



# Implementing Trauma Screening, Brief Intervention, and Referral to Treatment (T-SBIRT) within Employment Services: A Feasibility Trial

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## Highlights

- Presentation of a trauma-responsive screening and referral protocol.
- Feasibility study of a trauma-responsive screening and referral protocol within employment services.
- Discussion of the relevance of trauma-responsive screening and referral for community psychology.
- Discussion of the relevance of trauma-responsive screening and referral for public health.
- Transitioning from trauma-informed to trauma-responsive practice frameworks.

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**Abstract** Research suggests that low-income adults accessing employment services have experienced high levels of trauma exposure and associated consequences. Moreover, the health-related effects of trauma undermine employment and employability. A trauma-informed protocol—trauma screening, brief intervention, and referral to treatment or T-SBIRT—was therefore implemented within employment service programs serving low-income urban residents. To assess the feasibility of integrating T-SBIRT within employment services, five domains were explored as follows: suitability, acceptability, client adherence, provider adherence or fidelity, and intended outcomes. With a sample of low-income adults ( $N = 83$ ), the study revealed that T-SBIRT is suitable for employment service participants given high rates of trauma exposure (90.4% experienced two or more lifetime

traumas), along with high rates of positive screening results for post-traumatic stress disorder (48.8%), major depression (35.4%), and generalized anxiety (47.6%). Study participants appeared to find T-SBIRT acceptable as evidenced by an 83% acceptance rate. All participants accepting T-SBIRT services completed them, revealing strong client adherence. Provider adherence or model fidelity was high, that is, 98.5%. Finally, the majority of participants accepted a referral to a mental health care (i.e., 56.6%), and over three-quarters accepted a referral to any outside service including primary or mental health care. Implications of findings are discussed.

**Keywords** Trauma screening · Trauma-informed care · Employment services · Post-traumatic stress disorder · Feasibility

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## Introduction

Based on rapidly expanding insights into the scope and consequences of trauma exposure, trauma-informed care (TIC) has become an ascendant service framework across many disciplines including psychology, medicine, and social work (e.g., Layne et al., 2011). Reinforcing the point, the Substance Abuse and Mental Health Service Administration (SAMHSA) has articulated general guidelines for implementing TIC within multiple service sectors (Substance Abuse and Mental Health Services Administration, 2014). Building on SAMHSA's guidance, practitioners and researchers have begun to translate TIC principles into specific practices including screening, assessment,

and referral to treatment (Mersky, Topitzes, & Britz, In press). Consistent with this work, we developed a trauma screening, brief intervention, and referral to treatment (T-SBIRT) protocol that was designed to detect trauma exposure and symptoms and, as needed, refer adults to treatment or other services. Modeled after the original SBIRT, which addresses alcohol and drug misuse at the population level, T-SBIRT has two distinct purposes: (a) to help clients of health or social service systems generate insight into the extent and effects of their trauma exposure, and (b) to enhance their motivation to pursue healthcare services, particularly mental health care and related supports. Due to its brevity and uncomplicated design, T-SBIRT can be integrated into diverse settings such as behavioral and mental health treatment clinics, primary and specialty healthcare centers, criminal and juvenile justice facilities, and workforce development programs.

In the current study, we assessed the feasibility of implementing the T-SBIRT protocol within employment service programs. Research suggests that participation in employment services may lead to short-term improvements in income and employment but that gains typically fade over time (e.g., Redcross, Millenky, Rudd, & Levshin, 2011). Recent research also indicates that low-income adults seeking employment services suffer from high levels of lifetime trauma exposure and poor adult health, which in turn undermine long-term employability (Topitzes, Pate, Berman, & Medina-Kirchner, 2016). Therefore, it may be possible to address client barriers to long-term employability by augmenting employment programs with services designed to mitigate trauma effects. Accordingly, we integrated T-SBIRT into employment service programs in order to: (a) identify potential root causes of health-related impairments, that is, trauma; (b) improve access to physical, mental, and behavioral health care along with other supports; (c) introduce TIC principles and practices within employment services; and (d) improve program outcomes.

## Literature Review

Below, we review literature relevant to the current study. First, we describe employment programs serving job seekers at risk for long-term unemployment and summarize program evaluation results. Second, we review research linking trauma exposure to work outcomes. Third, we discuss several instances in which TIC principles and practices have been integrated into employment programming, and finally, we describe the details and history of T-SBIRT.

### *Employment Service Programs*

Employment service programs in the United States provide job development and placement services to various

groups of job seekers. Typically, these programs connect prospective employees with employers and local service agencies to promote sustainable employment among adolescents or adults at risk for long-term unemployment (Harper-Anderson, 2008). The most successful employment service programs appear to be those that develop robust connections with networks of employment partners and service agencies (Carlson et al., 2011).

Employment service programs vary across several dimensions. First, programs can enlist distinct service models, for example, a stepwise transitional jobs approach versus a rapid job development service. Second, programs can serve disparate client groups such as men re-entering a community upon return from prison or women with children seeking public financial aid. Aside from these distinctions, employment services can also differ according to the nature of the host agency, that is, public government agency versus private non- or for-profit organization. Regardless of the program model, clients-served or agency sector, the evidence primarily indicates that employment service programs produce mixed evaluation results, particularly in the United States (Kluve et al., 2019).

For example, one model of employment services, transitional jobs programs, provides hard-to-employ low-income job seekers with temporary subsidized employment, education, training, and support services. Designed to boost earnings and enhance job experience among non-custodial parents or adults without children, most transitional jobs programs aim to promote permanent unsubsidized employment within six months (Bloom, 2010). While these programs have been shown to improve outcomes such as short-term job placement and earnings (Redcross et al., 2011), evaluation results indicate that they often fail to facilitate long-term employment and income objectives (e.g., Bloom, 2010).

Reentry programming, another discrete category of employment services, often relies on transitional jobs models to link adults released from prison to living wage jobs. To attain their goals, these programs combine reach-in pre-release services such as educational supports delivered during the incarceration period, with post-release wraparound social services such as housing supports delivered after the period of incarceration. A meta-analysis published over a decade ago found that reentry employment services did not significantly reduce re-arrest or recidivism rates (Visher, Winterfield, & Coggeshall, 2005). A recently published evaluation generated more favorable results across several outcome domains including recidivism and employment, although certain outcomes remained unchanged such as hourly earnings (see Duwe, 2015).

Funded through Temporary Assistance to Needy Families (TANF), welfare-to-work programs serve custodial parents receiving public cash assistance and represent yet

another type of employment intervention (Falk, 2012). Aside from filling subsidized or unsubsidized job openings, work-eligible parents enrolled in welfare-to-work programming often participate in pre-employment or substitute employment activities such as secondary education, vocational training, community service, and job readiness. However, typically less than half of work-eligible program participants engage in job-related activities (Falk, 2012) due, for instance, to non-compliance or disability, and initial employment and earning gains among participants are often unstable (Wood, Moore, & Rangarajan, 2008).

Another category of employment service programs, supported employment, provides individuals who have diagnosed mental disorders or other disabilities with an array of job-related services (Modini et al., 2016). These include job recruitment and placement along with personal assessments, job training, and employment retention planning. In contrast to other employment service programs, evaluations suggest that supported employment programs in aggregate produce promising results. A recent meta-analysis indicated that these programs are associated with increases in employment rates, earnings, and hours worked (Marshall et al., 2014).

### *Trauma and Employment*

There are many reasons to explain the inconsistent performance of employment service programs in the U.S. For example, low-income program participants face many structural barriers to long-term employment, including the economy's loss of living wage, low-skilled jobs to automation and outsourcing (Autor & Dorn, 2013). If program participants are of minority ethnic/racial status, they often encounter systematic discrimination (Levine, 2012). In addition, the nature of many employment programs implemented in real-world settings undermines their effectiveness. To wit, programs that are brief, fail to engage employer partners, and/or lack comprehensive individualized client services often yield poor long-term results (Francis, 2013). Moreover, participants' risk factor profiles can prevent successful program completion and long-term job placement (Tyler & Berk, 2009).

To this last point, studies using samples representative of the general population have found that exposure to childhood adversity can lead to employment problems by way of health-related impairments (e.g., Liu et al., 2013). Reinforcing these insights with samples of low-income job seekers, two recently published studies revealed that exposure to childhood trauma and adversity such as physical or sexual abuse was significantly associated with long-term unemployment. Moreover, mental and/or behavioral health problems, for instance depression and substance abuse, helped explain associations between early trauma

and adult employment problems (Cambron, Gringeri, & Vogel-Ferguson, 2015; Topitzes et al., 2016).

### *Trauma-informed Care and Employment Services*

Given such results, select employment service programs are starting to integrate trauma-informed principles and practices into their service array. According to SAMHSA (2014), the principles of trauma-informed care include safety, collaboration, empowerment, peer support, and cultural sensitivity. TIC practices, according to scholars who operationalize trauma care principles, include the following: trauma- and cultural-sensitivity staff training; trauma screening, assessment, and referral to services; evidence-based trauma-responsive treatment services; and intersystem or interagency collaboration (e.g., Lang, Campbell, Shanley, Crusto, & Connell, 2016).

Two recently studied employment service programs infused their models with TIC principles and practices to good effect. The first, which delivered TANF services to caregivers of young children, combined financial empowerment training with trauma-informed peer support. The program extended over 28 weeks and reflected multiple trauma-informed principles and practices such as collaboration and peer support. In addition, the group support component of the program model incorporated trauma-informed practices from the well-validated Sanctuary Model<sup>®</sup>. The program evaluation, titled Building Health and Wealth Network Randomized Control Study, collected repeated measures up to nine months post-intervention from a low-income sample at risk for joblessness ( $N = 103$ ). Results indicated that the program conferred benefits across multiple domains. For instance, compared to members of a control group receiving services as usual, program participants reported: (a) improvements in depression symptoms, (b) better developmental outcomes for their children, and (c) higher earnings (Booshehri, Dugan, Patel, Bloom, & Chilton, 2018).

The second program provided modified supported employment services to military veterans with post-traumatic stress disorder (PTSD). Supported employment models typically offer incremental vocational rehabilitation services, also known as stepwise services, in combination with transitional job services to adults with mental disorders. However, the program under study followed an individual assessment, rapid placement, and support strategy. As such, it devoted resources early in the service period to competitive job attainment and development. It also provided individualized and comprehensive support services before, during, and after job placement. In addition, program staff collaborated closely throughout the service period with employer partners and mental health treatment providers. The model incorporated many TIC principles

and practices including interagency collaboration, client empowerment, and comprehensive trauma assessment and referral services. A randomized, multi-site clinical trial involving a sample of unemployed veterans ( $N = 541$ ) revealed that the program yielded positive effects on employment and earnings over an 18-month study period (Davis et al., 2018).

## T-SBIRT

The T-SBIRT protocol is a brief, standardized, semi-structured intervention that integrates trauma-informed principles and practices into its structure. By directly addressing trauma exposure and its effects, T-SBIRT aims to remove critical barriers to social service or healthcare access. The steps of T-SBIRT consist of the following elements: (a) screening for healthcare access and referring to healthcare services when indicated; (b) seeking permission to address stress and trauma; (c) assessing for stress and trauma exposure; (d) screening for post-traumatic stress symptoms; (e) asking open-ended questions about positive and negative coping strategies; and (f) reinforcing statements reflecting motivation to improve coping strategies such as help-seeking behaviors.

Requiring approximately 25 to 30 minutes to complete in the employment service context, the protocol culminates in a referral to mental health treatment or other services when indicated, along with instrumental and motivational strategies to support referral completion. T-SBIRT providers offer referrals when participants endorse trauma exposure along with any related effects such as one or more formal PTSD symptoms or one or more negative coping strategies. Referral procedures follow best practices; for example, appointments are made during T-SBIRT sessions, and common referral destinations include trauma counselors, primary care physicians, and housing support specialists.

Evident in the structure of T-SBIRT are hallmark TIC principles and practices such as client empowerment and choice, provider–client collaboration, and screening and referral. In fact, T-SBIRT providers work closely with referral partner agencies that offer well-validated services, including trauma-specific mental health interventions that have been shown to reduce PTSD symptoms. As such, T-SBIRT relies on interagency collaboration and evidence-based practices.

The T-SBIRT model has been implemented in multiple service contexts, including primary care clinic settings serving low-income patients from urban neighborhoods. Results from a feasibility study suggested that the protocol was suitable for and acceptable to the primary care patient sample ( $N = 112$ ). Furthermore, patient adherence rates (i.e., compliance) approached 100% while provider adherence rates (i.e., fidelity) reached 97%. Finally, 63% of the

sample accepted a referral to a behavioral or mental health treatment provider (Topitzes et al., 2017). These promising results motivated additional T-SBIRT trials, including the current study.

## Procedures

In this study, the authors implemented T-SBIRT within two employment service programs. Located in a large metropolitan area in the Upper Midwest region of the U.S., each program serves low-income adults at risk for chronic unemployment. The two programs, which are small and privately funded, provide men and women with job readiness training, ongoing support services, and individualized job placement over a period of several weeks. While they do not formally follow a transitional jobs model, the programs collaborate with employer partners to place program participants in suitable “stability” or “temporary” employment. According to each model, the initial job position should evolve into long-term work that provides a living wage.

The first and last authors introduced T-SBIRT services to program participants through regularly scheduled formal presentations. Subsequently, the authors and program staff conducted the T-SBIRT protocol with participants who selected into and consented to services. As the designer of the T-SBIRT protocol and a licensed clinician, the first author provided T-SBIRT training and technical assistance to the fifth author and to designated staff from the participating programs. Training consisted of six hours of didactic, modeling, role-play, and coaching exercises during pre-service sessions along with additional *in vivo* training during a service adjustment period. The development of and reference to a T-SBIRT integrity checklist guided role-plays during the pre-service and *in vivo* training periods. Providers continued to use the checklists during the actual service and study period to promote model fidelity. After T-SBIRT sessions, participants were asked to complete a study survey. Other than the first author, all providers of T-SBIRT services were pre-masters’ trained professionals.

## Feasibility Study Questions

The current study assesses the feasibility of implementing T-SBIRT within employment service programs. We explored five distinct yet related domains relevant to process evaluations and feasibility studies (Arain, Campbell, Cooper, & Lancaster, 2010). The following research questions correspond to each of these five domains:

1. Is T-SBIRT suitable for clients of employment services?
2. Is T-SBIRT acceptable to or tolerable for clients of employment services?

3. Do clients of employment services adhere to or comply with T-SBIRT services?
4. Do providers of employment services adhere to T-SBIRT protocol steps, that is, comply with model fidelity, when delivering T-SBIRT services?
5. Does T-SBIRT promote intended outcomes, that is, referral acceptance, when implemented within employment services, and what factors potentially predict mental health service referral acceptance?

## Method

### Research Design

To address the study questions, we used a non-experimental research design, gathering data on a T-SBIRT intervention group only. The authors and staff devoted approximately three months to implementation and monitoring prior to data collection, that is, service adjustment period. During the study phase, we ascertained the number of eligible participants from participating agency records. Providers completed integrity checklists when implementing T-SBIRT services, and at an immediate post-intervention time point, clients completed a self-report study survey. The survey, which is not customarily administered along with the T-SBIRT protocol, required 15 to 30 minutes to complete and included questions about mental and physical health (e.g., depression, anxiety, and global mental and physical health).

### Sample

The convenience sample for the study consisted of adults receiving services from one of the two employment service programs described above ( $N = 83$ ). After 100 employment service recipients learned of the opportunity to participate in the T-SBIRT protocol through a formal presentation, 83 selected into T-SBIRT services during the study period (October 2017 through October 2018). Program staff scheduled T-SBIRT sessions, which took place onsite.

Of the full sample, 33.7% were women; 66.3% were male; and 0% identified with a different gender category. Study participants ranged in age from 18 to 63 and averaged 36.1 years of age. The majority, 78.3%, identified as Black American, while 9.6% identified as White. The remaining 12.1% listed Other, American Indian, or Asian. Of the total sample, 3.6% marked Hispanic for ethnicity. Nearly two-thirds of the sample reported earning less than \$5,000 annually, and 92.4% reported a yearly income of less than \$20,000. About 20% of the sample completed some high school education or less; 36.6% earned a high

school diploma or its equivalent; 26.8% reported completing some college; and only 17.1% earned an associate's degree or higher. Finally, 67.5% of the sample reported having at least one biological child, and these parents averaged 2.7 children.

### Measures

We created multiple feasibility indicators from agency records, integrity checklists, and study surveys. Suitability measures emerged from both the integrity checklist and the study survey. In addition, data on client acceptability, client adherence, provider adherence, and referral acceptance were recorded at the agency level or on integrity checklists.

### Suitability

Suitability refers to the goodness of fit between services and client presenting problems. Indicators of trauma exposure, mental health, and physical health contributed to our suitability outcomes. These measures reflect problem areas that T-SBIRT is designed to address.

### Trauma Exposure

While delivering T-SBIRT services, providers probed for client experiences of potential traumatic events (PTEs), documenting results on the integrity checklist. Based on pre-study site-level decisions, the two participating programs used different trauma exposure screeners: Trauma History Screen (THS) or the Life Events Checklist 5 (LEC-5). The THS (Carlson, 2001) assesses lifetime exposure to 14 PTEs such as natural disasters, child sexual and physical abuse, and adult physical and sexual assault. The THS has demonstrated test–retest reliability along with construct and convergent validity (Carlson et al., 2011). For this study, the THS was used to record the type and frequency of each PTE. The LEC-5 (Weathers et al., 2013) is a 17-item instrument that assesses type and modality of lifetime PTE exposure. It has been found to have good internal consistency and test–retest reliability, strong convergent and discriminant validity, and a factor structure consistent with PTSD diagnostic criteria (Blevins, Weathers, Davis, Witte, & Domino, 2015). From these test results, we created two variables reflecting direct lifetime exposure to number of PTE types: *1 or more PTEs* and *2 or more PTEs*.

### Mental Health

Participants answered PTSD screening questions during T-SBIRT sessions when they responded to items from the

Primary Care Post-Traumatic Stress-5 screener (PC-PTSD-5, Prins et al., 2016). Answers were recorded in the integrity checklist. Originally, the PC-PTSD was a 4-item tool that assessed the absence or presence of the following symptoms over the past 30 days: re-experiencing, avoidance, numbing, and hyperarousal. With the publication of the Diagnostic Statistical Manual of Mental Disorders, Fifth Edition, a fifth item was added pertaining to self-blame. The new screener has demonstrated diagnostic accuracy when using a cut score of three or more symptoms (Prins et al., 2016). From PTSD-5 results, we created a *PTSD Index* along with a dichotomous measure, that is, *PTSD-3*, which reflected positive PTSD screening results as defined by a cut point of three.

The immediate post-intervention survey included a 9-item depression scale, the Patient Health Questionnaire-9 (PHQ-9), and a 7-item anxiety scale, the Generalized Anxiety Disorder-7 (GAD-7). The PHQ-9 assesses frequency of depression symptoms over the past two weeks. Answer categories range from 0 (*not at all*) to 3 (*nearly every day*). The tool has been validated with primary care samples (Kroenke, Spitzer, & Williams, 2001) and non-clinical samples (Martin, Rief, Klaiberg, & Braehler, 2006). Optimal cutoff scores for major depressive disorder range from 8 through 11 (Manea, Gilbody, & McMillan, 2012), and PHQ-9 authors suggest a threshold of 10 to define major depression. From PHQ-9 data, we created a total *depression score* and a dichotomous measure, that is, *depression*, indicating a score of 10 or more.

Often administered with the PHQ-9, the GAD-7 explores how often respondents experience anxiety symptoms such as restlessness and irritability over the past two weeks. Answer categories also range from 0 (not at all) to 3 (nearly every day). In an initial validation trial with primary care patients, the instrument demonstrated sound internal consistency, high test–retest reliability, and good construct and factorial validity (Spitzer, Kroenke, Williams, & Löwe, 2006). It has also been validated in the general population (Löwe et al., 2008). A review of GAD-7 results across multiple samples indicated that cut scores from 7 through 10 accurately identified generalized anxiety disorder (Plummer, Manea, Trepel, & McMillan, 2016). From GAD-7 results, we created a total *anxiety score* and dichotomous measure, that is, *anxiety*, indicating a score of 10 or more. We also developed an additional dichotomous variable from our PTSD, depression, and anxiety measures: *mental illness*. The measure is coded “1” if a case meets the study threshold for PTSD, depression, or anxiety.

Several final mental health measures emerged from the PROMIS Global Health-10 Short Form, a 10-item scale referred to as PROMIS-10. The overall PROMIS or Patient-Reported Outcomes Measurement Information

System houses a bank of health-related questions that form various subsets. The PROMIS-10 represents one of a number of scales developed from the item pool that produced good reliability estimates and demonstrated adequate construct validity (Cella et al., 2010). Embedded within the PROMIS-10 is a four-item Global Mental Health subscale that includes questions about one’s overall life quality and the quality of one’s social life, mood and emotions. Answer categories range from 1 (*poor*) to 5 (*excellent*). The subscale has been well-validated (Schalet et al., 2015) and normed on the population at-large. A standardized T-Score of 50 reflects the national average, and intervals of about 10 points represent one standard deviation (Hays, Bjorner, Revicki, Spritzer, & Cella, 2009). From this subscale, we created a *global mental health raw score* and a *global mental health T-Score*.

#### *Physical Health*

T-SBIRT providers asked participants if they had health insurance coverage and a regular place to go for health care, recording answers on the integrity checklist. Two dichotomous measures of healthcare access emerged from these data: *health insurance coverage* and *healthcare home*. We derived additional indicators of physical health from the Global Physical Health subscale of the PROMIS-10. A 4-item measure, the physical health subscale probes respondents’ ratings of overall health, daily activity, energy, and pain. Except for the pain item, answer categories range from 1 (*poor*) to 5 (*excellent*). Like the mental health subscale, the physical health version has been validated (Schalet et al., 2015) and normed (Hays et al., 2009). We summed results into a *global physical health raw score* and transformed raw scores into a standardized *global physical health T-Score*.

#### *Acceptability*

Acceptability is defined by the appropriateness, effectiveness, and severity or tolerability of an intervention (Finn & Sladeczek, 2001; Sidani, Epstein, Bootzin, Moritz, & Miranda, 2009). We measured acceptability in two ways. First, we calculated the percentage of eligible program participants who *accepted T-SBIRT* services after receiving an offer to participate. Data on eligible participants were kept in agency records, and we compared these data to completed integrity checklist data. Second, we measured the percent of T-SBIRT participants who completed an *evidence-based breathing* exercise (Foa & Rothbaum, 1998). Upon nearing T-SBIRT protocol completion, T-SBIRT providers asked participants if they were distressed to the point of requiring a grounding activity. If the

answer was yes, providers led participants through the exercise and documented doing so on integrity checklists.

#### Client Adherence

Client adherence refers to the extent with which a client group conforms to service requirements (Finn & Sladeczek, 2001). To capture this construct, we identified the percentage of clients who *completed T-SBIRT* after accepting services. Data on completion were also recorded on integrity checklists.

#### Provider Adherence

Provider adherence, a dimension of treatment fidelity or integrity, denotes the thoroughness with which providers complete all elements of a treatment protocol (Sanetti & Kratochwill, 2009). For this feasibility domain, we calculated the percentage of required *T-SBIRT protocol steps completed* across all cases, as indicated by integrity checklists.

#### Intended outcomes

Arain et al. (2010) suggest that feasibility studies collect data on intended outcomes to inform and justify future efficacy trials. Consistent with this recommendation, we gathered pilot data on an intended intervention outcome, that is, referral acceptance. From the integrity checklist, four dichotomous measures of referral acceptance emerged: *health insurance referral acceptance*, *healthcare home referral acceptance*, *mental health referral acceptance*, and *any referral acceptance*.

#### Analysis Strategy

We generated descriptive statistics for all study measures, ultimately comparing results to established norms from previous empirical studies. To analyze potential predictors of mental health referral acceptance, we conducted bivariate mean comparisons between the mental health referral acceptance and non-acceptance groups. Using either chi-square or independent t-tests, we assessed whether these groups differed across demographic factors (i.e., gender, age, race, and education) and across study suitability measures. All analyses were conducted in SPSS 25.0.

## Results

Table 1 shows results corresponding to the five study questions or feasibility domains. Regarding *suitability*, 97.6% of the sample endorsed exposure to at least one type of PTE over the life course, while 90.4% indicated exposure to at least two PTE types. The average number

of current self-reported PTSD symptoms was 2.3. Using the cut point of three or more symptoms on the PC-PTSD-5, 48.8% of the sample produced a positive PTSD screening result. The average depression score, which can range from 0 to 27, was 7.8 among participants. Over one-third of the sample, 35.4%, was at risk for depressive disorder according to a common PHQ-9 clinical threshold (i.e., 10). The sample average on the anxiety scale or GAD-7, which ranges from 0–21, was 8.3. Nearly half or 47.6% of the sample screened positive for generalized anxiety considering the scoring threshold of 10. In addition, nearly two-thirds of the sample, or 63.9%, screened positive for PTSD, major depressive disorder, or generalized anxiety disorder. These cases received a code of 1 on the study measure of mental illness. The global mental health average T-Score for the entire sample was 43.5. Finally, measures of physical health indicated that 77.1% of the sample had health insurance coverage, and 57.8% had a healthcare home. The sample T-Score mean on the PROMIS-10 Global Physical Health subscale was 48.2.

Turning to *acceptability*, 83 out of 100 agency clients accepted and initiated T-SBIRT services, while only one participant, or 1.2%, completed an evidence-based grounding activity. The participant expressed distress when asked how she was feeling in the aftermath of answering trauma-related questions; therefore, the T-SBIRT provider deployed the grounding exercise to facilitate client stability. Regarding *client adherence*, all participants who began T-SBIRT services completed them. A *provider adherence* or fidelity rate of 98.5% reflected the percentage of T-SBIRT protocol steps (i.e., 17) completed for all clients (i.e., 83). The total number of steps to be completed was 1,411 ( $17 \times 83$ ); however, several steps or elements were not required for all cases; for example, referral for health insurance was not necessary for those with pre-existing coverage. Therefore, the actual number of steps to be completed across all cases was 1,131.

Measures of referral acceptance, the *intended outcomes*, revealed that 20.5% of participants accepted a health insurance referral, 34.9% accepted a referral to a primary care clinic or healthcare home, and 56.6% accepted a referral to mental health care. Moreover, 77.1% of participants accepted a referral to either a health insurance navigator, a primary care clinic, or a mental healthcare provider. Because referral to mental health care represents the ultimate aim of the protocol, we assessed correlates of this outcome and found only educational attainment to be associated with it at the bivariate level. A significantly higher percentage of participants who had completed some college education or beyond accepted a mental health referral versus those who attained a high school degree or lower (69.4% vs. 45.7%, Chi-square = 4.642,  $df = 1$ ,  $p = .031$ ).

**Table 1** Descriptive statistics for study variables

Measures	<i>N</i>	Mean (SD)	Observed range
<b>Suitability</b>			
Trauma exposure			
1 or more PTEs	83	0.976 (0.154)	0–1
2 or more PTEs	83	0.904 (0.297)	0–1
Mental health			
PTSD Index	82	2.281 (1.745)	0–5
PTSD-3	82	0.488 (0.503)	0–1
Depression score	82	7.829 (6.955)	0–27
Depression	82	0.354 (0.481)	0–1
Anxiety score	82	8.342 (6.296)	0–21
Anxiety	82	0.476 (0.503)	0–1
Mental illness	83	0.639 (0.483)	0–1
Global mental health raw score	83	11.916 (3.813)	5–20
Global mental health T-Score	83	43.463 (9.851)	25.1–67.6
Physical health			
Health insurance	83	0.771 (0.423)	0–1
Healthcare home	83	0.578 (0.497)	0–1
Global physical health raw score	83	14.940 (2.661)	7–20
Global physical health T-Score	83	48.227 (7.817)	26.7–67.7
<b>Acceptability</b>			
Accepted T-SBIRT	100	0.830 (0.378)	0–1
Evidence-based breathing	83	0.012 (0.110)	0–1
<b>Client adherence</b>			
Completed T-SBIRT	83	1.00 (0.000)	0–1
<b>Provider adherence</b>			
T-SBIRT protocol steps completed	83	0.985 (0.122)	0–1
<b>Intended outcomes</b>			
Health insurance referral acceptance	83	0.205 (0.406)	0–1
Healthcare home referral acceptance	83	0.349 (0.480)	0–1
Mental health referral acceptance	83	0.566 (0.499)	0–1
Any referral acceptance	83	0.771 (0.423)	0–1

## Discussion

### Contributions

Results suggest that it is feasible to implement T-SBIRT within employment service programs. The study sample reported high levels of trauma exposure and mental health problems, low levels of healthcare access, and poor physical health status, indicating that T-SBIRT may be suitable for low-income job seekers receiving employment services. T-SBIRT also appeared to be acceptable to study participants because a large majority of employment service recipients who were offered T-SBIRT services accepted them, and these participants did not express distress over participating in T-SBIRT services nor require stabilization upon completion. Client adherence was high, as all of the

individuals who accepted T-SBIRT services completed them. Provider adherence was also high, well over 90% and reflecting model fidelity. Finally, the protocol functioned as intended by generating a mental health service referral for over half of the participants and producing any type of referral, that is, to mental health, primary care, or health insurance navigator, for over 75% of the sample.

### Suitability

Comparing these results against published research and/or population estimates enhances understanding of their meaning. For instance, research suggests that between 50% and 90% of the U.S. adult population has experienced at least one PTE, compared to 97.6% of our sample (Kilpatrick et al., 2013). Published scholarship also indicates that around 50% of U.S. adults report experiencing two or more PTE types in contrast to 90% of our sample. In addition, epidemiological research suggests that PTSD rates when estimated within a previous 6-month period are 4% while lifetime rates range from 7 to 8.7% (Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). According to our results, nearly 50% of our study participants were at risk for a current PTSD diagnosis. Taken together, our trauma exposure and PTSD screening results highlight the salience of trauma among low-income job seekers accessing employment services, a conclusion that Booshehri et al. (2018) also drew, which warrants further study.

Given the well-established link between trauma, poverty, and mental disorders (Wadsworth et al., 2008), it is not surprising that mental health problems other than PTSD plagued our low-income sample. For instance, our sample appeared to experience more depressive symptoms and higher potential rates of depression than clinical samples or the general population. While the mean PHQ-9 score for a clinical sample was around 5 (Kroenke et al., 2001), our sample average was 7.8. In addition, the previous 12-month prevalence estimate for major depression within the general population is 8.6% (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012), but over 35% of our sample was at risk for current major depressive disorder as indicated by PHQ-9 scores of 10 or higher. Our sample also appeared to suffer disproportionately from anxiety symptoms and generalized anxiety disorder, evidenced by a GAD-7 mean of 8.3 and a 47.6% current rate of generalized anxiety disorder (i.e., participants scoring 10 or higher). In contrast, the clinical sample for the validation study produced a mean of 5.6 (Spitzer et al., 2006), and the 12-month population prevalence estimate for generalized anxiety disorder is 2.0% (Kessler et al., 2012).



To drive home the point that our sample experienced significant mental health problems, we found that 63.9% produced a positive screening result for PTSD, major depression, or generalized anxiety, according to study criteria. Moreover, the sample mean on a global measure of mental health was two-thirds of a standard deviation below the national average. Findings suggest that low-income, urban-dwelling job seekers would likely benefit from mental health care or related community supports.

Our findings also suggest that low-income, urban-dwelling participants of employment services may face additional challenges to their health and well-being. For instance, over 20% did not have health insurance coverage, and over 40% did not have a regular place to go for health care. Currently, 12.2% of adults lack health insurance coverage (Berchick, Hood, & Barnett, 2018), while older data indicate that 22% of the U.S. population had no place to go for health care (DeVoe, Wallace, Pandhi, Solotaroff, & Fryer, 2008). Therefore, healthcare access appears to affect a comparatively high percentage of our sample members, and these individuals may also experience somewhat poor physical health. To wit, results from the PROMIS-10 Global Physical Health subscale indicated that our sample scored below the national average.

#### Acceptability

The rate of client service acceptance, that is, 83%, reflects published acceptance rates for single session brief interventions (see Murphy, Bijur, Rosenbloom, Bernstein, & Gallagher, 2013) and aligns with results from the previous T-SBIRT feasibility study (Topitzes et al., 2017). In addition, our finding on tolerability, that is, 1 out of 83 participants required a grounding exercise, comports to an extent with research indicating that only a minority of adults report significant distress when responding to questions about previous trauma exposure (Legerski & Bunnell, 2010). Although additional research is still warranted, results from a T-SBIRT feasibility study conducted with primary care clinic patients also revealed that the protocol was tolerable for participants (Topitzes et al., 2017). Importantly, some level of reactivity to trauma probes may be normative and even therapeutic among trauma survivors, and often those who do experience discomfort when answering these questions report that feelings of distress pass quickly and are replaced by positive appraisals (Legerski & Bunnell, 2010). By embedding questions about trauma within a motivational, client-centered, strength-based brief intervention, T-SBIRT increases the chances that participants will experience the protocol as tolerable and non-harmful. The grounding exercise also protects against client harm.

#### Client Adherence

Results indicated that all the participants who initiated T-SBIRT services completed them. This also aligns with results from the previously published T-SBIRT feasibility study (Topitzes et al., 2017) and is likely attributable to several key factors that have been identified in the literature as potential predictors of client adherence. These include brief non-demanding services, a service focus on rapport-building and motivational enhancement, and host agency buy-in and support (Martin, Williams, Haskard, & DiMatteo, 2005).

#### Provider Adherence

Observed provider adherence or fidelity rates were high, that is, 98.5%, and similar to rates of provider adherence observed in a previous T-SBIRT feasibility trial (Topitzes et al., 2017). Intervention scientists consider rates of 80% or above to be acceptable; however, a review of implementation studies found that only 53 of 342 behavioral health interventions or 15.5% met this standard (Borrelli et al., 2005). We suspect that T-SBIRT produces a high rate of adherence because it is a brief protocol that minimizes provider burden and involves individualized pre-service training and ongoing technical assistance.

#### Intended Outcomes

Data from a final feasibility study domain, intended outcomes, revealed that over three-quarters of the study participants accepted a referral to some service. Therefore, the majority of study participants lacked access to health care or presented with mental health issues, and T-SBIRT may have helped many address these problems through referral. It is particularly noteworthy that the majority of participants accepted a referral to mental health care given that members of lower socio-economic strata often avoid such services due to stigma (Roberts et al., 2008). Strengthening the point, we found that participants with post-secondary education were more likely to accept mental health referrals relative to those with lower educational attainments. No other factor correlated with referral acceptance, signaling that T-SBIRT was potentially helpful to participants regardless of their profile.

Ultimately, we believe that T-SBIRT promoted high mental health referral acceptance rates in this trial (56.6%) and a previous feasibility study (62.5%; Topitzes et al., 2017) because it incorporates key trauma-informed principles such as collaboration through strong referral partnerships. T-SBIRT providers worked closely, for instance, with evidence-based mental health professionals,

establishing lines of communication and referral procedures prior to the implementation phase. During implementation and at the end of sessions, providers helped participants schedule appointments with mental health professionals via phone contact. Research supports the use of evidence-based mental health treatment with low-income groups; however, access remains a barrier (Santiago, Kaltman, & Miranda, 2013). T-SBIRT helps address and remove such barriers to ensure receipt of quality care. For instance, providers not only conducted referrals according to best practices, but also facilitated referral completion via follow-up contact with participants. However, the research team was unable to collect data on referral completion.

### Limitations

Lack of data on referral completion represents a major limitation of the current feasibility study. While referral acceptance is an important outcome of the T-SBIRT protocol, it does not always translate into referral completion. If T-SBIRT participants do not complete accepted referrals, the expected benefits of referral cannot accrue. As mentioned, we worked with partner employment service agencies to ensure that referral processes reflected best practices, but future trials should capture rates of referral completion. Another limitation of the current feasibility trial is the timing of the study survey administration, that is, directly following completion of the T-SBIRT protocol. Because the protocol introduced the topic of trauma and traumatic stress, it is plausible that survey responses to questions related to trauma and mental health were inflated. Nonetheless, the bigger concern for this sample is Type II error or the accretion of false-negative responses. We suspect that the information exchanged during the T-SBIRT protocol actually helped generate valid item responses. Finally, the study relied on a convenience sample and a non-experimental design. We therefore can neither generalize results to all employment service recipients nor can we attribute observed outcomes to T-SBIRT participation.

### Future Directions and Implications

A controlled study, either experimental or quasi-experimental, should examine T-SBIRT outcomes among employment service recipients. Measures collected should include referral acceptance and completion along with symptoms of PTSD, depression, and anxiety. Distal outcomes such as employment and earnings should also be assessed.

Based on the high rate of mental health problems observed among the current study participants and

consistent with community psychology principles, it is worth considering referring T-SBIRT completers not only to individual clinicians but also to group or community supports. Examples of these referral partners include trauma-informed Sanctuary Model<sup>®</sup> groups or community-based organizations. The current supply of evidence-based trauma counselors cannot, in all likelihood, meet the mental health demands of trauma-affected adults seeking job services. Nevertheless, limitations on mental health treatment capacity should not deter employment service providers from addressing trauma within their programs and referring clients outside their programs. Doing so with all consenting clients can expand the scope of trauma-informed services and further move TIC into the public health sphere.

In conclusion, employment service programs serving low-income adults at risk for chronic unemployment ought to consider developing and delivering well-specified trauma-informed services. T-SBIRT represents a well-articulated means by which TIC can be implemented within employment service programs. While concerns about conducting trauma-informed direct services within a non-clinical setting may arise, our findings suggest that a structured protocol such as T-SBIRT can be feasibly integrated within employment programs and delivered by case managers or employment specialists. Doing so would enable programs to directly address trauma among clients through screening and referral services, with a distal goal of improving program outcomes along with community and public health.

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