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Tobacco-related Knowledge Following a Comprehensive Tobacco-Free Workplace Program within Behavioral Health Facilities: Identifying Organizational Moderators

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Abstract

Objective: Although smoking prevalence rates among behavioral health consumers is nearly five times that of the general population, evidence-based policies and practices to address tobacco use are uncommon within behavioral health settings. This study assessed changes in non-clinical, general staff and clinician tobacco-related knowledge following brief education provided as part of

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Authors' contributions

LRR and CL wrote and were awarded the grant that provided funds for the collection of the data included in this study. They were the Project Directors responsible for the conduct of all aspects of the study, which includes the specific parts of the program/project described herein. WTW, VCF, and TW were Co-Investigators on the program/project and contributed to various aspects of project design and implementation. BK and TS were funded by the grant to develop and provide the trainings described in this study. Further, they collected the data used. BK and TS were supervised in their work by WTW and TW. LRR conceptualized this study, and was responsible for scoring the data used in this study. LG analyzed the data under the guidance of CN and MJZ. LG, IML, and LRR were major contributors in writing the manuscript. All authors read and approved the final manuscript, and provided feedback to guide the final version.

Declarations section

Ethics approval and consent to participate

Activities conducted in PP130032 were approved by the following academic institutional committees: Quality Improvement Assessment Board of the University of Texas MD Anderson Cancer Center; Institutional Review Board at Rice University; and the Institutional Review Board at the University of Houston.

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a comprehensive tobacco-free workplace program implementation and explored organizational moderators of pre- to post-education knowledge change.

Methods: Fifteen behavioral health facilities, comprising hundreds of individual clinics in Texas, participated in a one (for general staff) or two (for clinicians) hour educational session.

Results: There were large effect sizes in general staff knowledge gain within each consortium, and large effect sizes in clinician knowledge gain in all but one consortium. Knowledge of the requirements for change, perceived availability of resources, and total number of client contacts moderated general staff knowledge gain. Value in the change and total number of client contacts moderated training effectiveness among clinicians.

Conclusions: We conclude that a brief tobacco-related education for behavioral health employees was effective in increase attendee knowledge.

Practice Implications: Attention to organization-level factors moderating knowledge gain has the potential to guide and improve program implementation.

Keywords

behavioral health agency; tobacco cessation education; tobacco-free workplace program; knowledge gained; organizational moderators

1. Introduction

Tobacco use is the leading preventable cause of mortality and morbidity worldwide [1]. Although the rate of smoking has decreased significantly among the general population (i.e., 20.9% in 2005 to 15.1% in 2015), smoking remains pervasive within specific subgroups [2]. Smoking prevalence among individuals with behavioral health conditions (BHCs) (e.g., psychiatric and substance abuse disorders) is nearly five times that of the general population [3–8]. In fact, smokers with BHCs account for 50% of smoking-related deaths annually [9]. The tobacco-related health disparities experienced by this group have contributed to the recognition that behavioral health clients are a priority group for tobacco use reduction [10, 11].

Smokers with BHCs report a desire to quit smoking that is comparable to or higher than that of the general population of smokers [12–14]. Yet, such persons are less likely to quit smoking compared to smokers in the general population (30.5% versus 42.5%) [15]. One explanation for this discrepancy is that smokers with BHCs do not receive the specialized care they need to quit successfully [16]. Fewer than half of behavioral health facilities in the United States provide tobacco cessation counseling [17] and only 33% of behavioral health professionals advise or assist clients with smoking cessation [18]. Behavioral health professionals may be reluctant to treat their clients' tobacco dependence because of a lack of training or knowledge to help these smokers quit [19–21]. Indeed, lack of training and knowledge is the most commonly reported barrier to providing smoking cessation treatment [22–24]. Without first-line point of care contacts possessing the proper knowledge and skills to confidently assess and treat nicotine addiction, vulnerable groups of smokers may miss out on treatment and subsequently experience worse physical and mental health outcomes.

Tobacco dependence training programs for behavioral health professionals are effective at increasing knowledge and confidence for tobacco dependence treatment [24–26]. These programs result in increases in: documentation of tobacco use, advising clients to quit, prescriptions for tobacco treatment medications, and client behavior change as evidenced by increased quit attempts [24–26]. Yet, behavioral health facilities have been slow to provide the necessary trainings to incorporate tobacco cessation interventions into ‘treatment-as-usual’ care [27, 28]. The lack of training may translate into a ‘missed opportunity’ to screen for tobacco use and assist clients with quitting [16, 29–32]. A first-step towards the universal adoption of tobacco use treatment provision in behavioral health settings is to educate caring clinicians and general staff on best practices to enhance tobacco cessation among this vulnerable group and to engender a culture that practices the routine assessment of tobacco use within behavioral health facilities [11, 25, 33].

Prior to implementing extensive tobacco dependence training protocols within behavioral health facilities, it may be beneficial for policy makers to have a clear understanding of organization-level factors that impact training effectiveness. For example, one of the most common trainee outcomes assessed following tobacco training is knowledge [34]. Change in knowledge is often targeted because it is recognized as fundamental to changing health behavior in various behavioral theories [35]. Yet, little is understood about how organization-level factors, such as organizational readiness to change or client contacts (an indicator of facility size or capacity), may modify training effectiveness on knowledge change. These structural factors may be particularly relevant to examine in the context of training effectiveness considering their theoretical link to implementation and/or adoption of innovations [36]. Indeed, organizational theories argue that change-related effort (such as increased knowledge) may be a consequence of the organization’s readiness to change [37]. As such, evaluating structural factors at the organization level may provide valuable insight into factors that may enhance or disrupt the translation from empirically-based research to implementation in practice [36].

The aim of the present study was to evaluate change in attendee knowledge following a brief tobacco-related educational program administered within behavioral health facilities, and to examine organization-level moderators of change in knowledge. Data from the Taking Texas Tobacco-Free (TTTF) [26] program were employed to address these aims. TTTF is an academic-community partnership that aims to decrease cancer risks among clients and employees (clinicians and non-clinical/general staff) at behavioral health facilities across Texas through the dissemination and implementation of an evidence-based, multi-component tobacco-free workplace program [38]. It was hypothesized that both clinicians and general staff would evincea significant increase in knowledge related to tobacco use and dependence among smokers with behavioral health diagnoses following the education, and that organization-level structural factors, including readiness to change and client contacts, would moderate training effectiveness.

2. Methods

2.1 Organizational Participant Characteristics and Consent

Local Mental Health Authorities (LMHAs) are state-supported, geographically-organized, non-profit community mental health facilities that provide behavioral health services to Texans. All 38 LMHAs in Texas aside from the TTTF community partner (Integral Care) were invited to participate in the program via an email invitation sent to their leadership (i.e., Chief Executive Officer). Participation was limited to 18 LMHAs based on budget, and LMHAs were selected to participate based on their responses to an initial leadership survey assessing organizational characteristics and readiness for organizational change (ORIC) [37]. For additional information on the selection of LMHAs, please see Samaha et al. [38]. Additionally, written consent was obtained from participating LMHA leadership prior to study participation in the form of a Memorandum of Understanding.

2.2 Program Implementation

The TTTF program was implemented within each LMHA over the course of a six month implementation period (for more information, see [39]), and included adoption of tobacco-free workplace policy, education on tobacco use broadly and tobacco use treatment within a behavioral health facility, and specialized trainings for clinicians. The education session consisted of either an in person, one-hour educational session to all non-contact, general staff (general training) or an in-person two-hour educational session to all contact staff (clinician training). The educational sessions were provided to all staff within the initial 1–2 months of the TTTF implementation. Slides and/or recorded webinars of trainings are available from the senior author upon request.

2. 3 Educational Sessions, Participants & Procedures

In total, 100 general and 126 clinical trainings were held from September 10, 2014 to September 4, 2015. There were 2,272 general staff and 2,326 clinicians who participated in the educational sessions overall, with session attendance ranging from 1 to 76 attendees. The TTTF educational sessions were didactic and consisted of a visual slide-based presentation, group discussions, and practice role-plays. All participants received training on the physical effects of tobacco use and environmental tobacco smoke, benefits of a tobacco-free workplace policy (with practical guidance on how to assist others to be compliant with it), tobacco use among people with BHCs (e.g., myths and facts on tobacco use, quitting, and relationship to behavioral health care), and information on tobacco dependence treatment, including the effectiveness of Nicotine Replacement Therapies (NRT). The clinician education session additionally included instruction on delivering individual and group interventions for tobacco use; the development, use and integration of Tobacco Use Assessments into routine clinical practice; combining pharmacotherapy (including NRT) and behavioral counseling for maximum success; adjusting psychotropic medications during tobacco treatment; and addressing barriers to implementing tobacco dependence interventions in behavioral health facilities. Information supporting the training slides was drawn from the most recent literature on evidence-based practices and policies [38, 40].[1]

[1] Additionally, please see: Taking Texas Tobacco Free Implementation Guide, available at: www.takingtexastobaccofree.com

Attendees completed an anonymous knowledge test on tobacco effects and appropriate treatment before and after the education session. The pre- and post-session tests were identical in content within session type (general versus clinical). Due to a coding error in scoring pre- and post-session assessments, data from three of the 18 LMHA were omitted from the present study.

2.4 Measures of Relevance

2.4.1 Organization Demographics.—Organization leaders provided information on the number of annual client contacts made within the organization (0 = ≤20,000; 1 = >20,000), number of unique clients served annually (0 = ≤10,000; 1 = >10,000), and the number of full- time employees during the year before TTTF implementation (i.e., from the LMHA's most recent annual report). Data were collected via Survey Monkey prior to TTTF implementation.

2.4.2 Organizational Readiness for Implementing Change (ORIC).—The ORIC [37] is based on Weiner's theory of organizational readiness for change [41]. Higher organizational readiness for change is related to higher change initiation, organizational members' greater effort and persistence, and more cooperative behavior [42]. The ORIC was administered to LMHA leadership as part of the pre-TTTF program implementation survey. An example item included, 'People who work here feel confident that the organization can get people invested in implementing this change,' to which participants respond on a scale from 1 (*disagree*) to5 (*agree*). The ORIC yields 5 subscales formed from 24 items. Higher scores indicate greater beliefs related to organizational change for the specific subscale domain. Subscales demonstrated acceptable to excellent internal consistency (organizational efficacy toward change: α = .92; commitment to change: α = .93; knowledge of the requirements for change: α = .92; perceived availability of resources: α = .78; perceived valence in the change: α = .89).

2.4.3 Tobacco-related Knowledge Gain.—Participants completed an investigator-constructed 10-item, multiple-choice and true/false knowledge test immediately before and immediately after the educational session. Items were developed through an iterative process that included item development, expert review, and refinement. Items were selected that directly captured content covered in the education session. Examples of questions included in the knowledge tests were: 'What percent of adults with mental illness smoke cigarettes? a) 17%, b) 24%, c) 34%, d) 50%,' and 'Tobacco free policies will lead to premature withdrawal from mental health and/or substance abuse treatment programs at significant levels (true or false).' Total number correct was used to assess knowledge.

2.5 Analytic Strategy

Tobacco-related knowledge change was assessed within and between LMHAs by education session target (i.e., general and clinical staff). Pre- and post-session data were un-matched at the participant level, but were nested within LMHA; therefore, generalized estimating equations [GEE; 43] were employed for analysis. Robust standard errors adjusted for clustering within LMHA clinics were estimated for GEE analyses. Post-hoc pairwise comparisons examined differences within LMHAs in test scores from pre- to post-training.

Cohen's d was used to assess effect size. Next, organizational readiness to change subscales and the total number of annual client contacts were examined as moderators of tobacco-related knowledge gain (i.e., training effectiveness). GEE models were employed to test this study aim and robust standard errors were estimated. Slopes for the relation between the moderator and pre- and post- session test score were examined to clarify the form of the interaction. Analyses were conducted with STATA version 13.

3. Results

Detailed information about the participating behavioral health facilities is presented elsewhere (see [26]).[2] Broadly, facilities 2, 8, and 11 served exclusively urban communities; facilities 12 and 13 served exclusively rural communities; and all other facilities served both urban and rural communities. Two facilities (7 and 15) had a tobacco-free policy prior to TTTF implementation. The 15 LMHAs included in analysis served an average of 6.23 (SD = 4.91; range: 1 – 21) counties. Seven LMHAs reported <20,000 annual client contacts, 10 reported serving <10,000 clients annually, and 8 reported <300 full-time employees. On average, scores on the ORIC subscales (potential ranges 1–5) were as follows: organizational efficacy = 4.31 (SD = .79; observed range = 2.43–5), commitment = 4.36 (SD = .78; observed range = 2.20–5), knowledge = 3.16 (SD = 1.20; observed range = 1–5), resources = 3.42 (SD = .94; observed range = 1.75–5), and valence = 4.81 (SD = .43; observed range = 3.4–5).

3.1 Tobacco-Related Knowledge Change: General Education

General staff participants scored, on average, 4.78 (SD = 1.54) on the pre-test and 7.11 (SD = 1.89) on the post-test (range of change: 1.69–3.43 points; see Table 1). In pre- to post-session test comparisons, a significant main effect of time emerged (b = 2.34, SE = .18, p < .001), providing statistical evidence for the effectiveness of the education session in achieving knowledge gains among the participants. Additionally, a large effect size for score change from pre- to post-session training was observed at every participating LMHA.

3.1.2 Tobacco-Related Knowledge Change: Clinical Training—On average, clinicians scored 4.56 (SD = 1.67) on the pre-session test and 6.93 (SD = 1.82) on the post-session test (range of change: 1.48–3.53 points; see Table 1). In pre- to post- session test clinical comparisons, a significant main effect of time emerged (b = 2.41, SE = .16, p < .001). A large effect size for score change from pre- to post-session training was observed within every participating LMHA except one, which demonstrated a medium effect.

3.2.1 Training Effectiveness Moderators: General Education—Among general staff, LMHA knowledge of the requirements for change score significantly moderated training effectiveness (b = 0.27, SE = .11, p = .012). The significant interaction indicated that LMHAs with greater knowledge of the requirements for change reported greater gains in knowledge than those with less knowledge of the requirements for change.

[2]Corresponding centers across Correa-Fernández, et al. [26] and the current study are as follows: 8 and 1; 9 and 2; 1 and 3; 10 and 4; 11 and 5; 12 and 6; 13 and 7; 14 and 8; 15 and 9; 3 and 10; 4 and 11; 6 and 12; 7 and 13; 17 and 14; 18 and 15.

LMHA perceived availability of resources significantly moderated training effectiveness (b = 0.31, SE = .15, p = .005). Examination of interaction suggested that LMHAs with greater perceived availability of resources reported higher post-session test scores.

All other ORIC subscales were non-significant moderators of training effectiveness (efficacy: b = 0.24, SE = 0.17, p = .14; commitment: b = 0.29, SE = 0.19, p = .12; valence: b = 0.32, SE = 0.26, p = .22).

The total number of client contacts approached significance in moderating training effectiveness (b = −0.46, SE = .27, p = .086). LMHAs with fewer annual client contacts demonstrated a trend toward improvement from pre- to post-session test relative to LMHAs with more client contacts.

3.2.2 Training Effectiveness Moderators: Clinical Training—

LMHA perceived value in the change significantly moderated training effectiveness among clinicians (b = −.60, SE = .20, p = .002). LMHAs with lower perceived value in the change scores demonstrated greater improvement from pre- to post-session test relative to LMHAs with higher scores.

None of the other ORIC subscales moderated training effectiveness within this group (efficacy: b = −0.19, SE = 0.15, p = .30; commitment: b = −0.06, SE = 0.21, p = .79; knowledge: b = .02, SE = 0.08, p = .82; resources: b = 0.18, SE = 0.14, p = .20).

The total number of client contacts moderated training effectiveness for clinicians (b = −0.63, SE = .25, p = .011). LMHAs that served fewer people demonstrated greater improvement from pre- to post-session test relative to LMHAs that served more clientele.

4. Discussion and Conclusion

4.1 Discussion

The present study evaluated the effectiveness of a tobacco-training program to increase tobacco-related knowledge relevant to behavioral health clients and examined potential moderators of training effectiveness. Consistent with predictions, both clinical and general staff reported increased tobacco-related knowledge from pre- to post-session. In addition, select organization-level factors moderated the training effectiveness on increase in knowledge. Specifically, knowledge of the requirements for change, perceived availability of resources, and total number of client contacts moderated general staff knowledge gain, whereas only value in the change and total number of client contacts moderated training effectiveness among the clinicians. These novel data provide initial evidence for the effectiveness of a brief tobacco training to increase staff knowledge on best practices to treat their clients within behavioral health facilities in Texas and identify factors that may influence learning this material.

The increase in trainee pre-post session knowledge suggests that the delivered education session is an effective method to increase understanding of benefits of a tobacco-free workplace policy and how to encourage client and employee compliance with it; myths and facts about tobacco use, quitting, and relationship to behavioral health care; and information on tobacco dependence treatment. Importantly, the effect size was large across all LMHAs for knowledge gained by staff and in all but one LMHA for knowledge gained by clinicians, thereby supporting the clinical utility of the present training. The demonstrated effects are particularly notable given that knowledge about tobacco cessation treatment is a commonly cited barrier to providing smoking treatment [34]. By addressing this barrier though brief education, behavioral health clinicians may be more likely to screen for tobacco use, discuss smoking treatment options with their clients, and assist them with quitting.

Two of the tested organization-level readiness factors emerged as significant moderators of training effectiveness among general staffers. Inspection of the interactions suggested that LMHAs with greater knowledge of the requirements for change, including the time, resources, and individual tasks need to implement the change, and more perceived availability of resources reported greater improvements in knowledge related to tobacco treatment. These two subscales tap into the logistics needed to successfully implement smoking cessation policy change and treatment into the targeted facilities. As a result, general staff from LMHAs wherein more logistical support is offered may be more invested in the training and view it as a reachable goal for their LMHA. Conversely, general staff from LMHAs with less logistical support, or less awareness of support, may not assimilate the information because they may anticipate difficulties with program implementation. Conversely, it is also possible that less knowledge of the logistical support needed to implement this program may also engender a *reduced* ability to anticipate challenges in the process, which could affect motivation to absorb new information to overcome them as offered within the educational sessions. Future work in this area would benefit from methods to clarify the factors that underlying these moderation effects.

The organization’s perceived value in the change significantly moderated training effectiveness among clinical staff. The pattern of the effect, however, was counterintuitive. Evidence suggested that clinicians affiliated with LMHAs that perceive the change (e.g., implementation of smoking treatment as standard care) as *less* valuable evinced significantly greater increases in knowledge relative to LMHAs that valued the change more. It is possible that clinical staff from facilities that perceived the change as very valuable may have been exposed to this information before. As a result, they may consider themselves as already knowledgeable and may not have focused as much on the content, lending to less gains in knowledge. Clinicians from LMHAs that placed moderate value on the change, however, may have been more curious to hear the information and may not have had as much exposure to the content covered. This may have encouraged greater concentration and attention from these clinicians and contributed to greater gains. Trainers may consider this information and modify their content accordingly to ensure that the covered material is not redundant with the trainees’ current knowledge and encourage audience participation and attention.

Across clinicians and general staff, evidence implicated the total number of client contacts as a potential moderator of training effectiveness. Data suggested that LMHAs with fewer total number of client contacts (an index of organization size, and potentially capacity) evinced greater knowledge gains from pre- to post-session relative to LMHAs with more client contacts. Importantly, both groups scored high on the post-session test and did not differ on their scores, suggesting that the gains were a consequence of smaller organizations having less knowledge at the pre-session test. This observation highlights the importance of offering tobacco training programs to smaller behavioral health facilities because they may be at an increased disadvantage for knowledge to treat their clients.

Study limitations warrant comment. First, the current study was limited to interested facilities in Texas of varying sizes. It is possible that selection bias may have occurred considering that facilities opted into the program. Thus, the external validity of these findings is limited and warrant further examination across additional agencies and states. Moreover, although the variability in participants per training is representative of 'real-world' experiences and therefore a strength of the study in terms of ecological validity, this may, in part, have influenced knowledge gained therein. Future work should examine the pattern of findings across facilities with comparable number of employees to parse the effect of the training from the potential third variable influence of training cohort size. Second, although a pre-post design was employed, the design was based on LMHA and not matched by trainee. As such, some trainees may have completed only one of the tests. The non-matched design was, in part, a consequence of anonymous response design. To combat this challenge, additional work is needed that employs a matched pre-post design wherein responses can be matched based on a randomly assigned number. Third, due to a coding error, some of the data were unusable. Thus, the degree to which the current findings may have been influenced by the additional data is unknown. Fourth, the extent to which increases in knowledge influenced behaviors among clinicians and general staff – and for how long – in this particular sample is unknown; however, LMHAs participating in this study demonstrated significant changes in behaviors as a result of the program overall, including significant increases in the provision of evidence-based screening and intervention practices for their clients' tobacco use and a decrease in staff tobacco use that was measured months following the provision of the educational sessions [26]. Finally, ORIC data was limited to the perspective of leadership. Future work may consider examining this construct across levels of the organization, including staff, clinicians, managerial personnel, and higher leadership. Understanding perceptions of the organization from a system wide perspective would provide a more holistic picture of how facets of the ORIC may influence change.

4.2 Conclusion

The present study contributes to the emerging field of implementation science [44], as the educational program described here provided behavioral health practitioners with empirically valid methods to address smoking cessation with their clients. The training protocol was developed based on currently available 'best standards' to treat nicotine addiction among smokers with BHCs [38, 40].[1] These practices have been subjected to rigorous scientific testing to isolate the most effective methods to treat this vulnerable population of smokers. This translational approach to training development helps narrow the research-practitioner disconnect and ensure that community members receive the best care. Additionally, consistent with the Consolidated Framework For Implementation Research [44], the current findings provide insight into factors that may promote training effectiveness of a brief, knowledge-based tobacco-training program and evidence for differential patterns across general staff and clinician attendees. Such work largely aligns with current research initiatives in this area given the important implications for program development and implementation [6].

4.3 Practice Implications

The present study provided initial evidence for the effectiveness of a brief educational session delivered to general staff and clinicians in behavioral health facilities in increasing knowledge about the importance of addressing tobacco use in these settings using evidence-based policies and practices. Additionally, identified factors that differentially moderate training effectiveness among general staff and clinical staff should be considered in the implementation or tailoring of the educational program delivery and content within similar settings. Future work is needed to examine the present training programs within behavioral health facilities beyond the Texas area.

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List of abbreviations:

TTTF	Taking Texas Tobacco Free
LMHA	Local Mental Health Authorities
NRT	Nicotine Replacement Therapies
ORIC	Organizational Readiness for Implementing Change
GEE	Generalized Estimating Equations

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Highlights

- Training on tobacco increases related knowledge among behavioral health providers
- Organization-level motivation and structure moderate training effectiveness
- Change requirements, availability of resources, and client contacts moderates staff gains
- Perceived value of change and client contacts moderates clinician gains

Table 1.

Pre- and Post-Training Test Scores Across General Staff and Clinicians

LMHA	Pre-Test *N*	Pre-Test Mean (95% CI)	Pre-Test SE	Post-Test *N*	Post-Test Mean (95% CI)	Post-Test SE	Score Change (95% CI)	*p*-value	Cohen's D
General Staff Trainings									
1	40	4.40 (4.03,4.77)	0.19	42	7.60 (7.09,8.10)	0.26	3.20 (2.57,3.82)	<.001	2.20
2	68	4.76 (4.42,5.11)	0.17	70	6.89 (6.45,7.32)	0.22	2.12 (1.57,2.67)	<.001	1.28
3	46	5.39 (5.04,5.74)	0.18	51	7.94 (7.49,8.39)	0.23	2.55 (1.98,3.12)	<.001	1.77
4	20	4.45 (3.89,5.01)	0.29	17	6.88 (6.25,7.51)	0.32	2.43 (1.59,3.28)	<.001	1.87
5	65	4.26 (3.94,4.58)	0.16	73	6.21 (5.73,6.69)	0.25	1.94 (1.37,2.52)	<.001	1.11
6	59	4.29 (3.90,4.67)	0.20	57	6.44 (5.91,6.96)	0.27	2.15 (1.50,2.80)	<.001	1.21
7	36	4.56 (4.10,5.01)	0.23	36	7.22 (6.77,7.68)	0.23	2.67 (2.02,3.31)	<.001	1.90
8	62	4.79 (4.45,5.13)	0.18	48	7.63 (7.28,7.97)	0.18	2.83 (2.35,3.32)	<.001	2.18
9	40	4.10 (3.68,4.52)	0.21	43	7.53 (7.11,7.96)	0.22	3.43 (2.83,4.04)	<.001	2.46
10	85	5.39 (5.09,5.69)	0.15	81	7.28 (6.90,7.66)	0.19	1.90 (1.41,2.38)	<.001	1.19
11	58	4.66 (4.19,5.12)	0.24	71	7.07 (6.52,7.62)	0.28	2.42 (1.70,3.13)	<.001	1.15
12	50	4.70 (4.27,5.13)	0.22	67	7.30 (6.82,7.77)	0.24	2.60 (1.96,3.24)	<.001	1.46
13	226	5.07 (4.84,5.29)	0.12	230	6.75 (6.48,7.03)	0.14	1.69 (1.33,2.04)	<.001	0.87
14	89	4.65 (4.38,4.93)	0.14	103	7.37 (7.09,7.65)	0.14	2.72 (2.32,3.11)	<.001	1.95
15	91	4.75 (4.44,5.05)	0.15	93	7.65 (7.38,7.91)	0.14	2.90 (2.49,3.30)	<.001	2.07
Clinician Trainings									
1	70	4.40 (4.06,4.74)	0.18	69	7.64 (7.29,7.98)	0.18	3.24 (2.75,3.72)	<.001	2.22
2	126	4.47 (4.18,4.76)	0.15	130	6.89 (6.58,7.2)	0.16	2.42 (2.00,2.85)	<.001	1.39
3	128	5.66 (5.34,5.98)	0.16	76	7.13 (6.79,7.48)	0.18	1.48 (1.00,1.95)	<.001	0.87
4	153	4.20 (3.96,4.44)	0.12	142	7.03 (6.73,7.33)	0.15	2.83 (2.44,3.21)	<.001	1.69
5	108	4.00 (3.73,4.27)	0.14	121	6.5 (6.18,6.83)	0.17	2.50 (2.08,2.93)	<.001	1.51
6	73	4.08 (3.77,4.39)	0.16	80	7.46 (7.15,7.78)	0.16	3.38 (2.94,3.82)	<.001	2.41
7	125	4.07 (3.82,4.32)	0.13	116	6.67 (6.38,6.97)	0.15	2.60 (2.21,2.99)	<.001	1.71
8	232	4.50 (4.31,4.70)	0.10	237	7.08 (6.89,7.28)	0.10	2.58 (2.30,2.86)	<.001	1.68
9	61	4.21 (3.78,4.64)	0.22	63	7.75 (7.38,8.11)	0.19	3.53 (2.97,4.09)	<.001	2.22
10	199	5.16 (4.93,5.39)	0.12	120	6.57 (6.29,6.84)	0.14	1.41 (1.05,1.76)	<.001	0.88

LMHA	Pre-Test *N*	Pre-Test Mean (95% CI)	Pre-Test SE	Post-Test *N*	Post-Test Mean (95% CI)	Post-Test SE	Score Change (95% CI)	*p*-value	Cohen's D
11	293	4.73 (4.52,4.95)	0.11	228	6.36 (6.05,6.68)	0.16	1.63 (1.25,2.01)	<.001	0.76
12	106	4.96 (4.70,5.22)	0.13	60	6.97 (6.53,7.4)	0.22	2.00 (1.50,2.51)	<.001	1.29
13	167	4.72 (4.47,4.97)	0.13	170	7.38 (7.09,7.67)	0.15	2.65 (2.27,3.04)	<.001	1.47
14	212	4.16 (3.94,4.37)	0.11	205	6.83 (6.59,7.08)	0.12	2.68 (2.35,3.00)	<.001	1.59
15	141	4.09 (3.86,4.31)	0.12	148	6.87 (6.60,7.15)	0.14	2.79 (2.43,3.14)	<.001	1.80

Note. LMHA = Local Mental Health Authorities. Pre-test occurred prior to the education session. Post-test occurred following the education session. Scores range: 0 – 10.