Comparison of Virtual and In-Person Tobacco Treatment Specialist Training

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Abstract

Purpose: There is limited research comparing virtual and in-person tobacco treatment specialist (TTS) training. As a result of COVID-19, the Duke-UNC (University of North Carolina) Tobacco Treatment Specialist Training Program (Duke-UNC TTS) transitioned from an in-person to a virtual format, allowing for a comparison of these two training formats.

Methods: We conducted an observational study comparing Duke-UNC TTS attendance and evaluations at three courses provided in person in 2019 with the same three courses provided virtually in 2020.

Results: The transition from in-person to virtual format was associated with more than a doubling of course attendance. The in-person format enrolled 112 participants; the virtual format enrolled 232 participants, \( p < 0.05 \). The virtual format was associated with more than two times the proportion of out-of-state participant attendance. The in-person format enrolled 22.3\% out-of-state attendees; the virtual format enrolled 52.8\% out-of-state attendees, \( p < 0.05 \). Course evaluations showed similar quality scores for measuring perceived knowledge acquisition and course satisfaction.

Conclusions: The virtual TTS training format had higher attendance and wider geographical reach without significantly losing quality than the in-person training format. Accordingly, TTS training programs should consider the continued delivery of training through interactive virtual formats to increase accessibility for participants.
defined by the Association for the Treatment of Tobacco Use and Dependence (ATTUD).5

Before the COVID-19 pandemic, the Duke-UNC TTS training course comprised four full training days (9 h/day) and, like most TTS courses, was offered exclusively in an in-person format. Between March and June 2020, the Duke-UNC TTS team redesigned its in-person program to provide training in a virtual format. To make this change, the TTS leadership team consulted with experts in virtual learning, sought out best practices in adult education, and developed procedures to provide unencumbered access to virtual course materials. Using an evidence-based learning approach, the resulting TTS course incorporated a blended format of asynchronous (self-paced) content and synchronous (live) content. Asynchronous video-based content was included to allow greater scheduling flexibility and overall reduced costs for learners, many of whom were busy healthcare professionals.7

The redesigned Duke-UNC TTS course used the flipped classroom model, which entails students learning foundational course material prior to virtual class sessions via video modules and using class time for more dynamic content.8 Live course sessions—consisting of interactive lectures, small group breakout sessions, and tobacco treatment visit demonstrations—were presented in half-day sessions using the Zoom videoconferencing platform. Course materials were housed on Sakai, a learning management system that served as an online hub for participants to access video modules, communicate with course instructors, and log progress throughout the course (Figure 1). This paper is the first we are aware of to report outcomes of the transition of TTS training from an in-person to a virtual format.

Methods

Data Collection and Course Evaluation

All outcomes were assessed during three Duke-UNC TTS courses offered in an in-person format in 2019, as well as the same three courses offered virtually in 2020. Study data comprised participant demographics collected during course registration and a 15-item post-course evaluation. Comparisons between in-person and virtual formats were conducted using the chi-square (χ²) statistic and Fisher’s exact test. Statistical significance was determined using an alpha level (α) of 0.05. Descriptive statistics assessed learner demographics, encompassing racial and geographic distributions in in-person and virtual training scenarios.

Results

Over the 2-year assessment period (2019 and 2020), 346 participants attended the Duke-UNC TTS training program. Significantly more participants were from the virtual

Fig. 1. Composite screenshot of Sakai course portal features.
than the in-person format (virtual format 232 participants [68%], in-person 112 participants [32%]; $\chi^2 = 83.2 = 72, p < 0.05$). The proportion of out-of-state (i.e., participants not residing in North Carolina) participants was also significantly greater in the virtual format (out-of-state participants virtual 122 of 232 [52.8%] vs. out-of-state in-person 25 of 112 [22.3%]; $\chi^2 = 28.27, p < 0.05$). In 2019, program participants resided in six states, whereas in 2020, program participants resided in 24 states (Figures 2A and 2B). In addition, the number of participants from locations outside of the U.S. increased from one participant in 2019 to eight participants in 2020. In 2019, no participants identified as American Indian, whereas in 2020, 13 identified as American Indian. Our analysis, as shown in Figure 3, indicated that in-person and online training sessions were predominantly attended by individuals identifying as White with minor numeric differences in racial composition. Online sessions attracted a slightly larger number of trainees from diverse racial categories although the numbers were too small for statistical comparison.

Upon course completion, 82% of all registrants ($n = 285$) completed the course evaluation. Scores are presented for each format in Table 1. Overall, the participant rating for the course was not significantly different between formats, with a mean score of 95.3% for the in-person training and 91.5% for virtual training. Both the virtual (92%) and in-person (93%) delivery agreed that “The information covered in the course prepared me well to offer treatment to people who use tobacco.” Several individual items appeared to favor in-person training, such as fewer virtual participants agreeing that the length of the training course was sufficient (76%) compared to in-person (88%), and fewer virtual participants agreed that “After attending the course, I feel prepared to offer treatment to people who use tobacco” (87%) vs in-person (96%).

**Discussion**

The transformation of a TTS training program from an in-person to a virtual format resulted in significant increases in enrollment and geographical reach with continued high overall satisfaction. Expanding the reach of TTS training is crucial as it equips more healthcare professionals to work in clinics, hospitals, and other healthcare institutions. Patients who receive treatment provided by trained providers appear to achieve better outcomes. Increased reach helps improve program connection. Connectivity and technical issues have been cited as impediments to the delivery of virtual education.

Course faculty had to be trained to create engaging web-based materials, lead a course on Zoom, and use the Sakai learning management system, all of which required faculty development and ongoing support. Similarly, course participants had to possess at least minimal technical competence to access the web-based Sakai platform and use Zoom for interactive course components, and administrative staff had to be available for ongoing support.

Study findings are limited by conditions common to observational studies; participants were not randomized, and, as such, external variables other than course format might have impacted study outcomes. For example, it is conceivable that the course simply increased in size and scope over time and that outcomes suddenly improved from 2019 to 2020 or that the presence of the COVID-19 pandemic in 2020 led to an increased demand for online health education. These outcomes seem unlikely; however, because program growth was relatively flat from 2017 to 2019, and medical staff at most institutions had less time to devote to many extracurricular training activities due to COVID-19 constraints. There is a potential for virtual training to attract more racially diverse learners. Although our virtual program did not demonstrate substantive changes in racial diversity, a virtual platform holds the possibility of targeting groups with a desired racial or ethnic background without geographic barriers. Additionally, the study evaluated subjective (not objective) measures, specifically perceived knowledge gain and participant satisfaction. The TTS course likely benefited from the increased interest in web-based courses, as there was a dramatic increase in Zoom and other virtual meetings during 2020.
Conclusions
During the COVID-19 pandemic, the Duke-UNC TTS program was able to pivot to a virtual format. Outcomes show that TTS training in a virtual format was associated with significantly higher enrollment and greater geographic reach with continued high quality. Additional research on best practices in virtual TTS training could increase our understanding of how TTS training programs can continue fostering engagement and nurturing learning for future TTSs.

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