for treating chronic tic disorders found that medications and CBIT are similarly

effective in reducing tics (*Neurology*, Vol. 92, No. 19, 2019). A randomized clinical trial led by Piacentini and Woods found that 53% of kids age 17 or younger who received CBIT saw a clinically significant improvement in tics as measured by the Yale Global Tic Severity Scale (*Journal of the American Medical Association*, Vol. 303, No. 19, 2010). A follow-up trial in adults found that 38% saw improvements after CBIT compared with psychoeducation and supportive counseling (*JAMA Psychiatry*, Vol. 69, No. 8, 2012). An 11-year follow-up

study found that 67% of youth who responded to CBIT in the original trial achieved remission at follow-up, with 40% of people across the entire clinical trial sample experiencing partial remission (*Journal of the American Academy of Child and Adolescent Psychiatry*, Vol. 61, No. 6, 2022). The same follow-up found that contrary to fears that suppressing or attending to tics would worsen them, most participants did not experience tic worsening, tic substitution, or life interference from tic management (*Behavior Modification*, Vol. 48, No. 4, 2024).

"Twenty years ago, individuals with Tourette's syndrome and other tic disorders had very few treatment alternatives, and those that were available often had significant unwanted side effects," Woods said. "With the development, testing, and dissemination of CBIT, the field of psychology has made an important contribution toward improving the lives of those with these conditions."

Nevertheless, many people report they cannot access the treatment because trained CBIT practitioners are in short supply, said Michael Himle, PhD, a clinical psychologist at the University of Utah. Himle and his colleagues have been working on closing the research-practice gap. He has partnered with Woods, Mouton-Odum, and the Tourette Association of America to launch an online training program for professionals, CBIT Trainer, and is currently collecting data for a noninferiority trial to ensure that the online program is as effective as in-person training. The program, available at cbitrainer.com, takes about 10 hours to complete and costs \$699.

Himle, Woods, and Mouton-Odum have also launched TicHelper, an online self-help version of CBIT that uses video sessions to walk kids and their families through the intervention.

(The researchers receive royalties from TicHelper fees.) They are now analyzing data from the first 2,000 users of TicHelper to assess how well it works.

Strengthening behavioral treatment

Because about half of kids and most adults who try CBIT do not respond or only partially respond to it, there is a lot of interest in how to improve behavioral tic treatment. One alternative is exposure and response prevention (ERP), which involves learning to tolerate the urge to tic, a feeling that can be quite uncomfortable. CBIT often works tic by tic, picking a competing response appropriate to each, but ERP works on all tics at once. In a randomized controlled trial comparing ERP and habit reversal training with medication and psychoeducation, ERP showed a similar reduction in tic severity as medication, while psychoeducation made no difference (Rizzo, R., et al., *Frontiers in Psychiatry*, Vol. 9, 2018). ERP response rates are also similar to CBIT. However, sessions are 60 to 90 minutes, which is a barrier for some patients.

In a similar attempt to build tolerance for the frustrating feeling of wanting to tic, McGuire and Hannah Reese, PhD, a psychologist at Bowdoin College in Brunswick, Maine, are looking at the effectiveness of a mindfulness intervention. Their method, Mindfulness-Based Intervention for Tics (MBIT), developed in collaboration with Alan Brown, MA, a mindfulness teacher who has TD, overlaps with CBIT, Reese said. MBIT focuses on using traditional mindfulness practices to increase awareness of premonitory urges and tics, decrease stress, enhance distress tolerance, and boost self-compassion.

“We initially just start by teaching

people how to pause and slow down the process,” Reese said. “Can they observe that urge, notice what it feels like in their body, notice what thoughts and emotions might be arising at the same time? And then, once they have done that, can they begin exploring whether they might be able to respond differently to that urge to tic?”

Sometimes, people will imagine the urge as an ocean wave and let it crest and collapse, Reese said. Other people will anchor themselves to their breath and ride out the urge. “Different

approaches seem to work for different people,” she said.

A pilot randomized controlled trial of 28 people comparing eight sessions of MBIT to eight sessions of psychoeducation, relaxation, and supportive therapy showed significantly greater improvements with MBIT, with 69% of participants responding to MBIT compared with only 13% who received the supportive therapy (*Movement Disorders*, Vol. 39, No. 9, 2024).

McGuire and Reese are now halfway through a 5-year clinical trial to further test the intervention and

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to investigate the mechanisms that lead to the most improvement. This might be attentional control; awareness of premonitory urges; general stress relief, which can improve tics indirectly; or self-compassion. “If we find out what that is, we can also think about other types of treatments that could also help provide that same relief,” McGuire said.

In similar research, Conelea, who runs the University of Minnesota’s Minnesota Tic and Compulsivity Lab (MnTic), is working on a trial of CBIT aimed at understanding why it works, using fMRI and EEG to see how brain networks change over the course of treatment. In another ongoing MnTic study, researchers are combining behavioral treatment with noninvasive transcranial magnetic stimulation (TMS), which uses external magnetic fields to stimulate brain activity changes. The lab was recently designated as a Tourette Association of America Center of Excellence, meaning it provides the highest level of treatment and conducts groundbreaking research on the condition.

Neurologically speaking, Conelea said, people with chronic tics have an overactive, overconnected corticostriatal sensorimotor circuit that links the cortex to deep motor structures in the brain. They also have underactive, underconnected inhibitory circuits and overactive limbic circuits. Collectively, this circuitry makes movements more likely, more difficult to inhibit, and more impacted by emotional states. Behavioral interventions such as CBIT likely help strengthen the prefrontal inhibitory circuits, Conelea said. She and her colleagues are targeting the corticostriatal sensorimotor connection with TMS, hoping that the stimulation encourages plasticity in that system. Initial results

in the first phase of the research suggest that TMS helps reduce the overconnection in sensorimotor circuitry, Conelea said (*Frontiers in Human Neuroscience*, Vol. 19, 2025). The researchers are now recruiting for a randomized controlled trial of CBIT with or without active TMS, which they hope will link brain changes to changes in tic symptoms.

Understanding comorbidities and lifestyle

One major factor in tic disorders is that they often appear alongside comorbidities such as obsessive-compulsive disorder or attention-deficit/hyperactivity disorder, said Walkup. It is important not to jump straight to behavioral treatment for tics without evaluating for comorbidities that may need to be treated as well—or even prioritized for treatment if their effects are more onerous than the tics, Walkup said. “Tics wax and wane,” he said. “They increase with excitement and stress, and they improve with calm, focused activities.”

Anxiety disorders, separation anxiety, and generalized worry can all worsen tics, Walkup said. Depression, which typically presents later in adolescence, may also worsen tics for some teenagers who previously had their tics under control. Life stressors also play a big role, he said, so while most people see their tics decline as they pass into late adolescence or young adulthood, some may see their tics worsen as they get to college or take their first high-pressure job.

“When I see a 22-year-old, my goal there is not just to treat the tic, but to figure out why the tic is bouncing outside of the normative developmental pathway,” Walkup said.

Helping patients get “in the zone,” as Walkup puts it, can create an environment where tics are less likely.

Because tics decline during focused, functional activity, Walkup helps kids and families set up routines and responsibilities that get kids in that mindset.

It is essential for psychologists to “teach the lifestyle component,” Walkup said. “Exercise is really good for tics, getting a good night’s sleep is really good for tics, developing your daily routine and putting some sophistication into it so you are in control of the things you can control is really good for tics.” ■

FURTHER READING

Nix your tics! Eliminate unwanted tic symptoms: A how-to guide for young people (2nd ed.)

B. Duncan McKinlay
Life’s a Twitch!
Publishing, 2022

Description, implementation, and efficacy of the Comprehensive Behavioral Intervention for Tics as first-line treatment for Tourette and other tic disorders

Kohler, K., et al.
Journal of Child and Adolescent Psychopharmacology, 2025

Course of tic disorders over the lifespan

Black, K.J., et al.
Current Developmental Disorders Reports, 2021

Enhancing Learning through Commitment to Change

Greg J. Neimeyer, Ph.D.

The rapid proliferation of new knowledge in psychology has placed renewed demands on professional practitioners to keep pace with ongoing advances. Overall, knowledge may remain current in professional psychology for as little as about 6-7 years, with more rapidly diminishing durability in key areas of practice, such as psychopharmacology, child health, forensics, substance use, or neuropsychology, among others (Neimeyer, Taylor & Rozensky, 2014). This means that, in the absence of a commitment to ongoing professional development, many practitioners may begin to experience knowledge obsolescence even while they are still in the early stages of their career (Neimeyer, Taylor & Rozensky, 2012).

BEST PRACTICES

In response, the field of professional psychology, together with other allied health professions, have redoubled their efforts to formulate sets of “best practices” that can enhance learning and the translation of that learning into practice (Institute on Medicine, 2010; Taylor and Neimeyer, 2017). The collective objective of these best practices is to enhance the comprehension, retention, and application of new knowledge in support of ongoing professional competence. Some of these practices focus on the value of adapting the learning strategies to individuals’ unique learning styles, presenting information multiple times utilizing different media, and providing opportunities for individuals’ input, application and behavioral rehearsal of the material, in addition to receiving peer, or instructor, review and feedback (Neimeyer & Taylor, 2014; Taylor and Neimeyer, 2017).

In addition to identifying current best practices, the allied health fields have long dedicated themselves to the development and evaluation of novel mechanisms for enhancing new learning, as well, drawing from a wide range of literatures with common objectives. Research within the science-of-learning, adult education, and performance enhancement literatures have been particularly productive in identifying and assessing novel methods of learning and facilitating the translation of that learning into

practice. *Benchmarking* and *self-assessment* are two examples of educational practices that have arisen as mechanisms designed to facilitate quality assurance and ongoing professional development (Neimeyer and Taylor, 2014).

Benchmarking and Self-Assessment. *Benchmarking* refers to the express comparison of one’s own work with the work of other professionals in the field. Benchmarking can be understood as the systematic process of evaluating work based on best practices and using evidence-based practice (EBP) to improve performance. In a typical benchmarking procedure, a psychologist might be given videotapes of peers who are conducting a procedure, such as a substance use screening. The videos are pre-determined to depict varying levels of quality. They might range from depicting relatively poor, informal questioning through more thorough, systematic, structured interviews. The psychologist is then asked to evaluate his or her screenings in relation to those he or she has seen, and given information about key components that are present, and absent, in each of the video “benchmarks.” Benchmarking provides an anchor against which psychologists can compare themselves, increasing the accuracy of their self-assessment and incorporating elements of the “higher” benchmarks into their own practice.

Research has demonstrated the effectiveness of benchmarking in relation to improving the accuracy of self-assessment, which is a critical pre-condition for evaluating current clinical skills and needs. Lane and Gottlieb (2004), for example, found that when medical residents viewed videotapes of their performance, their self-assessment accuracy increased significantly. And their accuracy increased still more when they watched the videos with a faculty member. Similarly, Martin et al., (1998) found that comparing one's own performance to the performance of others increased the accuracy of self-assessment. In their study, these researchers invited family practice residents to conduct mock interviews with a mother suspected of physically abusing her child. The residents were then asked to rate their performance. Next, residents watched their videotaped interview, in addition to watching four benchmark interviews depicting varying levels of competence. After watching the benchmark interviews, the relationship between the residents' self-ratings and the independent ratings of the supervisor was significantly stronger.

Self-assessment can take many different forms. All forms share in common express efforts to reflect upon, and evaluate, one's own current skills and/or future professional needs and interests. The Quality Assurance Program in Ontario, Canada, is one example of a well-articulated program of self-assessment (Morris, 2011). The Quality Assurance Program requires that each psychologist undertakes a self-review every other year, though the completion of a stipulated Self-Assessment Guide and a Continuing Professional Development Plan. Through a series of questions, psychologists critically evaluate their strengths, growth areas, and gaps in their learning. After conducting the self-assessment, they develop their own personal plan to remediate areas of identified weakness and to enhance their overall professional competence, sharing their plans with a colleague who reviews it and provides

input. The Continuing Professional Development Plan is designed to 1) promote continuing competence and quality improvement, 2) remedy gaps in knowledge and skills identified in the self-assessments, 3) address changes in practice environments and workplace needs, and 4) incorporate evolving standards of practice and advances in technology. These Continuing Professional Development Plans are subject to peer review by members of the College of Psychology of Ontario according to stipulated regulatory requirements.

Both benchmarking and self-assessment reflect the considerable effort that can accompany efforts designed to promote professional growth and development. Facilitating new learning, and the translation of that knowledge or skill into practice can be an effortful process, requiring reflection, formulation and deliberate application. Transitioning new learning to practice often requires an individual to reflect on how new knowledge or skills may apply to their own experience and to formulate ways in which the new material can be modified, adapted, or utilized within their own professional contexts or workplace environments. If the value of this effort is justified by the anticipated improvement or outcomes that may follow from it, then individuals are more prone to commit themselves to changes in what they do, or how they go about doing it.

Although some mechanisms for triggering change are designed to be intensive and may require considerable time, others are designed as brief reflective exercises that can occur immediately after, or even during, a learning event. A longstanding literature on the concept of a Commitment to Change illustrates the value of utilizing this simple technique in the service of generating greater learning and the translation of that learning into actual practice (Mazmanian & Mazmanian, 1999).

COMMITMENTS TO CHANGE (CTCS)

CTCs have been the subject of attention for the last few decades, but only recently have they been imported into the fields of allied health, or more recently still within psychology. CTCs are generally generated following an educational event such as attending a lecture, participating in a workshop, or reading an article (Wakefield, 2004). To complete a CTC, participants are asked to identify a set of possible changes they would like to make in their own practice based on the educational event. They are asked to formulate these changes in specific, behavioral form, which requires them to reflect on the relevance and applicability of the new information, and to adapt its application to their own interests and experience. They are then asked to indicate a level of commitment to each of the changes they have formulated, utilizing a rating scale that reflects their commitment to change, from low (1) to high (5). In the Commitment to Change procedure, participants are often reminded of their commitments 1-2 months

later, and asked to indicate if they actually enacted, or attempted to enact, each of their stipulated CTCs and to describe their experience or outcomes.

The effectiveness of the CTC procedure seems to be related to its three steps. The timing of the administration, immediately after the learning event, provides the participant an opportunity to reflect on the most salient elements of the material and to formulate it in terms that are most relevant to their own experience, interests, or needs. Rating the level of commitment provides a concrete mechanism for reflecting on the importance or value of the change, and anchors the individual in a level of expectation about completing it. And the subsequent follow-up provides a sense of accountability and the opportunity to reflect on the translation of the material into practice, or the barriers that may have impeded or prevented that translation.

THE BACKGROUND ON CTCs

CTCs have been the subject of attention in relation to the organizational change literature for several decades, as a tool for facilitating critical shifts in organizational structure, processes or style. Within the allied health literatures, medicine was among the first to explore the utility of CTCs as a mechanism for facilitating the translation of new knowledge into actual clinical practice. Within this literature, the actual performance of CTCs varies widely, from 47-87% (Wakefield, 2004), based on a number of identified factors. These factors include the extent to which individuals feel as if the CTCs are relatively easy to do, and the extent to which they feel as though they have personal control over completing them (Fidler et al., 1999, Lockyer et al., 2001). The greater the environmental or institutional constraints, the less likely individuals are to be able to follow through on their commitments and accomplish the behavioral changes they have formulated (Parochka and Paprockas, 2001). A number of studies have demonstrated that the CTC procedure can trigger actual changes in practice-related behavior, including the specific prescriptions that physicians write following educational programs (Wakefield et al., 2003), and the specific interventions utilized by occupational therapists over the course of their work with their clients (Lowe, Rappolt, Jaglal, & Macdonald, 2007).

The precise mechanisms involved in triggering this translation into practice are not fully known, but recent work has begun to address them. Herbert, Lowe and Rappolt (cited in Lowe, Hebert & Rappolt, 2009), for example, wondered whether reflection alone at the end of a new learning experience was sufficient to promote practice change, or whether the express formulation of a commitment of change was an essential element. Reflection has long been a key component of ongoing professional development programs, as reflected in the Mann et al., (2009) systematic review of reflection within continuing medication education courses. In their study, Hebert et al. (2009) asked half of their participants to complete CTCs while the other half

were prompted to reflect on the workshop using the Critical Incident Questionnaire (CIQ). Two months following the workshop, there was a modest difference favoring the CTC group over the reflection-only group. The percentage of those who demonstrated significant change was significant in both groups, but it favored those who had formulated specific commitments to change. Overall, 67% of the individuals who used CTCs made changes in practice, compared to 50% of those in the CIQ group who reported doing likewise.

A recent study of the relationship between reflection and behavior change in continuing medical education provides further evidence in this regard (Ratelle, et al., 2017). In a cohort study of attendees at a national hospital continuing medical education course, 223 participants provided reflection scores for each presentation they attended, and formulated commitment-to-change statements at the conclusion of each course. Reflection scores consisted of ratings, on a 5-point scale, about the extent to which the presentation had prompted reflection, re-consideration, deliberation or critical re-evaluation of their practices. A 3-month post-course survey was conducted to determine whether planned CTCs were successfully implemented, and whether they were related to higher levels of reflection.

Overall, participants indicated that 65.5% of the CTC statements were implemented. Reflection scores correlated significantly with the number of planned CTC statements ($r=.65$, $p<.01$), suggesting the potential role of the CTC procedure in enhancing reflection and, potentially, translation into actual practice. In addition, higher reflection scores were related to the greater availability of opportunities for audience response and the use of clinical case illustrations. The researchers concluded that, “we found that reflection strongly correlates with CTC” and that “continuing education “curricula that stimulate reflections may actually promote positive patient care behaviors” (Ratelle et al., 2017, p. 166).

SUMMARY

Educators or learners who are interested in enhancing learning, and the translation of that learning into practice, may increase the retention and translation of material by incorporating CTCs into their programs. Although the overall effectiveness of CTCs as a tool to enhance the integration of new learning into practice is still under study, the current evidence is promising. The incorporation of simple reflective questions into a learning experience may itself be useful, as when the psychologist asks, “How can I use this new knowledge?”, “How does this apply to my practice and to what I do?”, or “What might I do differently based on what I have learned today?” Although simple reflection itself appears to facilitate both learning and the translation of that learning into practice, the express formulation of potential changes and a commitment to those changes may add further value (Lowe et al., 2009). Overall,

the formulation of CTCs represents a relatively simple mechanism for promoting reflection, anchoring expectations regarding adoption, and leveraging new learning into novel practice behaviors. Simple extensions to the CTC procedure that may provide additional benefit include conducting surveys of post-course behaviors to assess compliance with the CTCs, encouraging reports to colleagues or other peers regarding CTCs in order to build in additional elements of accountability, or establishing timelines for the completion of CTCs. With continued utilization and examination, Commitment-to-Change procedures may join the ranks of other processes, procedures and techniques that jointly constitute what has increasingly come to be recognized as the set of “Best Practices” in the field of ongoing professional education and continuing professional competence.

ABOUT THE AUTHOR

Greg J. Neimeyer, Ph.D. is professor emeritus at the University of Florida in Gainesville, Florida, where he has served as the Director of Training and Graduate Coordinator, while practicing in the Family Practice Medical Residency Training Program in the Department of Community Health and Family Medicine. Past Chair of the Executive Board in the Council of Counseling Psychology Training Programs in the United States, Dr. Neimeyer's research has focused on aspects of ongoing professional development and lifelong learning. A recipient of the American Psychological Association's Award for Outstanding Research in Career and Personality Research, Dr. Neimeyer has also been inducted into the Academy of Distinguished Teaching Scholars. He currently serves as the Director of the Office of Continuing Education and the Center for Learning and Career Development at the American Psychological Association in Washington, D.C.

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