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Online Versus Face-To-Face Training of Critical Time Intervention: A Matching Cluster Randomized Trial

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Abstract

This study examined the effectiveness of online education to providers who serve people experiencing homelessness, comparing online and face-to-face training of Critical Time Intervention (CTI), an evidence-based case management model. The authors recruited 184 staff from 19 homeless service agencies to participate in one of two training conditions: (a) *Online Training + Community of Practice* or (b) *Face-to-Face Training + Telephone Consultation*. Each group received 24 hours of instruction and support. Through baseline, follow-up, and nine-month post-training surveys, the authors examined satisfaction, knowledge gains, knowledge retention, and readiness to implement CTI. While satisfaction rates were higher among participants in the face-to-face group, the two training conditions produced comparable pre/post knowledge gains. Furthermore, both groups showed increased knowledge retention scores at nine-month follow up, with the online group scoring higher than the face-to-face group.

INTRODUCTION

Over the past three decades, much time, energy, and money has been invested in developing evidence-based practices (EBPs) in health and behavioral health, yet uptake of these interventions has been haphazard at best (Harris et al. 2012). Diffusion of innovations in health and social service settings often happens passively, without targeted activities or adequate resources. The result is a persistent gap between research and practice (Institute of Medicine Committee on Quality of Health Care in America [IOM] 2001). Most EBPs never move into widespread use, and for the few that do, research suggests that the average time between initial evidence of efficacy and broad take-up is 17 years (Balas and Boren 2000). This gap is especially pronounced in underresourced systems serving difficult-to-reach populations, including those experiencing mental illness, addiction, and homelessness (IOM 2006; O'Connell, Kaspro, and Rosenheck 2010; Rosenheck and Mares 2007). Even when information about EBPs is available, many programs face difficulties implementing them, particularly in homeless service settings (Homelessness Resource Center 2008; Olivet, Paquette et al. 2010). Without strengthening the knowledge and skills of the workforce, it is unlikely that we will succeed in effectively combatting homelessness.

Homeless service providers face unique challenges in their daily work. These include responding to populations with complex needs that cross service systems; working in nontraditional settings; working with few supports and for low pay; burnout and compassion fatigue; and managing negative public attitudes (Mullen and Leginski 2010). Furthermore, the workforce is largely composed of paraprofessionals with little or no formal training (Mullen and Leginski 2010), and most work in settings where demand for services is great, resources are scarce, and training and supervision are limited (Edmond et al. 2006). The training that is available most often consists of one-time, in-person didactic sessions that are insufficient to build skills that lead to practice changes (Joyce and Showers 2002).

Critical Time Intervention

Critical Time Intervention (CTI) is a time-limited strategy that supports transition into housing and bridges the gap in services by initially providing intensive support, then reducing the level of support over time and fostering long-term community linkages (Herman 2014; Herman and Mandiberg 2010; Susser et al. 1997). The nine-month intervention is typically provided by a team that includes a clinical supervisor, a field coordinator, and one or more CTI workers. Over the course of the intervention, the team works to stabilize people in housing and connect them with formal clinical services and informal community supports. The work of the team tapers off through three phases of CTI as responsibility for care shifts to the community (Herman 2014; Herman and Mandiberg 2010; Susser et al. 1997). The model was originally developed to help stabilize individuals with severe mental illness (SMI) following discharge from hospitals, shelters, prisons, and other institutions (Valencia et al. 1997)—transitions when people are especially susceptible to homelessness (Thornicroft 1997). CTI is one of the few EBPs that specifically addresses the needs of people experiencing homelessness. Listed on the Substance Abuse and Mental Health Services Administration's National Registry of Evidence-Based Programs and Practices, CTI was cited as an effective practice by the President's New Freedom Commission on Mental Health (2003).

CTI was first studied in a randomized trial with homeless men following discharge from a large homeless shelter in New York City in the early 1990s. Clients receiving CTI were homeless significantly fewer nights over the follow-up period than were those who received usual case management services (Susser et al. 1997). Housing improvements achieved by individuals randomized to CTI persisted well beyond the duration of the intervention, a finding confirmed through reanalysis of the original study data (Lennon et al. 2005). These positive results were supported by a subsequent randomized trial that also showed significantly less homelessness among the CTI group than in the control group receiving usual care (Herman et al. 2011), as well as greater perceived access to care (Tomita and Herman 2015). Further research has documented CTI's beneficial impact on substance use and psychiatric symptoms, and reduced risk of homelessness following hospital discharge (de Vet et al. 2013; Herman et al. 2000; Herman and Mandiberg 2010; Kaspro and Rosenheck 2007; Prince 2013; Tomita and Herman 2012). CTI has a growing evidence base to support its effectiveness among veterans, women, and families (Dixon et al. 2009; Felix and Samuels 2006; Kaspro and Rosenheck 2007; Manuel et al. 2012; Shinn et al. 2015) and to suggest that it is also cost-effective in reducing homelessness (Jones et al. 2003).

Online learning for homeless service providers

Online training offers a promising avenue for reaching the homeless services workforce by delivering ongoing, interactive, experiential, and flexible learning (Cauble and Thurston 2000; Kozma 1995). However, meta-analyses of studies comparing online and face-to-face training have either found no significant differences in the overall effectiveness of the two models in knowledge acquisition and retention (Zhao et al. 2005) or great variation in outcomes; some applications of distance education perform better than their classroom counterparts, while others perform more poorly (Bernard et al. 2004). Another comparison of web-based instruction to classroom instruction showed web-based instruction to be more effective for gaining declarative knowledge while both methods were equally effective in attaining procedural knowledge (Sitzmann et al. 2006). Recent systematic reviews examining the effectiveness of online learning in nursing and social work education (Du et al. 2013; McCutcheon et al. 2015; Phelan 2015) found that online learning is at least as effective as in-person training in supporting knowledge acquisition and dissemination of knowledge and a meta-analysis of computer technology and student achievement found that the average student in a class that uses technology will perform 12 percentage points higher than a student in a classroom that does not use technology (Tamim et al. 2011).

Communities of Practice (CoP) are increasingly recognized as promising practice in online learning. Pioneered by Lave and Wenger (1991), CoPs have been defined as “group[s] of people who share a concern or a passion for something they do, and who learn how to do it better as they interact regularly” (Wenger-Trayner and Wenger-Trayner 2015, 1). Most publications on CoP are in the fields of medicine (Barnett et al. 2013; Fung-Kee-Fung et al. 2014) and education (Cooper et al. 2014; Tseng and Kuo 2014; El-Hani and Greca 2013), but the model can be applied to any area of expertise. Research points to outcomes such as increased compliance with clinical guidelines (Fung-Kee-Fung et al. 2014) and efficiencies in engineering (Probst and Borzillo 2008), as well as a heightened willingness to share resources and help other member’s work through challenges (Tseng and Kuo 2014).

To date, little or no research has evaluated the effectiveness of online training in the homeless service sector. While EBPs such as Critical Time Intervention exist, more research must be done to understand the potential role of online learning in disseminating such practices across homeless service programs.

Purpose of study

This article reports the findings of a cluster randomized trial comparing online and face-to-face (F2F) training of Critical Time Intervention. This study, the first of its kind in the homeless services field, is part of a larger study that also investigated the impact of training formats on implementation and client outcomes (Olivet et al. 2013). This article focuses on providers’ training preferences and the effect of these two training formats on provider satisfaction, knowledge gains and retention, and readiness to implement the CTI model.

METHODS

Study design

Using a clustered design, we randomly assigned individual service providers to participate in online training or F2F training. Data were collected at the start of the training (i.e., baseline), within two weeks after completion of the training, and at nine months post-training.

Interventions

This study compared two training modalities: (1) Online Training + Community of Practice and (2) Face-to-Face (F2F) Training + Telephone Consultation.

Online training + community of practice—This condition involved an eight-week instructor-led online course that included self-paced presentations, live webcasts with CTI experts, written assignments, small-group discussions with course facilitators and peers, and discussion forums. Total instruction time for the course was 24 hours. The course was organized around four modules: (1) CTI Basics, (2) CTI Skills, (3) Tools to Measure Success, and (4) Implementing CTI in Your Agency. A course website served as the hub for all course activities. The website was developed using Moodle, an open-source course management system that was customized to meet the specific needs of the CTI course, allowing instructors and the study team to monitor students' progress through the course. The course website contained an orientation page with logistical information, a page for each module with course content, and a help desk for technology support. Four self-paced presentations, one for each module of the course, were developed in Adobe Flash and designed for participants to learn key concepts for each section of the course. The presentations included audio and video clips from interviews with CTI practitioners and researchers to illustrate challenges and successes of implementing CTI in real-world settings.

In addition to self-paced asynchronous learning, subjects participated in an online CoP. As part of the CoP in this study, participants (a group of people) attended live instructor-led webcasts and online group discussions (a common passion), which alternated weeks during the eight-week training (over time). Between these sessions, they contributed to an online forum and worked with peers to develop CTI Implementation Plans to share with other participants in the course.

Face-to-face training + telephone consultation—The F2F condition included face-to-face training, followed by telephone consultation—an approach that is widely used for training in homeless service settings. The team worked with CTI experts and trainers to align this curriculum with the content and depth of learning provided in the online condition. This training condition involved 1.5 days of face-to-face training totaling eight hours of instruction that included didactic presentations, role-playing exercises, and case studies. The training covered the same material as the online intervention.

The training was followed by three months of assignments (eight hours) and telephone consultation (eight hours), for a total of 24 hours of learning and support for the intervention. During the follow-up period, providers completed assignments and received

feedback from instructors. They developed CTI Implementation Plans comparable to those developed by participants in the online condition, as well as other assignments designed to reinforce learning and application of CTI. Telephone consultation involved (1) discussions about how to use the information to inform day-to-day operations, (2) case conferencing to problem solve common challenges and support progress on individual cases, (3) group discussion regarding assignments, (4) status updates on the CTI implementation work plan, and (5) problem solving to resolve challenges in implementing the plan.

Study sample

To recruit the sample, the study was advertised on the Homelessness Resource Center website, a federally funded clearinghouse that reaches approximately 12,000 to 15,000 individuals monthly. In addition, we posted information on the criticaltime.org website to invite participation. We conducted telephone screening of 60 agencies that expressed interest in participating. Eligibility criteria included:

- administrative support for implementing CTI within the participants' agency;
- ability to commit at least one CTI team (one supervisor, one field coordinator, and three CTI workers) to participate in online or face-to-face training;
- participation in all aspects of the evaluation; and
- willingness to collect and share administrative client data.

This screening process resulted in 20 eligible agencies that agreed to participate. From within these agencies, we recruited 217 individual providers to participate. Incentives for agencies included free CTI staff training (not limited to those providers in the study) and \$500. Provider incentives included free training and \$25 cash cards for completion of surveys at three data collection points.

Eligible agencies signed a memorandum of understanding (MOU) to enroll in the study. The MOU specified a contact person to work with the research team, and contact information for providers to be trained in CTI as well as key informants to complete interviews. Individual providers from each agency signed separate informed consent forms. The Cambridge Health Alliance Institutional Review Board approved this study.

We used a matching design to randomize the 20 agencies on the following characteristics to ensure equal distribution between the intervention groups: type of agency (public or private); serving single adults or families; serving those with specific issues (e.g., SMI, homelessness, HIV); and transition focus (e.g., emergency shelter to housing, jail/prison to housing, street to housing). Initially, 10 agencies were assigned to the online condition and 10 to the face-to-face condition.

We recruited 20 sites and a total 217 providers. After randomization, one site consisting of 33 providers assigned to the online condition dropped out before the training, leaving 19 agencies. Of these 217 providers, 184 completed the pretraining survey and were enrolled in the study (online $n = 72$; F2F $n = 112$). Post-training response included 130 providers (online $n = 49$; F2F $n = 81$), and the nine-month post-training follow up included 77 providers (online $n = 27$; F2F $n = 50$). Reasons for attrition included staff no longer working

on the CTI team or staff leaving their agencies for unspecified reasons, reflecting typical turnover rates in homeless service programs (Olivet, McGraw, et al. 2010). Throughout the study, agencies hired additional staff to replace the case managers who left the CTI teams, but these staff are not included in this report since they did not participate in the entire training.

Estimates of power and necessary sample size

Estimates of power for ANCOVA were examined with PASS software (Hintze 2014). A sample of 75 subjects ($Ns = 25, 50$) achieves 85% power to detect differences among the means ($ES = .31$) versus the alternative of equal means using an F test with a 0.05 significance level and assuming that the baseline covariate has an R -squared of 0.20. Therefore, the final sample size of 77 is sufficient to reject the null hypotheses of no differences between groups when controlling for pretraining baseline values.

Data sources

Pre-/posttraining surveys—The *Pretraining Survey*, completed either online or on hard copy (for those in the F2F training), gathered participant demographics, examined providers' training preferences (online versus F2F), and assessed knowledge about CTI. The *Posttraining Survey* captured satisfaction and reactions to the training, as well as gains in achieving goals and confidence regarding implementation. Trainees completed the surveys just before the training sessions and immediately after completion.

Knowledge retention surveys—These brief online surveys posed questions about the CTI model to assess providers' retention of the knowledge they had gained during the training. CTI experts developed these surveys, which focused on the core elements of CTI covered in the trainings. The data were initially collected approximately two weeks after the completion of the training and then approximately nine months after the training.

Data analysis

Survey data were analyzed using SPSS (SPSS Inc. 2009). Paired t -tests assessed pre- and posttest gains in knowledge within each training group and levels of knowledge retention. Analyses of Covariance assessed group differences in training satisfaction, knowledge gains and knowledge retention while controlling for baseline scores.

RESULTS

Demographic characteristics

The two groups of providers were comparable on key demographic characteristics; there were no statistically significant differences by gender, age, race, education, or years of experience working with people experiencing homelessness (see Table 1). A majority were female, 30% self-identified as non-White, and average age was 40 years. About 40% of each group had a graduate degree. Half of the participants in each group had worked with people experiencing homelessness for fewer than five years. The participants assigned to the online intervention were less apt to report that they heard of CTI (42% versus 34%) before the

training: 58% of online participants had heard of CTI, compared to 66% of face-to-face participants.

Pre-intervention training preferences—After we randomly assigned the agencies (online or F2F), but before the training, we asked participants in the *Pretraining Survey* how they felt about their training assignment. Most training participants preferred an in-person format to online. Among those assigned to receive CTI training online, 8% said they were happy about it and preferred that format; 49% said they preferred to receive face-to-face training. The remainder reported “no preference.” Among those assigned to receive CTI training in-person, 73% reported they preferred that format; only 1% said they would have preferred to be assigned to the online condition. When we asked specifically about an ideal format to learn something new, only five participants in the online group and two in the F2F group named “online,” citing scheduling, flexibility, and access to a diverse audience as the primary reasons.

Satisfaction with training formats—Satisfaction scores were significantly higher in the F2F group ($p < .001$). Fifty-one percent of participants in the online group were “very” or “completely satisfied” compared to 91% of participants in the F2F group (see Table 2).

Given the disinclination for online training, it is noteworthy that the online training participants reported on average being “very satisfied” with the training at the end of the course (3.60/5.00 scale). Only 20%, however, said they were “completely satisfied.” The satisfaction mean for the F2F group was 4.40/5.00. Group differences in satisfaction were statistically significant when controlling for knowledge at baseline $F(1, 94) = 36.209, p < .001$.

Given that a key distinction between the online and F2F training was that the former occurred over eight weeks (compared to 1.5 days for F2F), we asked participants about the time required to complete the training. In the online group, the majority (57%) found it to be “about right”; 16% said it was “too much”; while 18% said it was “not enough.” In the F2F group, 71% responded that it was “about right”; only 1% found it “too much”; while 22% thought it was “not enough.”

Satisfaction with specific training features—Asked to rate the importance of specific training features, online trainees rated their ability to access course materials online (4.3/5.0) and ability to go through the modules at their own pace (4.2/5.0) as being most important. F2F participants rated the opportunities for personal interactions with trainers (4.20/5.00) as most important (see Table 3).

We asked participants about their level of interest and involvement with each of the training features. Online participants expressed the highest level of engagement (“very engaged” or 4.00/5.00) with the self-paced training modules and were least engaged (2.90/5.00) with the online discussions. Overall, they were only “somewhat engaged” (average of 3.00/5.00 on the rating scale) with the remainder of the training features. F2F participants rated their overall engagement higher, with the strongest ratings for small group (4.03) and large group discussions (4.00); see Table 4.

Knowledge gains—Both groups reported significant knowledge gains between pre- and posttests: the online group score improved from 1.71/5.00 to 3.57/5.00, and the F2F group from 1.72/5.00 to 3.50/5.00. Scores on all knowledge questions for both groups were statistically significant pre- versus posttraining, demonstrating that both groups gained knowledge as a result of the training. We found no statistically significant difference between the two conditions in knowledge scores posttraining when controlling for pretraining scores.

Knowledge retention—Scores on knowledge retention increased among participants in both conditions. The online participant scores on posttraining knowledge retention after nine months were slightly higher than those of F2F participants. After completing the training, the online group had an average score of 80%, while the F2F group scored 76%. After nine months, the online group was at 87% (t -value = 2.42, $p < .05$), and the F2F group scored 82%. Differences in knowledge retention were not statistically significant when controlling for baseline knowledge scores. However, nine-month differences were marginally significant when controlling for baseline knowledge scores and posttraining knowledge retention $F(1, 60) = 2.99$, $P < .10$.

Readiness to implement CTI—Approximately two-thirds of each group reported high levels of confidence in their readiness to implement CTI as a result of the training. Online participants were slightly more apt to report being extremely confident (26% in online group compared to 19% in F2F group), although we found no statistically significant differences between the two conditions. It should be noted that when these data were collected, F2F participants had not yet completed all follow-up consultation calls.

A key component of the CTI training was the requirement that each team develop a plan to implement CTI in their agencies. After completing the training, participants described their team's experience with this process and clear differences emerged. Nearly half (45%) of the F2F participants reported that each team member "contributed equally throughout" the preparation and presentation of their implementation plan, compared to only 2% of online participants. Nearly two-thirds of the online group said team members did not contribute equally in the process.

DISCUSSION

This study compared the effect of online versus face-to-face training on homeless service providers' satisfaction, knowledge gains and retention, and readiness to implement CTI, an evidence-based case management model. Both groups showed strong, comparable increases in knowledge acquisition and retention over time although F2F participants were more satisfied with their experience. The online group demonstrated marginally better knowledge retention nine months post-training although this difference did not reach statistical significance.

The findings suggest various strengths and weaknesses of online and F2F training formats. The homeless services workforce represented in this study prefers face-to-face training and was more satisfied than those participating in the online format. This is consistent with

previous studies comparing online and face-to-face education that describe how learners value human interactions with content experts and peers that occur in F2F training (McCutcheon et al. 2015; Young and Duncan 2014). Emerging research shows that these perceptions may be shifting in fields such as nursing and social work education (McCutcheon et al. 2015; Phelan 2015). In the homeless services field, however, e-learning is just beginning to take root, which may explain the strong preference in our sample towards F2F training. This clear preference may also reflect a low level of comfort with technology and lack of experience with online learning.

In terms of knowledge gains, our study found no significant differences between the online and F2F conditions: both groups gained new knowledge, with comparable pre- and posttest scores. These results support the findings of previous studies comparing online and face-to-face learning (Bennett-Levy et al. 2012; Bernard et al. 2004; Bloomfield, Roberts, and While 2010; Hilton and Ham 2015; Magruder et al. 2015; Means et al. 2009; Platz et al. 2010). These studies indicate that both online and in-person training formats result in similar degrees of knowledge gain. To our knowledge, the current study is the first to document these findings in workforce development in homeless service settings.

Not only did the online training intervention achieve knowledge gains comparable to in-person training, the online intervention also seems to have produced slightly better knowledge retention in the nine months following training. As with our findings on knowledge gains, these knowledge retention outcomes align with previous studies documenting that online learning is equal to or better than face-to-face training in supporting knowledge retention over time (Bloomfield, Roberts, and While 2010; Platz et al. 2010). It is possible that these findings can be partly attributed to the training design: the online course lasted eight weeks, giving participants time to digest and apply their knowledge, as opposed to receiving a large body of information in 1.5 days in F2F training. The online resources remained available to participants throughout the study, allowing learners to go back to the course as a refresher and retrieve information to help them address specific challenges during implementation. This finding adds to the growing literature that supports the role of self-directed learning and student control of the learning process as key factors that improve knowledge retention (Edmondson, Boyer, and Artis 2012; Murad et al. 2010). Furthermore, given the limited resources in the homeless service system, online training can be more cost-effective and time efficient.

Knowledge scores increased over time in both groups, but to a greater degree in the online group. This suggests that as the providers implemented CTI over time, they increasingly integrated the knowledge base and mastered various skills. This finding suggests the need for additional research to explore factors that support implementation of evidence-based practices in resource-limited settings.

It is notable that follow-up data at nine-months posttraining proved difficult in both groups, a challenge faced by other studies (Bloomfield, Roberts, and While 2010; Rheingold et al. 2015). The homeless services workforce has extremely high rates of turnover, often due to high stress, limited resources, low wages, lack of opportunity for career advancement, and limited exposure to the value of research of this type (Mullen and Leginski 2010; Olivet,

McGraw, et al. 2010). These conditions not only limit researchers' ability to collect longitudinal data, but also the ability of agencies to sustain the impact of training and implementation of effective practices.

Finally, participants in both conditions appeared confident and ready to implement CTI following the training interventions, suggesting that both online and F2F training are effective in laying the groundwork for operationalizing new knowledge and skills. In developing implementation plans, however, the F2F group experienced more involvement from more team members. The F2F training followed by consultation appears to have fostered more participation by multiple team members, which could affect staff engagement in implementing the model over time.

LIMITATIONS

Various limitations in the study design and data analysis affect the generalizability of our findings. First, the sample, composed of programs serving individuals experiencing homelessness, was motivated to integrate CTI into their programs and had dedicated teams to participate in the study. Second, not every participant completed all surveys, affecting our ability to track learning outcomes over the period of the study, particularly at nine-month follow-up. Additional uncertainty was introduced by having 19 organizations make up the study, each with its own organizational characteristics. It is possible that the results may be a function of which provider the participant is in rather than or in addition to the treatment conditions. While we attempted to minimize associated bias with our randomization methods, other organizational variables unaccounted for may also be affecting satisfaction with training, knowledge gains, and readiness to implement CTI. Finally, the data reported here come from a larger study that tracked facilitators and barriers to implementation, as well as client-level outcomes of the CTI intervention at the agencies that participated (see Olivet et al. 2013 for more thorough discussion). Bear in mind that the findings presented in this article relate only to outcomes on satisfaction, knowledge gains and retention, and readiness to implement.

CONCLUSIONS

This study is the first of its kind in the homeless services field. It offers potential new directions in applying online learning to promote the uptake of evidence-based interventions in an underserved social sector. Our findings demonstrate the possibilities of online learning in supporting knowledge gain and knowledge retention and increasing providers' ability to implement EBPs. Such an approach will ultimately improve the quality of care and outcomes for people experiencing homelessness. The study suggests that more online learning opportunities should be developed to support the increasing growth and professionalism of the workforce. The online training model developed for this study includes synchronous and asynchronous learning components, relying on peer interactions and live instruction from experts. This model can be effectively applied to training of other evidence-based practices.

Our study also has implications for ongoing research on training modalities for low-resourced service settings. The findings indicated that in-person and online training have different strengths and limitations. While this study compared these modalities, it may be that a blended online–onsite training approach is optimal. Further research is needed to determine the feasibility and effectiveness of blended or hybrid training in homeless services—an approach that has shown promising results in other recent studies (Liu et al. 2016; Phelan 2015). Further research should also examine how organizations handle turnover and training new staff after investing in training on evidence-based practices.

This study brings together the increasing emphasis on evidence-based interventions with emerging practices in online learning. The results demonstrate the possibility of expanding the reach and effectiveness of training initiatives to improve homeless services. If such reach and impact can be achieved, the ultimate result will be a homeless service system that can more effectively provide housing and supportive services for people in desperate need.

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Table 1

Characteristics of Training Participants (N = 184)

	Online (n = 72)	Face to face (n = 112)
Gender (% female)	.68	.73
Age (mean # of years)	41	39
Race (% non-White)	.29	.30
Education		
GED or high school	.03	.06
Some college, associate's or bachelor's degree	.54	.63
Master's or doctorate degree	.43	.32
Experience working with homeless people		
5 years	.48	.50
6–15 years	.36	.34
16 years	.16	.16
CTI awareness (% familiar with CTI)	.58	.66

Source: Pretraining Survey.

Table 2

Satisfaction with training

	Online (n = 49)	Face to face (n = 81)
5 Completely satisfied	.20	.50
4 Very satisfied	.31	.41
3 Satisfied	.39	.09
2 Moderately unsatisfied	.10	.00
1 Not at all satisfied	.00	.00
Means	3.61 (SD .931)	4.41 * (SD .657)

Source: Posttraining Survey.

*
 $p < .001$

Table 3

Importance of training features for learning CTI(Mean on scale from 1 = not at all important to 5 = extremely important)*

Online	(n = 49)
Ability to access course materials online	4.33
Ability to go through the modules at my own pace	4.20
Podcast interviews with experts	3.70
The case study	3.69
Videos of other CTI practitioners' experiences	3.63
Online discussions within the modules	3.53
Diversity (e.g., geographic, race/ethnic, gender) of presenters in the modules	3.49
Sharing implementation plans with other teams	3.47
Module quizzes	3.35
Face to face	(n = 81)
Personal interactions with trainers	4.21
Being away from my office and outside distractions	3.62

Source: Posttraining Survey.

* Means are based on valid responses.

Table 4

Self-reported level of engagement with training features (Mean on scale from 1 = not at all engaged to 5 = extremely engaged)*

Online	(n = 49)
Training modules (self-paced)	4.04
Learning environment (e.g., course materials, discussion boards)	3.38
Small-group sessions	3.35
Whole-group webcasts (throughout the course)	3.30
Presentation webcast (at end of course)	3.16
Online discussions	2.94
Face to face	(n = 81)
Small-group discussions	4.03
Large-group discussions Q&A	4.00
Work on the implementation plan	3.76

Source: Posttraining Survey.

* Means are based on valid responses.

Table 5

Knowledge gains by training condition

Mean responses on a confidence scale of 1 (not at all confident) to 5 (extremely confident)

	Online		Face to face	
	pretest n = 72	posttest n = 49	pretest n = 112	posttest n = 81
Describe CTI as an intervention (i.e., three phases and pre-CTI) and its core principles.	1.80	3.82**	1.87	3.67 *
Describe who is on the CTI team, what their roles are, and examples of how they function as a team.	1.79	3.88**	1.80	3.69**
Describe the clinical/treatment areas of intervention and the goal of each.	1.78	3.43 *	1.73	3.53 *
Describe the 5 core skills of CTI and purpose of each.	1.67	3.38 *	1.59	3.36 *
Describe how to start a CTI program, including identifying client needs and community linkages.	1.74	3.56**	1.70	3.45 *
Identify some of the challenges that might arise in trying to establish CTI in different settings.	1.74	3.54**	1.80	3.51 *
Understand how chart work is slightly different in CTI from usual case management and why.	1.55	3.51**	1.61	3.47 *
Describe key indicators that CTI is being implemented appropriately/as it was intended.	1.63	3.40 *	1.69	3.32 *
Average Knowledge Scores	1.71	3.57	1.72	3.50

Source: Prepost Training Surveys.*
 $p < .05$ ***
 $p < .001$