

Changing Attitudes about Trauma-Informed Care Using an Online Module

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ABSTRACT

Despite high rates of children being exposed to potentially traumatic events, there are many barriers towards getting settings (e.g., schools) to adopt the principles of trauma-informed care (TIC). This is an adaptive approach that emphasizes the need for settings to be universally accommodating to children who have experienced trauma. Training providers on TIC is essential for shifting attitudes and instantiating these principles into practice. Given the logistical difficulties of in-person training, a free online training module using SAMHSA's trauma-informed care model was developed and deployed. Results from the study of this module suggest that the training was effective in significantly shifting participants' attitudes towards trauma-informed care. Additionally, these gains were seen regardless of workplace experience, and initial racial differences were resolved with similar post-test scores across demographic backgrounds. These findings suggest the viability of digital training as a low-cost option for disseminating trauma-informed care values.

Keywords: Trauma-Informed Care, Online Training, SAMHSA, Dissemination

Children face a wide range of negative life experiences that can result in trauma-related distress and dysfunction (Finklehor et al., 2007). One in seven children experience child maltreatment (Fortson et al., 2016), and even more experience other



forms of potentially traumatic events (Substance Abuse Mental Health Association [SAMHSA], 2014). Discrete life events (e.g., a car accident, medical procedure) and continuous life experiences (e.g., neglect) can negatively affect a child's life domains. It is not uncommon for children to experience multiple potentially traumatic events (Finkelhor et al. 2009).

RESPONSES TO TRAUMA

Children's responses to potentially traumatic events vary greatly and frequently include a broad range of dysfunction and psychological distress, such as depression, anxiety, externalizing behaviors, and a decline in adaptive functioning (Copeland et al., 2018; Price et al., 2013). Children who are in school who have experienced abuse and neglect are more frequently referred for disciplinary issues (Fantuzzo et al., 2011) and often perform poorly in a range of educational outcomes (e.g., grade retention) relative to their non-victimized peers (Romano et al., 2015). Socially, children who have experienced potentially traumatic events are also likely to engage in social withdrawal and aggressive behaviors (Guerra, Huesmann, & Spindler, 2003).

Multiple traumatic experiences can have a compounding effect on negative consequences (Finkelhor et al., 2011), and these effects can develop into adulthood (Norman et al., 2012). Despite these patterns, the specific responses – including a potential absence of distress – are difficult to predict in any one child, particularly outside of clinical settings.

This wide variation in responses has demonstrated the strength of ecological frameworks when developing ways to support traumatized children. Because the impact of stressful events on children is abated or exacerbated based on the people and systems around a child, advocates have focused on developing interventions that impact multiple layers of a child's context. In particular, Bronfenbrenner's ecological model has become an enduring framework for understanding all of the ways children are impacted by the systems around them (Bronfenbrenner, 1986). Bronfenbrenner's later work emphasized social processes as drivers in how children understand the world; different contexts and social interactions can alleviate stress and foster resilience for those who are experiencing hardship (Harney, 2007). Because of the power in these relationships and interactions, stakeholders have prioritized attitudes and practices that attend to the needs of survivors, and they often call this work trauma-informed care.

WHAT IS TRAUMA-INFORMED CARE?

Trauma-informed care (TIC) describes the application of what is known about trauma to make all spaces accessible regardless of a person's trauma history; further, those working to instantiate TIC are actively reducing the impact of trauma and the risk of future victimization (SAMHSA, 2014). This concept of TIC has fueled substantial work in a range of disciplines over the past two decades with calls to expand TIC practices across disciplines (Champine et al., 2018; Overstreet & Chafouleas, 2016). Although the definition of trauma-informed care has been at times debated (Champine et al., 2019), SAMHSA describes TIC as producing policies and practices

that recognize the widespread presence of trauma, the various ways in which it manifests, and the need for a setting to “actively resist re-traumatization” (p. 9, SAMHSA, 2014). This conceptualization and its principles are meant to be adaptable across settings and disciplines, and the goal of trauma-informed care is to overcome the barrier of trauma and symptom identification by universally disseminating programming that accommodates individuals regardless of trauma history (SAMHSA, 2014). TIC, in addition to targeted and individualized approaches when necessary, provides support for a wide range of children.

The integration of trauma-informed care into a setting requires these values to be intertwined into the policies and behaviors of organizations and their members. Of particular necessity is for those leading these spaces (e.g., schools) to be educated on the facets of trauma-informed care. Research suggests early intervention, and school practitioners feel unprepared to support children who have experienced trauma (Corr, et al., 2019; Corr & Santos, 2019; Corr et al., 2020). Additionally, there are limited and insufficient opportunities for content about trauma and trauma-informed care in education preparation programs (Corr, et al., 2019). The need for a well-trained workforce has been identified by SAMHSA as an “essential” feature of providing trauma-informed practices (SAMHSA, p. 13, 2014) with the belief that an informed staff reduces negative outcomes for children.

Attitudes about Trauma-Informed Care

Given this need, there has been a growing interest in increasing the number of TIC training opportunities. These training opportunities are meant to catalyze organizations into adopting TIC practices. Although sometimes requiring extensive training, when done well, efforts to integrate TIC show capacity building in organizational (Palfrey et al., 2019), educational (Fondren et al., 2020), and multisystem efforts (Damian et al., 2019). A recent systematic review of 23 TIC organizational training sessions suggests that this form of intervention is beneficial in changing both the attitudes and behaviors of participants (Purtle, 2018). Still, the connection between changes in trauma-informed attitudes and behaviors has yet to be fully parsed out. Although behavior change is complex (Ajzen, 1991), these trainings focus on increasing participants' knowledge of and attitudes towards TIC based on the belief that these components are essential in driving behavior change (Baker et al., 2016). Positive attitudes toward trauma-informed care are an essential, albeit insufficient on their own, component to producing behaviors that reflect TIC values. A systematic review of TIC training opportunities suggests that TIC training opportunities are potentially beneficial in changing both attitudes and behaviors (Purtle, 2018), but the connection between changes in trauma-informed attitudes and behaviors has yet to be fully parsed out. However, the extant evidence in the broader study of attitudes and behaviors suggests the link is particularly strong, especially when a person is confident in their attitude (Glasman & Albarracin, 2006). Existing research suggests negative attitudes can become a barrier to behavior change in educational settings (Baker, 2010). In sum, shaping the attitudes of individuals is a critical first step in facilitating the adoption of TIC behaviors and TIC systems.

RESEARCH PURPOSE

The purpose of the current research study is to explore whether a free, online, self-paced training module elicits favorable differences in participants' TIC attitudes. Specifically, we examined the following research questions:

1. Do trauma-informed attitudes differ based on participants' involvement in the TIC module?
2. Based on demographic information, in particular, race/ethnicity and career length, are there differences in how TIC attitudes differ after involvement in the TIC module?

METHODS

Given the limited number of free, easily accessible trauma-informed care training for a wide range of professionals, the OneOp (formerly known as the Military Family Learning Network) developed an online asynchronous TIC module to train adults about the components necessary to support children (B-18) who have experienced trauma. The module is titled "Childhood trauma: understanding, supporting, and preventing" (insert link to module). The module includes objectives related to: 1) understanding the prevalence and impact of trauma, a manifestation of trauma in young children; 2) providing trauma-informed supports; and 3) preventing future trauma.

Module Design

Using principles from adult learning theory (Merriam et al., 2007) alongside of the framework identified by The National Child Traumatic Stress Network (Gerrity & Folcarelli, 2008), the TIC training module was designed to offer practitioners an overview of common aspects of trauma-informed care, while defining components necessary to appropriately support children who have experienced trauma. The National Child Traumatic Stress Network's framework describes the impact of child trauma as an avoidable result of multiple factors and that it requires prevention and intervention efforts at all levels, including individual, family, setting, and policy levels (Gerrity & Folcarelli, 2008). Adult learning theory posits that it is critical to create a relaxed, orchestrated, and multi-sensory learning environment so that active adult learners can engage in the learning process (Meier, 2000). According to Trivette et al. (2009), an orchestrated environment includes imagery, readings, instructional videos, and peripherals (posters and visual displays), while active learning includes vignettes, role playing, practice exercises, group activities, and journal writing. The TIC module series included both orchestrated (i.e., images, videos, and visual displays) and active learning opportunities (i.e., vignettes, audio, and video components) to enhance the learning experience and meet the needs of varied learners. Finally, interactive activities (e.g., drag and drop, click to learn more, true/false questions) allowed users to learn from the experience of the activity, in

which immediate automated feedback was provided. This asynchronous design afforded users the time needed to explore the additional resources provided for each unit in the module series based on their level of interest.

The TIC module was created in two versions: a research version and a non-research version. The TIC module (research version) was approved by the University of Illinois' IRB on January 6, 2020. While the content in the TIC modules was the same, participants who opted into the research version of the module consented to share their data for this research study and received a \$10 gift card. For participants of the non-research version of the module, their data was not included in the analysis for the current study. Finally, the TIC module was approved by the Illinois early intervention system. Therefore, all participants who completed the TIC module and who qualified professionally had the opportunity to receive continuing education units (CEUs).

Recruitment Procedures

For this research study, we used a snowball sampling plan to recruit participants. First, the TIC module was advertised through the Illinois Early Intervention Training Program (EITP). EITP is responsible for developing and implementing training opportunities for multidisciplinary professionals who work in the field of early intervention (e.g. speech speech-language pathologists, developmental therapists, occupational therapists, dietitians, social workers, etc.). Next, the (Masked) Early Intervention Training Program shared the training opportunities with colleagues through Facebook pages and in the monthly newsletters and communications. Additionally, a one-page flier about the TIC module was shared at conferences (Council for Exceptional Children, Division for Early Childhood, National Association of Young Children).

Participants and Research Procedures

Participants completed the TIC module (research version). The Attitudes Related to Trauma Informed Care scale (ARTIC-45-online) was administered pre- (n=282) and post-module (n=260) initial respondents before cleaning. Not all pre-module respondents corresponded to a post-module respondent and vice versa. There were 98 pre-module respondents without a post-module match, 55 post-module respondents without a pre-module match, and 177 respondents who completed the pre- and post-module ARTIC-35, for a total of 330 respondents. Of those participants, 94.24% were female, and 78.48% identified as White (See Tables 1 and 2 for more demographic information). In terms of employment, participants reported working in education/early intervention (77.88%, n = 257), healthcare (4.55%, n = 15), human services (8.18%, n = 27), or some other occupation (6.36%, n = 21). We also had participants report how long they had worked in this profession (See Table 3). Since the module was self-paced, participants' time between the pre- and post-module surveys ranged from 23 minutes to 8.5 months, with a median time between pre- and post-surveys of 4 days.

Table 1: Demographic Information of Participants (N = 330)

	Overall % (n)	White % (n)	Non-White % (n)
<i>Gender</i>			
Women	94.24 (311)	96.91 (251)	96.77 (60)
Men	2.42 (8)	2.32 (6)	3.23 (2)
Not reported	3.33 (11)	0.77 (2)	
<i>Education Level</i>			
Some college	2.73 (9)	3.09 (8)	1.61 (1)
Associate degree	2.42 (8)	2.32 (6)	3.23 (2)
Bachelor's degree	29.39 (97)	29.34 (76)	33.87 (21)
Some graduate school	10.30 (34)	10.42 (27)	11.29 (7)
Completed graduate school	52.42 (173)	54.83 (142)	50.00 (31)
Not reported	2.73 (9)		

Table 2: Race and Ethnicity Information of Participants (N = 330)

Race/Ethnicity	% (n)
White	78.48 (259)
Black/African American	6.67 (22)
Latinx	5.15 (17)
Asian	1.52 (5)
Native American/Pacific	
Islander	1.21 (4)
Other	4.24 (14)
Not reported	2.73 (9)

Table 3: Participants' Work Experiences (N = 330)

	Overall % (n)	White % (n)	Non-white % (n)
<i>Primary Job Setting</i>			
Human Services (Mental Health, Substance Abuse, Child Welfare)	8.18 (27)	6.95 (18)	14.52 (9)
Healthcare (Hospitals, Clinics, Community based Programs)	4.55 (15)	5.41 (14)	1.16 (1)
Education (Early Intervention, Schools, Academia)	77.88 (257)	81.85 (212)	72.58 (45)
Other	6.36 (21)	5.41 (14)	11.29 (7)

Not reported	3.03 (10)	0.39 (1)	
<i>Years in Profession</i>			
Less than 1 year	21.52 (71)	20.08 (52)	30.65 (19)
1 to 5 years	24.24 (80)	25.87 (67)	20.97 (13)
6 to 10 years	14.55 (48)	13.51 (35)	20.97 (13)
11 to 15 years	10.91 (36)	11.20 (29)	11.29 (7)
15+ years	25.76 (85)	28.96 (75)	16.13 (10)
Not reported	3.03 (10)	0.39 (1)	
<i>Prior Trauma Work Experience</i>			
Yes	62.12 (205)	64.09 (166)	62.90 (39)
No	13.94 (46)	15.06 (39)	11.29 (7)
Unsure	20.91 (69)	20.46 (53)	25.81 (16)
Not reported	3.03 (10)	0.39 (1)	
<i>Service Region</i>			
Urban (population greater than 50,000)	36.97 (122)	33.20 (86)	58.06 (36)
Suburban (population 2,500 to 50,000)	44.85 (148)	47.88 (124)	38.71 (24)
Rural (population less than 2,500)	14.85 (49)	18.15 (47)	3.23 (2)
Not Applicable	3.33 (11)	0.77 (2)	

Instrument

The ARTIC-35 scale to measure trauma-informed attitudes. The ARTIC-35 is an established measure that has well-demonstrated psychometric properties as assessed by the California Evidence-Based Clearinghouse for Child Welfare (California Evidence-Based Clearinghouse for Child Welfare, 2021). The ARTIC-35 demonstrates strong reliability and validity, and reviews of its psychometric properties have been documented (Baker et al., 2016; Baker et al., 2020).

The five main subscales of the ARTIC include (a) underlying causes of problem behavior and symptoms (“Students’ learning and behavior problems are rooted in their history of difficult life events”), (b) responses to problem behavior and symptoms (“It’s best to treat students with respect and kindness from the start so they know I care“), (c) on-the-job behavior (“Being very upset is normal for many of the students I serve), (d) self-efficacy at work (“I have what it takes to help my students), and (e) reactions to the work (“The fact that I’m impacted by my work means that I care”). The supplementary subscales include (f) personal support of TIC and (g) system-wide support for TIC (Baker, 2015). Not all participants worked in organizations that have already implemented TIC to some degree. Therefore, for purposes of this analysis, the items related to the supplementary scales (subscales f and g) were not included in the current analysis; the remaining items comprise the

ARTIC-35. Of the 35 items on the scale, 19 of them are reverse coded. After recoding, pre- and post-module ARTIC-35 sum scores, which can range from 35 to 245, were calculated for all participants. All items on the ARTIC-45 are scored on a scale of 1 to 7, with higher scores suggesting a more favorable TIC attitude and lower scores suggesting an unfavorable TIC attitude.

Data Processing

To determine if attitudes toward TIC differed after taking the module, participants were asked to complete the ARTIC-45 online both pre- and post-module. Several post-module respondents accidentally took the survey twice; in these instances, we determined to only keep their first post-module response. Several instances of respondents did not complete any part of the ARTIC-35. These respondents were also dropped. These restrictions left 275 pre-module respondents and 232 post-module respondents who completed at least some of the ARTIC-35. A small proportion of the remaining sample of respondents (15 pre-module respondents and 13 post-module respondents) did not complete the full ARTIC-35. An inspection of the data showed that there were no meaningful differences between those respondents not completing the pre-module survey vs. those not completing the post-module survey. In these cases, missing responses were imputed using a classification and regression tree (CART) approach via the mice package in R (van Buuren & Groothuis-Oudshoorn, 2012; van Buuren, 2018). This approach was chosen to maintain the discrete nature of the response scale for the items. To avoid loss of information, the CART approach was also used to impute missing values for demographic variables. Preliminary inspection showed that imputation did not significantly alter estimated values in the analysis, nor did it affect model decisions.

Data Analysis Plan

To determine if there were any differences in pre- and post-module ARTIC-35 scores, a hierarchical linear modeling (HLM) procedure was used. This approach was used to account for the within-person variability inherent in a repeated-measures design. Specifically, we can treat the repeated responses (i.e., the pre- and post-module responses) as nested within individuals. In using HLM, we used a model-building approach by first including a pre/post-module indicator predictor and subsequently including demographic variables into the model.

RESULTS

Once the analysis sample was determined, a hierarchical linear modeling (HLM) procedure was used to see if there was a difference in pre- and post-module ARTIC-35 scores; this was done to account for the within-person variability inherent in a repeated-measures design such as this. First, as an initial model, we fit the random-intercept model (i.e., an unconditional model)—Model 1 in Table 4 (N = 330). This model shows that between-person variance alone accounts for 48% of the total variation in the scores ($\rho\text{ICC} = .48$), justifying the use of HLM. Next, we fit a model (Model 2) including a predictor indicating whether a given score was pre- or post-

module. We find that this model explains the score variation significantly better than Model 1, $\chi^2(1) = 107.34$, $p < .001$.

Table 4: Model Fit Statistics for HLM Model of ARTIC-35 Sum-Scores

Model	Cond. ICC	AIC	Deviance	χ^2 - difference	df	p
(1) Unconditional	.48	4562.5	4556.5	-	-	-
(2) Pre-post	.63	4457.2	4449.2	107.34	1	< .001
(3a) Pre-post + White	.63	4452.8	4440.8	8.36	2	.02
(3b) Pre-post + Job Setting	.62	4461.8	4441.8	7.39	6	.29
(3c) Pre-post + Age Group	.63	4465.8	4445.8	3.36	6	.76
(3d) Pre-post + Service Setting	.63	4459.9	4447.9	1.29	2	.53
(3e) Pre-post + Years in Profession	.62	4469.4	4445.4	3.75	8	.88
(3f) Pre-post + Gender	.62	4459.4	4447.4	1.83	2	.40
(3g) Pre-post + Education Level	.61	4462.9	4438.9	10.27	8	.25
(3h) Pre-post + Prior Trauma Work	.63	4462.0	4446.0	3.18	4	.53
(3i) Pre-post + Service Region	.63	4464.2	4448.2	0.99	4	.91

To determine if the difference in scores can be partially attributable to any demographic factors, several competing models including those demographic factors and their interactions with the pre-post indicator were fit; overall fit information for these are provided in Table 4. Only the model including a predictor indicating racial identity (White vs. Non-white) and its interaction with the pre-post indicator (Model 3a) significantly improved fit over and above Model 2, $\chi^2(2) = 8.36$, $p = .02$. Furthermore, as the AIC statistic is smallest for Model 3a (AIC = 4452.8), Model 3a is chosen for further interpretation. Model parameters for Model 3a are shown in Table 5.

Table 5: Model 3a Parameter Estimates

Fix effects	Estimate	Standard Error	df	t	p
Intercept	191.11	2.96	443.15	64.58	<.001
Post-module	21.40	2.80	217.72	7.64	<.001
White	7.44	3.28	439.62	2.27	.024
White*Post-module	-8.10	3.09	215.75	-2.62	.009

In evaluating Model 3a, we tested a set of contrasts. To adjust p-values for effects due to multiple contrasts, we used the Holm-Bonferroni step-up procedure. First, we found a significant increase in ARTIC-35 scores after the module of 21.40 points for Non-whites, $t(225.54) = 7.63$, $p < .001$, and 13.30 points for Whites, $t(214.74) =$

10.15, $p < .001$. Next, we found that pre-module scores were 7.44 points higher for White participants than Non-whites, $t(443.03) = 2.27$, $p = .047$. We also found that there was not a significant difference between Whites and Non-whites in post-module ARTIC-35 scores, $t(443.03) = -0.19$, $p = .85$. Finally, we found that there was an average post-module increase of 17.35 points for all participants, $t(223.56) = 11.21$, $p < .001$. These results can be summarized as shown in Figure 1.

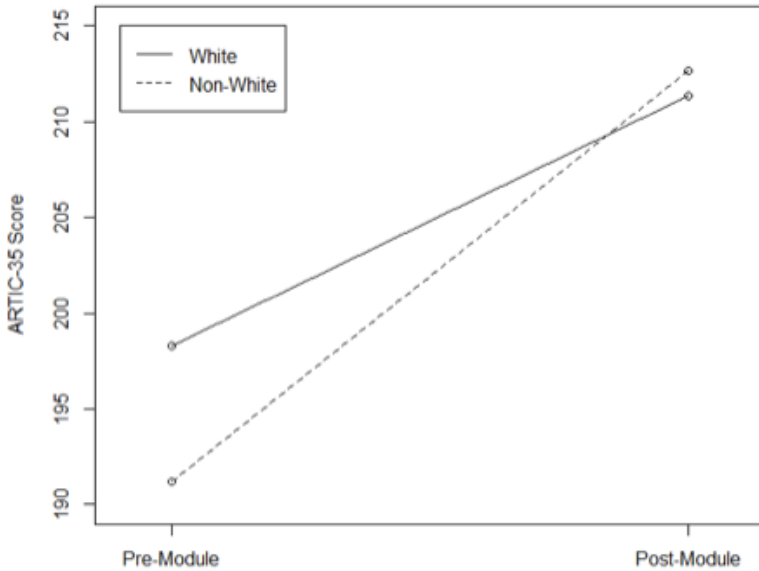


Figure 1. Pre- and post-module ARTIC-35 scores for White participants and participants of color.

DISCUSSION

Our first question for these data was whether trauma-informed attitudes differ following their engagement with the module. Upon completing the training, participants' trauma-informed attitudes improved by an average of 17.35 points, which is a moderately large effect, $d = 0.80$. These types of “free, online, self-paced” learning opportunities could have the potential to positively impact trauma-informed attitudes for large groups of people in a relatively quick timeline.

Although this will not necessarily change practice, an individual adopting a trauma-informed attitude can be a critical first step before changing their practice. Future research should examine ways to embed these learning opportunities into pre- or in-service preparation programs for teachers, physical therapists, occupational therapists, pediatricians, and social workers. There can be powerful shifts in behavior when individuals consider their organization's norms (Perkins, 2003), and stakeholders can utilize this to exert change toward trauma-informed care. This can

be magnified when organizations consider the policies and texts of their institution as well (Pence, 2021).

The second goal of this study was to determine whether personal aspects of participants were associated with different patterns of score differences. Specifically, we examined whether race and time engaged in their field of work were related to score differences in their attitudes due to work that suggests these are relevant factors to attitudes related to TIC (Kenny et al., 2014). Concerning race, we found important differences between participants who were White and people of color. For instance, White participants were reported on average higher pre-module trauma-informed attitudes than participants of color. We did not have an a priori belief that there would be a difference at the start for each group, and our goal was to determine whether the module was effective across demographics. This difference between the pre-scores is potentially the result of how racism and inequitable resources in the education system restrict access to information disproportionately across groups (Harper et al., 2009). The origins of these initial differences are beyond speculation given the data available, but, importantly, the post-module test scores for both groups were significantly higher than pre-module test scores, showing the module ultimately accomplished its goal. That the post-module scores were statistically similar is an interesting finding suggesting the module may help to offset any pre-existing information imbalances found between majority and minority groups.

Notable results also emerged from the analyses focused on the length of time someone had been engaged in their field of work (e.g., education, healthcare). There was a need to explore whether this training would be sensitive to a wide range of experience levels; the saliency of trauma-informed care has increased in past years, and the recency of general training may diminish the potential gains by taking the module. Based on these results, it appears that participants of all experience levels can benefit from the module; specifically, there appear to be similar pre-test scores and gains made regardless of how long they have been in their field.

Limitations

There are at least four important limitations to this work. First, the trauma module series was designed to be free, online, and self-paced. Therefore, participants completed the module series at various lengths of time. Time of completion for individual participants ranged from 23 minutes to eight months. While we know the time of completion for each participant, we do not know if participants accessed additional training or content that would impact their trauma-informed attitude during that time.

Second, while analyses included all who completed some of either the pre- or post-module survey, only 177 completed both. This could be for a myriad of reasons, including the participant had not finished the training or they used two different email addresses for the pre- and post-tests. While our research design accounted for this, future research should explore the persistence of this potential change in attitudes over time. Certain individual and setting factors likely play a role in how long an individual retains these attitudes, and these questions cannot be answered with this study.

Third, it is important to note that our conclusions regarding racial differences must be carefully scrutinized in future research due to the limits of our sample size and its diversity. It is essential to recognize the role that racial discrimination plays in educational systems, and we hope to emphasize the potential democratization of education through free, web-based trainings. Our goal in examining race was to see whether the module was effective broadly, and this work should not be interpreted as an evaluation of how different groups learn.

Finally, while the differences observed between pre- and post-test scores were large, this does not necessarily mean that real change in attitudes or practice occurred. For example, for change to be assessed, the design should include a control group that does not receive the training module. Furthermore, even using another design, it is possible that the participants were simply better informed about the vocabulary used in this area. Future study may help to disentangle these other possibilities. Notwithstanding these limitations, our findings suggest that attitudes about trauma-informed care can be changed for the better through an online, self-paced training.

CONCLUSION

Trauma-informed attitudes bring to the forefront the belief that trauma can pervasively affect an individual's well-being, including physical and mental health. For professionals, having a positive trauma-informed attitude reinforces the importance of (a) acquiring trauma-specific knowledge and skills to meet the specific needs of clients, (b) recognizing that individuals may be affected by trauma regardless of its acknowledgment, (c) understanding that trauma likely affects many clients who are seeking behavioral health services, and acknowledging that organizations and providers can retraumatize clients through standard or unexamined policies and practices. Given the potential for significant changes in providers' attitudes and behaviors, an online module was created to provide free, self-paced training on the essential components of TIC.

Although the tenets of TIC can be learned and applied across settings, members from different occupations may benefit from being trained using examples and foci specific to their field of study. Future research should examine whether the framework of TIC can be taught universally or if the changes in attitudes and behavior are enhanced by having more tailored delivery systems. Understanding the level of specificity needed to engender change will be important in creating cross-systems change.

Taken together, our results highlight the ways a free, online training is positively correlated with more trauma-informed attitudes. Length of career experience did not explain the gains made by participants who completed the TIC training module, and this furthers initial evidence that previous TIC training may not inhibit the effectiveness of additional training (Liang et al., 2020). Additionally, increases were observed in participants' TIC attitudes regardless of race, but the actual amount of increase in TIC attitudes was different for Whites and people of color. Participants who identified as White had a higher baseline attitude score, whereas participants of color gained more in the attitudinal score pre-post than participants who identified as White. This further reifies that initial racial differences in TIC attitudes do not inhibit

the effectiveness of TIC training (Kenny et al., 2017). Continued efforts to understand and expand on changing trauma-informed attitudes will help to foster innovative ways to prepare multidisciplinary professionals who not only understand trauma and trauma-informed care but are capable of reducing the incidence, frequency, and harmful sequelae of childhood trauma (Council for Exceptional Children, 2018; Division for Early Childhood, 2016).

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/07495978\(91\)90020-T](https://doi.org/10.1016/07495978(91)90020-T)
- Baker, C. N., Brown, S. M., Overstreet, S., & Wilcox, P. D. (2020). Validation of the Attitudes Related to Trauma-Informed Care Scale (ARTIC). *Psychological Trauma: Theory, Research, Practice, and Policy*.
- Baker, C. N., Brown, S. M., Wilcox, P. D., Overstreet, S., & Arora, P. (2016). Development and psychometric evaluation of the attitudes related to trauma-informed care (ARTIC) scale. *School Mental Health*, 8(1), 61-76.
- Baker, C. N., Kupersmidt, J. B., Voegler-Lee, M. E., Arnold, D. H., & Willoughby, M. T. (2010). Predicting teacher participation in a classroom-based, integrated preventive intervention for preschoolers. *Early Childhood Research Quarterly*, 25(3), 270-283.
- California Evidence-Based Clearinghouse for Child Welfare. (2021). Attitudes Related to Trauma-Informed Care Scale (ARTIC). Retrieved from <https://www.cebc4cw.org/assessment-tool/attitudes-related-to-trauma-informed-care-artic-scale/>
- Champine, R. B., Lang, J. M., Nelson, A. M., Hanson, R. F., & Tebes, J. K. (2019). Systems Measures of a Trauma-Informed Approach: A Systematic Review. *American journal of community psychology*, 64(3-4), 418-437.
- Champine, R. B., Matlin, S., Strambler, M. J., & Tebes, J. K. (2018). Trauma-informed family practices: Toward integrated and evidence-based approaches. *Journal of Child and Family Studies*, 27(9), 2732-2743.
- Copeland, W. E., Shanahan, L., Hinesley, J., Chan, R. F., Aberg, K. A., Fairbank, J. A., ... & Costello, E. J. (2018). Association of childhood trauma exposure with adult psychiatric disorders and functional outcomes. *JAMA network open*, 1(7), e184493-e184493.
- Corr, C., Miller, D., Spence, C., Kretzer, J.*, Marshall, A. A.*, & Mott, K.* (2019). “It’s never black and white”: Early interventionists’ experiences supporting abused children and their families. *Psychological Services*, 16(1), 103-110. doi: 10.1037/ser0000282
- Corr, C., & Santos, R. M. (2019). Jocelin: A “best-case” scenario for young children with disabilities who have experienced abuse? *Early Child Development and Care*, 189(1), 1-15. doi: 10.1080/03004430.2018.1538979
- Corr, C., Santos, R. M., Fowler, S. A., Spence, C. M., & Skubel, A.* (2020). Early interventionists’ perceptions of supporting families experiencing poverty. *Early*

- Child Development and Care*, 190(13), 2093-1205.
doi:10.1080/03004430.2018.1560276
- Damian, A. J., Mendelson, T., Bowie, J., & Gallo, J. J. (2019). A mixed methods exploratory assessment of the usefulness of Baltimore City Health Department's trauma-informed care training intervention. *American Journal of Orthopsychiatry*, 89(2), 228.
- Fantuzzo, J. W., Perlman, S. M., & Dobbins, E. K. (2011). Types and timing of child maltreatment and early school success: A population-based investigation. *Children and Youth Services Review*, 33(8), 1404-1411.
- Finkelhor, D., Turner, H., Ormrod, R., & Hamby, S. L. (2009). Violence, abuse, and crime exposure in a national sample of children and youth. *Pediatrics*, 124(5), 1411-1423.
- Finkelhor, D., Turner, H., Hamby, S. L., & Ormrod, R. (2011). Polyvictimization: Children's Exposure to Multiple Types of Violence, Crime, and Abuse. National survey of children's exposure to violence.
- Fortson, B. L., Klevens, J., Merrick, M. T., Gilbert, L. K., & Alexander, S. P. (2016). Preventing child abuse and neglect: A technical package for policy, norm, and programmatic activities.
- Fondren, K., Lawson, M., Speidel, R., McDonnell, C. G., & Valentino, K. (2020). Buffering the effects of childhood trauma within the school setting: A systematic review of trauma-informed and trauma-responsive interventions among trauma-affected youth. *Children and youth services review*, 109, 104691.
- Gerrity, E., & Folcarelli, C. (2008). Child traumatic stress: What every policymaker should know. Retrieved from *National Child Traumatic Stress Network website*: http://www.nctsn.org/nctsn_assets/pdfs/PolicyGuide_CTS2008.pdf.
- Glasman, L. R., & Albarracín, D. (2006). Forming attitudes that predict future behavior: A meta-analysis of the attitude-behavior relation. *Psychological bulletin*, 132(5), 778.
- Guerra, N. G., Rowell Huesmann, L., & Spindler, A. (2003). Community violence exposure, social cognition, and aggression among urban elementary school children. *Child development*, 74(5), 1561-1576.
- Harper, S. R., Patton, L. D., & Wooden, O. S. (2009). Access and equity for African American students in higher education: A critical race historical analysis of policy efforts. *The Journal of Higher Education*, 80(4), 389-414.
- Kenny, M. C., Vazquez, A., Long, H., & Thompson, D. (2017). Implementation and program evaluation of trauma-informed care training across state child advocacy centers: An exploratory study. *Children and Youth Services Review*, 73, 15-23.
- Liang, C. T., Liu, L., Rocchino, G. H., Kohler, B. A., & Rosenberger, T. (2020). Trauma-Informed Care Training for Educators: Some Preliminary Evidence. *Journal of Prevention and Health Promotion*, 2632077020972038.
- Meier, D. (2000). *The accelerated learning handbook: A creative guide to designing and delivering faster, more effective training programs*. New York: McGraw Hill.
- Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2007). *Learning in adulthood: A comprehensive guide* (3rded.). San Francisco, CA: John Wiley & Sons, Inc.

- Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLoS medicine*, *9*(11).
- Overstreet, S., & Chafouleas, S. M. (2016). Trauma-informed schools: Introduction to the special issue.
- Palfrey, N., Reay, R. E., Aplin, V., Cubis, J. C., McAndrew, V., Riordan, D. M., & Raphael, B. (2019). Achieving service change through the implementation of a trauma-informed care training program within a mental health service. *Community mental health journal*, *55*(3), 467-475.
- Pence, E. (2021). *The Institutional analysis: Matching what institutions do with what works for people* (pp. 329-356). Springer International Publishing.
- Perkins, H. W. (2003). The emergence and evolution of the social norms approach to substance abuse prevention. The social norms approach to preventing school and college age substance abuse: A handbook for educators, counselors, and clinicians, 3-17.
- Price, M., Higa-McMillan, C., Kim, S., & Frueh, B. C. (2013). Trauma experience in children and adolescents: An assessment of the effects of trauma type and role of interpersonal proximity. *Journal of anxiety disorders*, *27*(7), 652-660.
- Purtle, J. (2018). Systematic review of evaluations of trauma-informed organizational interventions that include staff training. *Trauma, Violence, & Abuse*, *15*24838018791304.
- Romano, E., Babchishin, L., Marquis, R., & Frechette, S. (2015). Childhood maltreatment and educational outcomes. *Trauma, Violence, & Abuse*, *16*(4), 418-437.
- Substance Abuse and Mental Health Services Administration. (2014). SAMHSA's concept of trauma and guidance for a trauma-informed approach. *HHS Publication No.(SMA) 14-4884*.
- Trivette, C. M., Dunst, C. J., Hamby, D. W., & O'Herin, C. E. (2009). Characteristics and consequences of adult learning methods and strategies [Winterberry Research Syntheses, Vol. 2, Number 2]. Asheville, NC: Winterberry Press.
- van Buuren, S. (2018). *Flexible Imputation of Missing Data*. (2nd edition). Boca Raton, FL: Chapman & Hall/CRC.
- van Buuren, S., & Groothuis-Oudshoorn, K. (2011). mice: Multivariate imputation by chained equations in R. *Journal of Statistical Software*, *45*(3), 1-67.

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