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Complementing SBIRT for Alcohol Misuse with SBIRT for Trauma: A Feasibility Study

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Reducing alcohol misuse is a priority for U.S. health officials considering that misuse of alcohol is a leading preventable cause of morbidity and mortality. Consequently, health centers are integrating Screening, Brief Intervention, and Referral to Treatment (SBIRT) for

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alcohol misuse within usual care. Although SBIRT is well validated among general patient samples, results have not generalized to drinkers with probable alcohol use disorder; moreover, little is known about the efficacy of SBIRT with patients who are of low-income or ethnic or racial minority status. Members of these groups are of particular concern because they are at risk to experience trauma, potentially in concert with alcohol misuse. Therefore, translational approaches to delivering SBIRT particularly with these groups of interest might be needed to meet the Grand Challenge of reducing alcohol misuse. Accordingly, this study combined SBIRT with a model designed to address psychological trauma: T-SBIRT. With a sample of 112 adults, most of whom were African American or Latino/a, authors analyzed multiple indicators of feasibility. Results indicated that T-SBIRT is suitable for and acceptable to patients accessing community-based health services, and T-SBIRT can promote high referral acceptance rates to specialty treatment, particularly among patients with probable alcohol use disorder.

KEYWORDS alcohol misuse, feasibility, PTSD, SBIRT, trauma, treatment acceptability

Alcohol misuse contributes to numerous chronic diseases and conditions while also significantly increasing risk for natural or accidental death (Shield, Parry, & Rehm, 2013). As a leading preventable cause of morbidity and mortality, it has been the target of many policy initiatives. For example, the U.S. government recently invested heavily in alcohol misuse prevention and treatment through health care reform, promoting widespread dissemination of several identified service models; chief among these selected models was Screening, Brief Intervention, and Referral to Treatment (SBIRT; Humphreys & McLellan, 2010).

Implemented typically within primary health care settings by physicians and allied health professionals, such as social workers and nurses, SBIRT protocols introduce well-validated screening procedures followed by, when indicated, a follow-up intervention. A brief intervention represents standard treatment for alcohol misuse, whereas a multisession intervention or referral to more intensive treatment is recommended for probable alcohol use disorder (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The goal of SBIRT is to reduce unhealthy drinking patterns among medium- to high-risk drinkers and to help treat alcohol use disorder. As such, it is a low-intensity service with the potential to impact health at the population level (Babor et al., 2007). Recently, SBIRT has been used not only in hospitals but in community-based settings, and is considered an integrated health practice that crosses disciplinary boundaries to affect service recipients' physical and behavioral health (Agerwala & McCance-Katz, 2012).

Although SBIRT has been found to be effective in addressing medium to high-risk drinking, also defined as hazardous or harmful use, it does not appear to produce significant effects among those with probable alcohol use disorder (Glass et al., 2015). Furthermore, efficacy studies report positive SBIRT outcomes among middle-class White adults, but less is known about SBIRT effects with low-income, ethnic and racial minorities (O'Donnell et al., 2014). To meet the Grand Challenge of reducing widespread alcohol misuse while also extending SBIRT effects to groups at risk for comparatively poor health, Begun, Clapp, and The Alcohol Misuse Grand Challenge Collective (2016) suggested adapting SBIRT via translational processes.

This article describes such a translational project. The authors adapted, implemented, and tested the feasibility of a model based on SBIRT for substance misuse but designed to address psychological trauma, that is, T-SBIRT. Intended to be delivered with traditional SBIRT services, T-SBIRT aims to improve SBIRT outcomes for all patient groups, yet we implemented the intervention with groups at high risk for comparatively poor health outcomes such as adults with probable alcohol use disorder or low-income adults of color. We suspected that T-SBIRT could most effectively augment traditional SBIRT services for these patient groups at risk for poor health or health disparities because trauma often (a) cooccurs with and undermines resolution of risky alcohol use (McCauley, Killeen, Gros, Brady, & Back, 2012), and (b) disproportionately affects low-income adults and racial and ethnic minorities (Briere & Scott, 2015).

LITERATURE REVIEW

A robust literature supports the efficacy of traditional SBIRT for reducing alcohol use within 6 months of completing an SBIRT session (e.g., Madras et al., 2009). Significant intervention effects have emerged across emergency and primary care settings (Agerwala & McCance-Katz, 2012), and SBIRT is making its way into community-based service settings with the help of social work practitioners and scholars (Bliss & Pecukonis, 2009). However, a recent meta-analysis from Glass and colleagues (2015) reveals that SBIRT does not result in successful referral to treatment for those with probable alcohol use disorder. Moreover, in a thorough review of the literature, O'Donnell and colleagues (2014) indicated that the benefits of SBIRT for low-income, racial and ethnic minorities have not been well-studied or well-reported.

Following the recommendation to adapt SBIRT for target groups, Salvalaggio et al. (2013) proposed an enhanced SBIRT model tailored for socioeconomically disadvantaged patients. Model adaptations were designed to facilitate patient engagement and resource access, thereby addressing common barriers to health care for low-income patients. Although the authors described the model and study protocol, they have not published patient outcome results.

Aside from problems with health service engagement and resource availability, another key factor that might diminish the effectiveness of SBIRT for vulnerable populations is the presence of trauma-related comorbidity. For instance, among individuals with substance use disorders (SUDs), the rate of posttraumatic stress disorder (PTSD) has been found to range from 33% to 60% (Ford, Hawke, Alessi, Ledgerwood, & Petry, 2007; McCauley et al., 2012), and for low-income patients, rates of comorbidity in all likelihood drift toward the high end of the published range (Briere & Scott, 2015). Moreover, Kramer, Polusny, Arbisi, and Krueger's (2014) literature review suggests that trauma exposure more often than not presages substance abuse (Kramer et al., 2014) and that PTSD complicates SUD treatment (Ford et al., 2007). Clinical wisdom previously dictated that treatment for cooccurring PTSD and SUDs solely or initially target SUD symptoms, but new evidence is emerging favoring integrated treatment models (e.g., McCauley et al., 2012).

Although integrated PTSD and SUD treatment models are ascendant, little is known about the translation of these concurrent treatment approaches to brief interventions that address clinical or subclinical presentations of substance abuse and posttraumatic stress. One study revealed that college students with posttraumatic stress symptoms could benefit from a brief intervention targeting heavy episodic alcohol use (Monahan et al., 2013). Another study, set in primary health care, indicated that alcohol and trauma screening followed by indicated brief treatment could reduce alcohol consumption among problem drinkers (Israel et al., 1996). The authors concluded that addressing trauma and alcohol misuse simultaneously in a primary health care setting represents an efficient strategy to confront a common comorbidity and to promote health.

CURRENT IMPLEMENTATION PROJECT AND FEASIBILITY STUDY

The current implementation project represents a component of a parent project titled the SBIRT Training for Substance Misuse Program at the University of Wisconsin–Milwaukee. Funded by the Substance Abuse and Mental Health Services Administration (SAMHSA), the parent project aimed to disseminate SBIRT within community health clinics. The authors proposed piloting a T-SBIRT "module" at several sites based on the listed rationale and consistent with priorities that SAMHSA articulated both in a 2011 program announcement (Screening, Brief Intervention, and Referral to Treatment with a Trauma Module) and in recent program initiatives (Grants for Adult Trauma Screening and Brief Intervention or GATSBI).

T-SBIRT Model

Development

A first draft of the T-SBIRT model emerged as authors reviewed the literature. Subsequently, practitioners from the T-SBIRT project pilot sites reviewed the initial draft of the protocol and provided feedback to inform model revisions. The first author then met with representatives from participating sites to establish in-clinic procedures for identifying and recruiting patients for T-SBIRT services. Last, a graduate student intern conducted trial T-SBIRT sessions, leading to protocol refinements. In sum, the protocol arose iteratively through a blend of conceptual and practical approaches. Translating insights from basic science to applied settings often involves complex processes undertaken in multiple stages, starting with adaptation and design and moving to field testing and refinement (Topitzes, Mersky, & McNeil, 2015).

Structure

The structure of the T-SBIRT protocol mimics that of traditional SBIRT. However, its purpose is to generate patient insight into trauma exposure and effects and to enhance patient motivation for behavioral or mental health services, if indicated. T-SBIRT, like traditional SBIRT, rests on motivational interviewing principles (Agerwala & McCance-Katz, 2012) and relies on the following common practice elements: seeking permission to share information, providing information and education, asking open-ended questions, reflecting and summarizing responses, and reinforcing statements that reflect motivation to change behavior.

The actual sequence of the T-SBIRT protocol unfolds as follows. Immediately after the traditional SBIRT protocol is completed, T-SBIRT is introduced with a brief statement about the known connections between stress and health. The T-SBIRT service provider then asks an open-ended question about specific stressors in the patient's life. Next, the provider queries the patient about potential traumatic events (PTEs) to which the patient might have been exposed throughout life, invoking items from the Trauma History Screen (THS; Carlson, 2001). The provider also probes for current PTSD symptoms by verbally administering the Primary Care Post-Traumatic Stress Disorder Screen (PC-PTSD; Prins et al., 2003). After covering topics of trauma exposure and traumatic stress, the provider asks the patient about "positive" and "unhelpful" strategies used to cope with trauma.

Consistent with the self-medication theory (Kramer et al., 2014), the provider next informs the patient that at times it can be difficult to eliminate alcohol or drug misuse or other unhelpful coping strategies without simultaneously addressing trauma exposure and symptoms. These steps are designed to enhance the patient's motivation to address trauma. Hence, the

provider subsequently gauges the patient's motivation for a behavioral or mental health treatment referral and refers the patient to a service provider practicing either within or outside the host clinic, if indicated. When referring within the clinic, T-SBIRT providers offer ongoing services themselves or introduce the client to the prospective ongoing mental and behavioral health service providers (i.e., a warm handoff). If referring outside the clinic, T-SBIRT providers follow up referrals with patient phone calls to either ensure that patients pursued the referral or facilitate referral pursuit via problem solving. The provider concludes services by offering the patient an educational booklet on PTSD published by the National Center for PTSD if appropriate and by implementing an evidence-based calming exercise if necessary.

The Appendix displays the T-SBIRT protocol in the form of an integrity checklist that providers referenced and completed when delivering T-SBIRT services. Providers reported that completing all steps of the T-SBIRT protocol required an average of 10 to 15 min. In total, the length of time needed to complete both SBIRT protocols was approximately 20 to 25 min.

Implementation Project Procedures

Providers and audience

Due to the nature of the topic and time required to complete the procedure, nursing, social work, or mental health staff as opposed to primary care physicians conducted T-SBIRT services. Nevertheless, the T-SBIRT protocol is designed to be brief and present-moment focused. To specify, T-SBIRT service providers direct patients' attention to current effects of trauma exposure and traumatic stress. Exploration of the historical details of traumatic events is not clinically indicated during brief interventions (Najavits & Kanukollu, 2005).

The target audience in this initial trial was low-income primary health care patients who presented with risk factors for behavioral health problems. Identified risk factors included a positive result on an alcohol use prescreening test administered to all patients, a referral from a hospital emergency room, and physician determination of possible alcohol misuse. One of the two sites involved in the project, Site 2, focused primarily on the first criterion, yielding a lower risk patient group.

Study sites

Two community-based health clinics located within a large city in the upper Midwest region of the United States participated in this T-SBIRT implementation project. Operating the first clinic, or Site 1, is a nonprofit organization that offers a menu of services such as primary health care and case

management to adults who are homeless, underinsured, or uninsured. The current implementation project involved primary and behavioral health care units colocated within the agency's health clinic. Designated as a federally qualified health center, the clinic employs multiple physicians, nurses, and behavioral health specialists, and primarily serves African American patients. The T-SBIRT project coincided with clinic efforts to integrate primary and behavioral health care services. Site 2 is a community-based health clinic that offers primary health care free of charge to patients facing significant barriers to care, such as lack of insurance. Along with five nurses, the small clinic employs one full-time psychologist in an effort to address the mental and behavioral health needs of a primarily Latino patient population.

Provider training and practice

Before initiating feasibility data collection, three service providers participating in the project completed training in traditional SBIRT. Afterward, the providers—a bachelor's-level nurse functioning as a patient navigator with 3 years of practice experience, a master's-level social work intern providing behavioral health services with 1 year of practice experience, and a master's-level counseling psychology intern delivering mental health services with 1 year of practice experience—attended weekly supervision meetings with the first author. The initial aim of the meetings was to facilitate protocol mastery. To that end, providers practiced SBIRT and T-SBIRT skills in vivo prior to collecting data.

Patient contact

During the prestudy service period, SBIRT providers worked with physicians, nurses, and medical assistants to solidify procedures whereby eligible patients would be referred to SBIRT providers before primary care visits. Per the established procedures, SBIRT providers would meet identified patients in waiting or exam rooms, ask permission to conduct SBIRT protocols, and facilitate SBIRT sessions in behavioral health unit offices or physician exam rooms. Seldom were SBIRT sessions interrupted by physicians; however, in such cases, SBIRT providers resumed services after the conclusion of the primary care appointment.

Feasibility Study Procedures

Service provision and study introduction

When SBIRT service providers began collecting data for the feasibility study, they continued to (a) follow the referral and recruitment procedures outlined earlier, (b) implement both SBIRT and T-SBIRT services as designed, and (c)

complete T-SBIRT integrity checklists. The checklists were meant to increase fidelity to the model and record feasibility data. After the combined SBIRT and T-SBIRT sessions were completed, the SBIRT providers introduced the feasibility study survey to assess patient acceptability of the T-SBIRT protocol. Providers asked service recipients if they were interested in completing the survey, informing patients that the survey was nine items in length and that it referred specifically to the provider–patient conversation about trauma (i.e., T-SBIRT) as opposed to the conversation about substance use (i.e., SBIRT). In addition, providers notified patients that they would receive a $5 gift card after completing the survey.

Administering and collecting the survey

If a patient agreed to take the feasibility study survey (102 out of 112 patients did so for a 91.1% response rate), the SBIRT provider administered the survey by handing a copy to the study participant, allowing the participant to complete the tool in private and answering questions about specific items. The participant placed the completed survey in a large envelope and exchanged the envelope for a gift card; afterward, the provider inserted the completed integrity checklist in the envelope. One study packet was generated for each participant, and the first author collected packets at supervision meetings consistent with the human subjects protection plan.

Supervision meetings

The first author continued to hold weekly supervision meetings during data collection periods. Supervision discussions centered on provider adherence and competence. That is, the first author ensured that providers covered all steps of the protocol and recorded each completed step with a check mark (i.e., adherence). Furthermore, the first author discussed quality of service provision by referencing motivational interviewing principles, role-playing with SBIRT providers, and exploring case scenarios (i.e., competence).

Service capacity

During the study period, Site 1 completed roughly twice the number of SBIRT and T-SBIRT service sessions compared to Site 2 (74 vs. 38) due to (a) an earlier launch date, and (b) the presence of two SBIRT service providers at Site 1 versus one at Site 2. Over a period of 4 months, Site 1 conducted an average of just under five protocols per week, whereas over a period of 2.5 months, Site 2 completed an average of just under

four SBIRT and T-SBIRT protocols per week. Although the clinics prescreened all patients for alcohol use, they devoted limited staff time to SBIRT services given the part-time schedule of interns, the myriad other duties of the interns and nurse patient navigator, and limited available resources.

Feasibility Study Purpose and Domains

This study is meant to assess the feasibility of the T-SBIRT protocol and prepare the way for an efficacy trial (see Arain, Campbell, Cooper, & Lancaster, 2010). Accordingly, the study collected and analyzed data from five distinct yet related domains relevant to formative evaluations: (a) suitability of treatment, (b) acceptability of treatment, (c) patient compliance (also known as patient adherence), (d) treatment integrity, and (e) intended outcomes (Bowen et al., 2009). Suitability, sometimes considered a subset of acceptability, refers to the goodness of fit between services and the presenting problem. Acceptability is defined as "the extent to which interventions are considered appropriate, effective, and fair" (Finn & Sladeczek, 2001, p. 176) by either service providers or service recipients; we assessed acceptability from the standpoint of the service recipients (i.e., patients). Unsurprisingly, patient perception of acceptability can contribute to compliance (e.g., acceptance and completion of services).

Treatment integrity or fidelity has been characterized as a latent construct composed of several distinct dimensions including provider adherence and competence (Sanetti & Kratochwill, 2009). Adherence denotes the thoroughness with which providers follow the steps of a treatment or intervention protocol and competence refers to the skillfulness with which providers deliver the protocol. We promoted both but collected adherence data only. Finally, Arain et al. (2010) suggested that feasibility studies collect data on intended outcomes to inform and justify future efficacy trials. We therefore gathered pilot data on one obvious intervention outcome (i.e., referral acceptance) to generate insight into the model's potential efficacy.

METHOD

Sample and Design

Sample

The sample consisted of adult patients from two community health clinics identified through convenience sampling procedures. Based on a daily schedule of appointments, SBIRT providers culled in-house SBIRT referrals from medical assistants with additional input from nurses and physicians during designated SBIRT service hours. Prior to primary care visits, SBIRT

providers contacted patients identified for SBIRT services while the patients sat in waiting or exam rooms, and on contact, SBIRT providers offered combined SBIRT and T-SBIRT services. Each provider devoted 2 to 5 hr per week to SBIRT during the study period.

In total, 112 patients participated in the study: 74 from Site 1 and 38 from Site 2. Of the full sample, 53.7% were African American, 36.1% identified as Latino, and 5.6% were White; 40.6% were female. The average age was 41.4 years, with a range of 18 to 74. Participants' age did not vary across sites, but the race or ethnicity and gender composition did. At Site 1, 82.9% of participants were African American, 8.6% were White and 1.4% identified as Latino; in contrast, all participants at Site 2 identified as Latino. Also, whereas 44.4% of the participants at Site 1 were female, only 32.4% of participants at Site 2 were female.

SBIRT providers completed integrity checklists for all participants. At the conclusion of SBIRT services, 5 participants from each site refused to complete treatment acceptability surveys due to a stated concern for time. Thus, the sample size for the survey is 102.

Design

To test whether it is feasible to marry T-SBIRT with SBIRT in community health clinics, the authors used a nonexperimental research design to collect data on an intervention group at one time point with patient-report surveys and provider-completed integrity checklists. The authors also relied on a monitoring and interactive design to ensure that providers delivered the protocol and collected the data as planned. With these two approaches, the authors collected indicators from all five feasibility study domains identified earlier.

Measures

We collected data from self-report assessments completed by study participants and from the T-SBIRT integrity checklists completed by SBIRT service providers. From these data, we created multiple measures to assess various indicators of feasibility. To specify, measures contributing to suitability and acceptability of treatment derived from validated self-report scales were administered during patient contact and embedded within the SBIRT protocols. Measures of patient compliance, treatment integrity, and intended outcomes emerged from the integrity checklists. In the first five measures subsections that follow, we introduce the validated alcohol-misuse screener, trauma screeners, and treatment acceptability survey along with, in some cases, measures constructed from these assessments. Subsequently, in the

final four subsections, we identify the way in which we created measures to assess our five feasibility constructs.

Alcohol Use Disorders Identification Test

During receipt of traditional SBIRT services, patients completed a drug abuse screening test along with the Alcohol Use Disorders Identification Test (AUDIT; Babor et al., 2001). For this study, however, authors analyzed results from the AUDIT only. The AUDIT is a 10-item tool that has been shown to distinguish between safe alcohol use, hazardous and harmful use, and probable alcohol use disorder (Babor et al., 2001). Items address frequency and quantity of drinking, consequences of drinking, and specific symptoms of alcohol use disorders. Answer categories range from 0 to 4 for each item, resulting in a possible summed total ranging from 0 through 40. Total scores equaling 0 to 7 indicate low risk for alcohol misuse; scores ranging from 8 to 15 reflect hazardous use patterns (medium risk); scores from 16 to 19 represent harmful use patterns (high risk); and scores of 20 or above suggest alcohol use disorder. The instrument demonstrates good psychometric properties in primary care settings (Reinert & Allen, 2002).

We created a continuous AUDIT score variable reflecting raw AUDIT results, and from these scores, we also constructed two ordinal measures: one with three AUDIT score categories (i.e., low risk, medium and high risk combined, and alcohol use disorder), and one with two AUDIT score categories (i.e., low risk vs. all others). For the former measure, we combined medium and high-risk categories due to our conceptual interest in hazardous and harmful users as one cluster. For the latter measure, we combined all drinkers at risk for misuse or alcohol use disorder, as this is the group targeted by SBIRT.

Trauma History Screen

While delivering T-SBIRT services, providers probed for patient experiences of PTEs with the help of the THS. 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. Designed to be both brief and easy to -read, the instrument has demonstrated strong construct and convergent validity along with high test–retest reliability (α = .74–.94) with health care samples (Carlson et al., 2011). Providers did not administer the THS in the conventional manner by reading all items; instead, they discussed examples of PTEs and asked patients if they had ever experienced such traumatic stressors. Although they tried to cover all items, providers essentially asked about "anchor" traumas (i.e., recent or lasting experiences), as opposed to asking for thorough reports of patients' trauma histories. In a brief interview context, providers avoided probing for historical details in a way that might be perceived

as time-consuming and intrusive and was inconsistent with the protocol purpose. Therefore, we created one variable from the THS results: 1 or more PTEs.

Primary Care-PTSD Screen

In addition to assessing for PTEs, providers screened for PTSD with the PC-PTSD, a brief 4-item screening tool that asks respondents if they have experienced, within the past month, four diagnostic symptoms of PTSD: reexperiencing, avoidance, numbing, and hyperarousal (Prins et al., 2003). The tool is widely used, requires only binary responses, and demonstrates high sensitivity (0.91) and moderate specificity (0.72) using a cutoff score of 2 within a health care setting (Prins et al., 2003). Relying on this threshold to determine a positive screening result, providers administered the PC-PTSD conventionally by reading the instrument's preamble and all items verbatim to patients. In our sample, the instrument yielded a Cronbach's alpha reliability estimate of .76. We created two measures based on PC-PTSD results: number of PTSD symptoms and positive PTSD screen. The THS and PC-PTSD have been combined in past trials; together, they help detect PTSD, which is predicated on both trauma exposure and traumatic stress symptoms.

Combined AUDIT And PC-PTSD

We also created a composite measure informed by the positive PTSD screen and two AUDIT score categories measures: PTSD/AUDIT bombined. It is a categorical variable identifying four mutually exclusive patient outcomes on both the PC-PTSD and AUDIT: negative PTSD screen and low alcohol misuse risk (Group 1), negative PTSD screen and medium or higher alcohol misuse risk (Group 2), positive PTSD screen and low alcohol misuse risk (Group 3), and positive PTSD screen and medium or higher alcohol misuse risk (Group 4).

Treatment acceptability And preferences

To determine acceptability from the patient perspective, SBIRT providers administered a modified version of the 9-item Treatment Acceptability and Preferences (TAP) measure (Sidani, Epstein, Bootzin, Moritz, & Miranda, 2009). The tool was designed to assess the acceptability of behavioral health treatments delivered within health care settings. Items assess a respondent's judgment of the effectiveness, appropriateness, severity, and convenience of an intervention, and item responses range from 0 (*not at all*) to 4 (*very much*). In previous studies, the TAP measure demonstrated good psychometric properties (e.g., Houle et al., 2013; Sidani et al., 2009). With our sample, it yielded a Cronbach's alpha reliability coefficient of .86.

Suitability

To measure whether the T-SBIRT protocol was well-suited for patients receiving traditional SBIRT services within community health clinics, the authors assessed four outcomes: 1 or more PTEs; positive PTSD screen; correlation between AUDIT score and number of PTSD symptoms; and percentage of participants who produced a positive PC-PTSD screening result while also judged to be at low risk for alcohol misuse, at medium to high risk for alcohol misuse (hazardous or harmful use), or at risk for alcohol use disorder, according to the three AUDIT score categories variable. We also assessed positive PTSD screen rates across the two AUDIT score categories. Results were organized by full sample and, when useful, by participating site.

Acceptability

We calculated the overall scale mean of the TAP, after reverse coding one item in which a higher score indicated poorer acceptability, to create a simple indicator of overall acceptability. We calculated the range, mean, and standard deviation of each item and subscale, and also assessed the overall scale mean per category of the PTSD/AUDIT combined measure. We reported the percentage of respondents endorsing a score of 2 or more on each item, reported response categories corresponding to acceptable or higher, and calculated the percent of respondents selecting 0 on each item, a response category of unacceptable. Finally, we reported results by full sample and by site, and constructed an alternative measure of patient acceptability: provider report of implementing the calming exercise listed at the end of the integrity checklist.

Compliance and treatment integrity

Using the integrity checklist to document patient compliance, SBIRT providers indicated whether a patient accepted or refused SBIRT services and whether a patient completed or withdrew from SBIRT services. We calculated the percentage of patients who accepted SBIRT services on request (i.e., acceptance), along with the percentage of those who completed services after initially agreeing (i.e., completion). To create a measure of provider adherence, we calculated the percentage of required T-SBIRT protocol steps completed by providers as indicated by integrity checklists. Results were organized between and within sites.

Intended outcomes

Based on integrity checklist data, we calculated the percentage of patients who verbally accepted a referral to a behavioral or mental health specialist. A positive response on this measure indicated that a patient agreed to accept a referral near the end of the T-SBIRT protocol when providers asked patients if they wanted an onsite appointment or referral to an offsite mental or behavioral health provider. Referrals were accepted based on stated concerns about trauma exposure, trauma symptoms, and trauma-related coping mechanisms. T-SBIRT providers then capitalized on patient motivation by (a) scheduling an appointment for the patient to see the attending T-SBIRT provider for an hour-long mental or behavioral health consult session; (b) introducing the patient to a mental or behavioral health provider in the clinic who had openings if possible or scheduling a meeting with the provider if they were not available at the moment; or (c) referring the patient to an outside clinic and following up with a supportive phone call within 2 weeks. We analyzed referral acceptance rates for the full sample, for each site, and for three alcohol misuse risk categories: low, medium to high, and alcohol use disorder. In addition, we assessed referral acceptance rates per PTSD/AUDIT combined categories.

Analysis

Most analyses took the form of simple descriptive statistics or percentage calculations. We tested the relation between the AUDIT score and number of PTSD symptoms with a bivariate correlation. We employed a chi-square test to compare rates of positive PTSD screen results between the low-risk alcohol misuse group and the group scoring in the medium or higher risk categories. With a univariate analysis of variance (ANOVA), we compared overall acceptability mean scores across the PTSD/AUDIT combined categories, and with chi-square tests we compared referral acceptance rates across the three AUDIT score categories and across the four PTSD/AUDIT categories. All analyses were conducted with SPSS 22 software (IBM, 2012).

RESULTS

Suitability

Fully 92% of study participants endorsed exposure to one or more PTEs; of the participants from Site 1, 95.9% reported exposure to one or more PTEs versus 84.4% from Site 2 (see Table 1). In addition, 55.7% of the full sample produced a positive screening result on the PC-PTSD; 68.9% of the sample from Site 1 did so compared to 28.9% from Site 2 (see Table 1). All participants with positive PC-PTSD results acknowledged experiencing at least one

TABLE 1 Trauma Exposure, Trauma Symptoms, and Referral Acceptance by Study Site

Study Site	Sample Size	% Sample	% 1 or More PTEs	% PositivePTSD Screen	% Accept a Referral
Full sample	$N = 112$	100	92.0	55.4	62.5
Site 1	$n = 74$	66.1	95.9	68.9	74.3
Site 2	$n = 38$	33.9	84.4	28.9	39.5

Note: PTEs = potential traumatic events; PTSD = posttraumatic stress disorder.

TABLE 2 Trauma Exposure, Trauma Symptoms, and Referral Acceptance by AUDIT Score Category

AUDIT Score	Alcohol Misuse Risk Category	Sample Size	% Sample	% 1 or More PTEs	% PositivePTSD Screen	% Accept a Referral
Missing on AUDIT		$n = 8$	7.1	62.5	25.0	25.0
0–7	Low risk	$n = 55$	49.1	90.9	49.1	54.5
8–19	Medium and high risk	$n = 26$	23.2	96.2	65.4	73.1
20+	Alcohol use disorder	$n = 23$	20.5	100	69.6	82.6

Note: AUDIT = Alcohol Use Disorders Identification Test; PTEs = potential traumatic events; PTSD = posttraumatic stress disorder.

PTE, and over 50% reported experiencing symptoms of avoidance over the past month (53.6%); a majority (51.6%) also endorsed PTSD symptoms of hyperarousal (not shown in Table 1).

The AUDIT score and number of PTSD symptoms were correlated at the bivariate level ($r = .205$, $p = .036$). Table 2 displays the rate of exposure to 1 or more PTEs and rate of positive PTSD screen by the three AUDIT score categories. Due to administrator or provider error, AUDIT scores were not recorded for 8 participants. Of those with low risk for alcohol misuse, 90.9% were exposed to at least one PTE and 49.1% screened positive for PTSD. In contrast, of those at medium to high risk for alcohol misuse, 96.2% were exposed to one or more PTEs and 65.4% produced a positive PC-PTSD screening result. Similarly, of those with potential alcohol use disorder, 100% were exposed to at least one PTE and nearly 70% had positive PTSD screening results. Analysis of the two AUDIT score categories (not shown) indicated that of the medium or higher risk group ($n = 49$), 67.3% screened positive for PTSD, a rate that trended higher than the 49.1% positive PTSD screen result for the low group, $\chi^2 = 3.538$, $p = .060$.

TABLE 3 Results from Treatment Acceptability and Preferences (TAP) Measure

Item/Subscale	RangeOverall	Overall		Site 1		Site 2		%, 2 or More		
		M	*SD*	*M*	*SD*	*M*	*SD*	Overall	Site 1	Site 2
1. How effective, in the short term, do you think this treatment will be in improving any problems related to trauma, stress, or both?	0–4	2.75	1.08	3.01	1.02	2.18	0.98	86.3	91.3	75.8
2. How effective, in the long term, do you think this treatment will be in improving any problems related to trauma, stress, or both?	0–4	2.96	1.01	3.12	1.02	2.61	0.92	90.0	91.3	87.1
3. How effective do you think this treatment will be in reducing problems you experience during the day as a result of trauma, stress, or both?	0–4	2.71	1.09	2.74	1.09	2.66	1.11	89.8	91.3	86.2
4. How effective do you think this treatment will be in improving your ability to perform your daily usual activities?	0–4	2.76	1.13	2.72	1.16	2.83	1.05	85.9	84.1	90.0
Effective subscale (Items 1–4)	0–4	2.78	0.89	2.90	0.89	2.53	0.86	—	—	—
5. How acceptable and reasonable does this treatment seem to you?	1–4	3.19	0.93	3.54	0.74	2.45	0.87	97.1	100	90.9
6. How suitable or appropriate does this treatment seem to be for your trauma, stress, or both?	0–4	2.88	1.04	3.06	0.98	2.52	1.06	90.2	94.2	81.8
Appropriateness subscale (Items 5–6)	0.5–4	3.03	0.89	3.30	0.78	2.49	0.88	—	—	—
7. How severe or bad do you think are the risks or side effects of this treatment? (reverse coded)	0–4	3.69	0.75	3.75	0.70	3.58	0.85	98.0	98.5	96.8
Severe indicator (Item 7 only)	—	—	—	—	—	—	—	—	—	—
8. How easy do you think it will be for you to apply recommendations or plans resulting from this treatment to your life?	0–4	2.93	1.12	3.12	1.09	2.48	1.09	86.7	89.9	79.3
9. How willing are you to comply with this treatment?	0–4	3.15	1.10	3.46	0.92	2.33	1.11	88.5	95.7	70.4
Convenience of application (Items 8–9)	0–4	3.04	1.00	3.29	0.86	2.43	1.07	—	—	—
Total TAP score (overall acceptability)	0–4	2.99	0.72	3.17	0.66	2.60	0.69	—	—	—

Note: $N = 102$.

Acceptability

Table 3 shows results of the TAP survey. The overall mean was 2.99, corresponding to a response category of *very acceptable*. For the full sample, the four-item average for the effectiveness subscale was 2.78, reflecting a rating between *effective* and *very effective*. The mean of the appropriateness subscale for the full sample was 3.03, or just above *very appropriate*. The item indicating severity of treatment, which was reverse coded, yielded a full sample mean of 3.69, approaching a rating of *not severe at all*, and all respondents rated, on average, the convenience of application just above *very convenient*, a 3.04 subscale mean.

The overall scale mean varied across PTSD/AUDIT combined categories (not shown in tables): 2.70 for Group 1 or those with a negative PTSD screen and low alcohol misuse risk (n = 28), 2.97 for Group 2 or those with a negative PTSD screen and medium or higher alcohol misuse risk (n = 16), 3.07 for Group 3 or those with a positive PTSD screen and low alcohol misuse risk (n = 26), and 3.17 for Group 4 or the group with a positive PTSD screen and medium or higher alcohol misuse risk (n = 32). ANOVA results indicated that the overall contrasts between groups was not statistically significant (p = .074) but that Group 4 differed significantly from Group 1 (p = .011) on overall acceptability.

The percentage of participants who rated any one item 2 or above, response categories signifying acceptable or better, ranged from 85.9 to 98.0 (see column five of results in Table 3). Conversely, participants coded items 0 or unacceptable at rates ranging from 0.0% to 4.5% (not shown). No respondent rated Item 5 as unacceptable, an item that addresses general acceptability and reasonableness of the protocol. From 0.9% to 1.8% of participants rated the remaining items 0, with the exception of Items 3 and 4, which address effectiveness and garnered unacceptable ratings of 3.6% and 4.5%, respectively (not shown). Site-level results listed in Table 3 reveal that participants from Site 1 rated the T-SBIRT protocol more acceptable than participants from Site 2 on all but one item, and according to integrity checklists, in no case did providers introduce an evidence-based calming exercise to deactivate distressed patients (Briere & Scott, 2015).

Compliance and Treatment Integrity

All patients who were asked to participate in the SBIRT protocols agreed to do so, and all patients who agreed to participate in SBIRT services completed the services. In total, there are 11 mandatory steps that providers followed when implementing the T-SBIRT protocol (see Appendix). Considering all 112 participants, providers for both sites completed 97.2% of the required protocol steps, with little difference between sites.

Intended Outcome

Returning to Table 1, the last column of results displays referral acceptance rates for study participants. Of the full sample, 62.5% accepted a referral to a behavioral or mental health service provider for alcohol or trauma-related concerns. Nearly three fourths of the sample from Site 1 accepted such a referral versus about 40% from Site 2. Referral acceptance rates stratified by AUDIT results shown in Table 2 were as follows: 54.5% of the group at low risk for alcohol misuse, 73.1% of the group at medium to high risk for alcohol misuse, and 82.6% of the alcohol use disorder group. The differences are significant, $\chi^2(2) = 6.55$, $p = .038$.

Not shown are referral acceptance rates per PTSD/AUDIT combined categories; chi-square results suggest that the rates of referral acceptance also varied significantly across the four PTSD/AUDIT combined groups, $\chi^2(3) = 38.645$, $p < .000$. Referral acceptance rates are as follows for Groups 1 through 4, respectively: 25.6%, 43.8%, 79.3%, and 93.9%.

DISCUSSION

Contributions

Suitability

With a predominantly African American and Latino sample accessing community-based primary health care services for low-income patients, this study found that over 90% of participants were exposed to one or more PTEs and over 50% screened positive for PTSD. Although the prevalence of exposure to at least one PTE is very high in this sample, it has been shown that the majority of adults in the United States have experienced at least one PTE (e.g., Kilpatrick et al., 2013). However, epidemiological research suggests that PTSD rates when estimated within a previous 6-month period are approximately 4% as defined either by the fourth or fifth editions of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM–IV* or *DSM–5;* Kilpatrick et al., 2013). Furthermore, lifetime rates of PTSD appear to be 8.7% for African Americans and 7.0% for Latinos (Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). Comparing our PTSD screening results to these figures from population-level studies suggests that the group of patients in our study experienced exceedingly high rates of PTSD; therefore, we conclude that trauma services such as T-SBIRT are suitable for the patient group studied.

Moreover, it appears that yoking such services to substance misuse services is reasonable given the potential correlation between PTSD symptoms and alcohol misuse. To specify, our results revealed that participants' AUDIT scores were significantly associated with number of trauma

symptoms. In addition, the positive PTSD screening rates were quite high among those scoring in the medium or higher risk group for alcohol misuse categories (i.e., 67.3%), surpassing the upper limit of epidemiological estimates for comorbid trauma and substance misuse (Debell et al., 2014). Further, the rate of positive PTSD screening results were higher for those with positive alcohol misuse screening results compared to those with low alcohol misuse screening results, reinforcing Debell et al.'s (2014) suggestion to combine PTSD and alcohol misuse screening.

Our assertion regarding the suitability of combining a brief alcohol misuse intervention with a brief trauma intervention should be qualified by at least one consideration: PTSD rates were distinct across sites, recommending caution when drawing cross-site conclusions. To specify, participants at Site 2 reported lower rates of positive PTSD screening results relative to Site 1, potentially due to (a) differences in gender (e.g., 65.1% of females in the sample screened positive for PTSD vs. 52.4% of the male subsample); (b) differences in race or ethnicity composition (69.1% of African Americans in the sample screened positive for PTSD vs. 30.8% of Latino participants); and (c) slightly distinct recruitment procedures.

Acceptability

Results from the TAP survey revealed that study participants found the T-SBIRT protocol, as implemented, acceptable. The overall mean of the survey reflected a rating of very acceptable, and the vast majority of respondents produced a rating of acceptable or better for each item. Moreover, it appeared that those at risk for cooccurring PTSD and substance misuse rated the T-SBIRT protocol higher on our acceptability metric relative to those at low risk for both, although the average rating for the low-risk group was near *very acceptable* (2.70). These results indicate that those for whom the protocol is tailored find it very acceptable, whereas those at low risk for the problems that the T-SBIRT targets are not averse to the protocol. Furthermore, no respondent rated the trademark item, Item 5, indicating general acceptability, as 0 or unacceptable, and the only items that more than 1.8% of the respondents rated as 0 were two items pertaining to effectiveness. Perhaps because Site 1 participants reported higher rates of potential PTSD relative to Site 2 participants, participants at Site 1 found the protocol to be more acceptable on average than Site 2 participants, given a total survey mean of 3.17 versus 2.60. Even so, 2.60 corresponds to a response category between acceptable and very acceptable, and compares favorably to TAP survey results from other studies. For instance, when testing the perceived acceptability of two discrete depression treatments, Houle et al. (2013) found overall TAP scale means to equate to 2.4 and 2.2, respectively. Also, in a TAP survey development study (Sidani et al., 2009), participants produced overall

scale means ranging from 1.96 to 2.72 when assessing a behavioral health intervention targeting insomnia.

Finally, our finding that none of the 112 patients who completed the SBIRT protocols required a calming activity at the conclusion of services is consistent with research showing that trauma-related questionnaires generally do not prompt inordinate levels of participant distress (e.g., Black, Kresnow, Simon, Arias, & Shelley, 2006). We want to underscore that some level of reactivity to trauma assessments might be normative and even therapeutic among trauma survivors (Briere & Scott, 2015). As such, we embedded our trauma screeners within a patient-centered, motivationally based brief intervention to validate, contain, and channel patient reactions.

Compliance

Patient compliance with health, behavioral health, or mental health treatments represents a central concern for providers. Estimates of compliance are hard to come by because relatively few studies are published, but in a review of the literature, Montoya (2006) cited acceptance rates for some mental and behavioral health services as low as 38.1%. Completion rates for behavioral and mental health services can, in turn, reach lows of 50% or so among those enrolled (Topitzes et al., 2015). In this study, the combined SBIRT and T-SBIRT protocols yielded acceptance and completion rates of 100%. We surmise that these results are attributable to several key factors, some of which have been identified in the literature as potential predictors of patient compliance and adherence: (a) a focus on rapport building and motivational enhancement, (b) brief intervention translating into low patient burden, and (c) well-conceived in-clinic referral procedures (Martin, Williams, Haskard, & DiMatteo, 2005).

Treatment integrity

When conducting a thorough review of health behavior treatments, Borrelli and colleagues (2005) found that only 53 out of 342 studies or 15.5% of their sample reported high rates of treatment integrity; that is, instances in which providers met or exceeded a threshold of 80% adherence to an integrity checklist. By these standards, the adherence rate for T-SBIRT, 97.2%, was very high. Treatment adherence reached such a rate in our study for perhaps three reasons: (a) T-SBIRT is a brief intervention imposing minimal burden on providers; (b) the model design was easy to follow and logically sequenced, as it was founded on established theory, published research, and validated practices; and (c) providers participated in extensive prestudy training along with ongoing weekly supervision.

Intended outcome

Patient acceptance of a referral to a mental or behavioral health treatment provider represents one intended proximal outcome of the T-SBIRT model. In our study, 62.5% of all participants verbally accepted such a referral, a result that yields several lessons. First, it appears that the brief intervention succeeded in addressing a meaningful issue for the majority of participants. Second, traditional SBIRT typically generates referral to brief or specialty treatment at rates ranging from 25% to 47% (Chan, Huang, Sieu, & Unützer, 2013; Madras et al., 2009). Therefore, our findings provide preliminary indications that combining T-SBIRT with SBIRT might increase referral rates to some form of treatment for all participants.

Also, referral acceptance rates increased significantly as alcohol and PTSD risk rose among our study participants. To specify, almost 75% of our patient participants at risk for hazardous or harmful alcohol use accepted a treatment referral, suggesting that T-SBIRT could improve intended SBIRT outcomes among this category of drinkers. Rates of referral acceptance were even higher among study participants with probable alcohol use disorder (82.6%). This is noteworthy as the traditional SBIRT model has been found to confer little benefit to those at risk for alcohol use disorder and in need of specialty treatment (Glass et al., 2015). Combining SBIRT with a trauma module might help address this model weakness. Finally, rates of referral acceptance were highest among the group that produced positive PTSD and AUDIT screening results, 93.9%, providing evidence that patients at risk for cooccurring PTSD and alcohol misuse were especially likely to accept referrals. The model worked as intended in this trial.

Limitations

Although our study provides unique insights into the feasibility of complementing traditional SBIRT services with a trauma module, several limitations qualify the results. First, although we ensured confidentiality of respondents' data, service providers also administered the patient acceptability surveys, potentially resulting in socially desirable responses to items. Second, caution is needed when generalizing study results given that SBIRT and T-SBIRT were only offered to a portion of clinic patients based on service provider availability and patient alcohol misuse risk. Because SBIRT was not delivered universally as designed and the sample was not gathered through random procedures, our ability to generalize results to low-income patients of community-based health clinics or even to patients at risk for alcohol misuse is compromised.

Third, due to the date of study initiation, the PTSD screener used within the T-SBIRT protocol reflected *DSM–IV* versus *DSM–5* symptom criteria. Future iterations of T-SBIRT will integrate a *DSM–5*-based PTSD screener;

however, findings are not expected to diverge significantly considering recent epidemiological research, which indicated that PTSD prevalence rates do not vary notably if either *DSM–IV* or *DSM–5* criteria are used to determine the presence of disorder (Kilpatrick et al., 2013). Fifth, we did not analyze results from a drug abuse screening test, assessing the relevance of T-SBIRT for drug misuse; however, future research should include such explorations. Finally, our results derive from a nonexperimental feasibility study. Even our intended outcome, referral acceptance, is proximal, does not equate to a patient following through on a referral, and reflects a significant limitation of our data.

CONCLUSION

Our results indicate that it is feasible to implement T-SBIRT together with traditional SBIRT within community health clinics serving low-income minority patients. More specifically, our findings suggest that not only is T-SBIRT a suitable and acceptable service, but that it has the potential to yield high rates of referrals to mental and behavioral health treatment for low-income, minority patients presenting with substance misuse including probable alcohol use disorder, traumatic stress, or both. Results align with previous research indicating that mental health treatment might not be stigmatizing for minorities when integrated within primary care (Roberts et al., 2008). Therefore, we conclude that implementing T-SBIRT within community-based primary care clinic settings has the potential to enhance traditional SBIRT outcomes for groups at risk for health disparities who might not benefit from SBIRT alone; that is, low-income patients of color with alcohol misuse or alcohol use disorder.

Although we cannot know if our results generalize beyond settings similar to those included in this study, we would suggest that social workers implement and test T-SBIRT in multiple community-based settings and with an array of service populations. Because trauma is relevant for adults of all socioeconomic backgrounds, we believe that T-SBIRT can enhance SBIRT outcomes for patients of all economic strata and racial or ethnic identities. By improving traditional SBIRT outcomes, T-SBIRT could play a key role in meeting the Grand Challenge of reducing alcohol misuse at the population level, improving the efficacy of social workers and other allied professionals who promote integrated health care, and facilitating interdisciplinary collaboration among health professionals. Future trials should test T-SBIRT outcomes such as utilization of mental health services, engagement in primary health care, and reduction of alcohol misuse and trauma symptoms.

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REFERENCES

Agerwala, S. M., & McCance-Katz, E. F. (2012). Integrating Screening, Brief Intervention, and Referral to Treatment (SBIRT) into clinical practice settings: A brief review. *Journal of Psychoactive Drugs*, *44*, 307–317. doi:10.1080/02791072.2012.720169

Arain, M., Campbell, M. J., Cooper, C. L., & Lancaster, G. A. (2010). What is a pilot or feasibility study? A review of current practice and editorial policy. *BMC Medical Research Methodology*, *10*(1), 67. doi:10.1186/1471-2288-10-67

Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *The Alcohol Use Disorders Identification Test (AUDIT): Guidelines for use in primary care*. Geneva, Switzerland: World Health Organization.

Babor, T. F., McRee, B. G., Kassebaum, P. A., Grimaldi, P. L., Ahmed, K., & Bray, J. (2007). Screening, Brief Intervention, and Referral to Treatment (SBIRT): Toward a public health approach to the management of substance abuse. *Substance Abuse*, *28*(3), 7–30. doi:10.1300/J465v28n03_03

Begun, A., Clapp, J. & The Alcohol Misuse Grand Challenge Collective. (2016). Reducing and preventing alcohol misuse and its consequences: A Grand Challenge for social work. *The International Journal of Alcohol and Drug Research*, *5*(2), 73–83. doi:10.7895/ijadr.v5i2.223

Black, M. C., Kresnow, M., Simon, T. R., Arias, I., & Shelley, G. (2006). Telephone survey respondents' reactions to questions regarding interpersonal violence. *Violence and Victims*, *21*, 445–459. doi:10.1891/0886-6708.21.4.445

Bliss, D. L., & Pecukonis, E. (2009). Screening and brief intervention practice model for social workers in non-substance-abuse practice settings. *Journal of Social Work Practice in the Addictions*, *9*(1), 21–40. doi:10.1080/15332560802646604

Borrelli, B., Sepinwall, D., Ernst, D., Bellg, A. J., Czajkowski, S., Breger, R., … Resnick, B. (2005). A new tool to assess treatment fidelity and evaluation of treatment fidelity across 10 years of health behavior research. *Journal of Consulting and Clinical Psychology*, *73*, 852–860. doi:10.1037/0022-006X.73.5.852

Bowen, D. J., Kreuter, M., Spring, B., Cofta-Woerpel, L., Linnan, L., Weiner, D., … Fernandez, M. (2009). How we design feasibility studies. *American Journal of Preventive Medicine*, *36*, 452–457. doi:10.1016/j.amepre.2009.02.002

Briere, J. N., & Scott, C. (2015). *Principles of trauma therapy: A guide to symptoms, evaluation, and treatment*. Los Angeles, CA: Sage.

Carlson, E. B. (2001). Psychometric study of a brief screen for PTSD: Assessing the impact of multiple traumatic events. *Assessment*, *8*, 431–441. doi:10.1177/107319110100800408

Carlson, E. B., Smith, S. R., Palmieri, P. A., Dalenberg, C., Ruzek, J. I., Kimerling, R., … Spain, D. A. (2011). Development and validation of a brief self-report measure of trauma exposure: The Trauma History Screen. *Psychological Assessment*, *23*, 463–477. doi:10.1037/a0022294

Chan, Y.-F., Huang, H., Sieu, N., & Unützer, J. (2013). Substance screening and referral for substance abuse treatment in an integrated mental health care program. *Psychiatric Services*, *64*(1), 88–90. doi:10.1176/appi.ps.201200082

Debell, F., Fear, N. T., Head, M., Batt-Rawden, S., Greenberg, N., Wessely, S., & Goodwin, L. (2014). A systematic review of the comorbidity between PTSD and alcohol misuse. *Social Psychiatry and Psychiatric Epidemiology*, *49*, 1401–1425. doi:10.1007/s00127-014-0855-7

Finn, C. A., & Sladeczek, I. E. (2001). Assessing the social validity of behavioral interventions: A review of treatment acceptability measures. *School Psychology Quarterly*, *16*, 176–206. doi:10.1521/scpq.16.2.176.18703

Ford, J. D., Hawke, J., Alessi, S., Ledgerwood, D., & Petry, N. (2007). Psychological trauma and PTSD symptoms as predictors of substance dependence treatment outcomes. *Behaviour Research and Therapy*, *45*, 2417–2431. doi:10.1016/j.brat.2007.04.001

Glass, J. E., Hamilton, A. M., Powell, B. J., Perron, B. E., Brown, R. T., & Ilgen, M. A. (2015). Specialty substance use disorder services following brief alcohol intervention: A meta-analysis of randomized controlled trials. *Addiction*, *110*, 1404–1415. doi:10.1111/add.12950

Houle, J., Villaggi, B., Beaulieu, M.-D., Lespérance, F., Rondeau, G., & Lambert, J. (2013). Treatment preferences in patients with first episode depression. *Journal of Affective Disorders*, *147*(1–3), 94–100. doi:10.1016/j.jad.2012.10.016

Humphreys, K., & McLellan, A. T. (2010). Brief intervention, treatment, and recovery support services for Americans who have substance use disorders: An overview of policy in the Obama administration. *Psychological Services*, *7*, 275–284. doi:10.1037/a0020390

IBM. (2012). *IBM SPSS statistics for Windows, Version 21.0*. Armonk, NY: IBM.

Israel, Y., Hollander, O., Sanchez-Craig, M., Booker, S., Miller, V., Gingrich, R., & Rankin, J. G. (1996). Screening for problem drinking and counseling by the primary care physician–nurse team. *Alcoholism: Clinical and Experimental Research*, *20*, 1443–1450. doi:10.1111/acer.1996.20.issue-8

Kilpatrick, D. G., Resnick, H. S., Milanak, M. E., Miller, M. W., Keyes, K. M., & Friedman, M. J. (2013). National estimates of exposure to traumatic events and PTSD prevalence using DSM–IV and DSM–5 criteria. *Journal of Traumatic Stress*, *26*, 537–547. doi:10.1002/jts.2013.26.issue-5

Kramer, M. D., Polusny, M. A., Arbisi, P. A., & Krueger, R. F. (2014). Comorbidity of PTSD and SUDs: Toward an etiologic understanding. In P. Ouimette & J. P. Read (Eds.), *Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders* (2nd ed., pp. 53–75). Washington, DC: American Psychological Association.

Madras, B. K., Compton, W. M., Avula, D., Stegbauer, T., Stein, J. B., & Clark, H. W. (2009). Screening, brief interventions, referral to treatment (SBIRT) for illicit drug and alcohol use at multiple healthcare sites: Comparison at intake and 6 months later. *Drug and Alcohol Dependence*, *99*(1–3), 280–295. doi:10.1016/j.drugalcdep.2008.08.003

Martin, L. R., Williams, S. L., Haskard, K. B., & DiMatteo, M. R. (2005). The challenge of patient adherence. *Therapeutics & Clinical Risk Management*, *1*, 189–199.

McCauley, J. L., Killeen, T., Gros, D. F., Brady, K. T., & Back, S. E. (2012). Posttraumatic stress disorder and co-occurring substance use disorders: Advances in assessment and treatment. *Clinical Psychology: Science and Practice*, *19*, 283–304.

Monahan, C. J., McDevitt-Murphy, M. E., Dennhardt, A. A., Skidmore, J. R., Martens, M. P., & Murphy, J. G. (2013). The impact of elevated posttraumatic stress on the efficacy of brief alcohol interventions for heavy drinking college students. *Addictive Behaviors*, *38*, 1719–1725. doi:10.1016/j.addbeh.2012.09.004

Montoya, I. D. (2006). Treatment compliance in patients with co-occurring mental illness and substance abuse. *Psychiatric Times*, *23*(1), 23.

Najavits, L. M., & Kanukollu, S. (2005). It can be learned, but can it be taught? Results from a state-wide training initiative on PTSD and substance abuse. *Journal of Dual Diagnosis*, *1*(4), 41–51. doi:10.1300/J374v01n04_05

O'Donnell, A., Anderson, P., Newbury-Birch, D., Schulte, B., Schmidt, C., Reimer, J., & Kaner, E. (2014). The impact of brief alcohol interventions in primary healthcare: A systematic review of reviews. *Alcohol and Alcoholism*, *49*(1), 66–78. doi:10.1093/alcalc/agt170

Prins, A., Ouimette, P., Kimerling, R., Cameron, R. P., Hugelshofer, D. S., Shaw-Hegwer, J., & Sheikh, J. I. (2003). The Primary Care PTSD Screen (PC-PTSD): Development and operating characteristics. *Primary Care Psychiatry*, *9*, 9–14. doi:10.1185/135525703125002360

Reinert, D. F., & Allen, J. P. (2002). The Alcohol Use Disorders Identification Test (AUDIT): A review of recent research. *Alcoholism: Clinical and Experimental Research*, *26*, 272–279. doi:10.1111/acer.2002.26.issue-2

Roberts, A. L., Gilman, S. E., Breslau, J., Breslau, N., & Koenen, K. C. (2011). Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychological Medicine*, *41*(1), 71–83. doi:10.1017/S0033291710000401

Roberts, K. T., Robinson, K. M., Topp, R., Newman, J., Smith, F., & Stewart, C. (2008). Community perceptions of mental health needs in an underserved minority neighborhood. *Journal of Community Health Nursing*, *25*, 203–217. doi:10.1080/07370010802421202

Salvalaggio, G., Dong, K., Vandenberghe, C., Kirkland, S., Mramor, K., Brown, T., … Wild, T. C. (2013). Enhancing screening, brief intervention, and referral to treatment among socioeconomically disadvantaged patients: Study protocol for a knowledge exchange intervention involving patients and physicians. *BMC Health Services Research*, *13*, 1–11. doi:10.1186/1472-6963-13-108

Sanetti, L. M. H., & Kratochwill, T. R. (2009). Toward developing a science of treatment integrity: Introduction to the special series. *School Psychology Review*, *38*, 445–459.

Shield, K. D., Parry, C., & Rehm, J. (2013). Focus on: Chronic diseases and conditions related to alcohol use. *Alcohol*, *85*, 155–173.

Sidani, S., Epstein, D. R., Bootzin, R. R., Moritz, P., & Miranda, J. (2009). Assessment of preferences for treatment: Validation of a measure. *Research in Nursing & Health*, *32*, 419–431. doi:10.1002/nur.v32:4

Topitzes, J., Mersky, J. P., & McNeil, C. B. (2015). Implementation of parent–child interaction therapy within foster care: An attempt to translate an evidence-based program within a local child welfare agency. *Journal of Public Child Welfare*, *9* (1), 22–41. doi:10.1080/15548732.2014.983288

APPENDIX

T-SBIRT Protocol Integrity Checklist

1. Introduction of provider:

Example: "Hi, I'm (name), an intern in Behavioral Health. I'm working with (Primary Health Provider) as part of your client care team." Done: _____

2. Ask permission to implement substance use and T-SBIRT protocols

Example: "I'd like to talk to you briefly about any alcohol or drug use, stress or related concerns—things that can affect your physical health. Is that okay?" Done: _____

Check if patient refused: _____

3. mplement substance use SBIRT protocol Done: _____

AUDIT Score: _____

4. Introduce stress and trauma, and their relationship to health

Example: "They say that stress from daily life or from traumatic events can have a significant impact not only on mental health but on physical health as well." Done: _____

5. Ask about specific stressor in patient's life.

"What are the top stressors in your life right now? List them." Done: _____

6. Ask about exposure to potential traumatic events:

Example: "How about any trauma? Anything from your adult past or your childhood?"

(Start with open-ended question, then provide examples from list, continue depending on willingness to talk. Document exposure below with an x or check for your own purposes.)

A. A really bad car, boat, train, or airplane accident _____
B. A really bad accident at work or home _____
C. A hurricane, flood, earthquake, tornado, or fire _____
D. Hit or kicked hard enough to injure—as a child _____
E. Hit or kicked hard enough to injure—as an adult _____
F. Forced or made to have sexual contact—as a child _____
G. Forced or made to have sexual contact—as an adult _____
H. Attack with a gun, knife, or weapon _____

I. During military service—seeing something horrible or being badly scared _____
J. Sudden death of close family or friend _____
K. Seeing someone die suddenly or get badly hurt or killed _____
L. Some other sudden event that made you feel very scared, helpless, or horrified _____
M. Sudden move or loss of home and possessions _____
N. Suddenly abandoned by spouse, partner, parent, or family _____
O. Others_____ _____

Done: _____

7. Ask about trauma symptoms

"Sometimes people can actually develop posttraumatic stress symptoms from these kinds of experiences. We can even develop posttraumatic stress symptoms from traumas we can't remember. In the past month, have you ever …"
(check all that apply):

A. … had nightmares about an upsetting event or thought about the event when you did not want to? _____
B. … tried hard not to think about the upsetting event or went out of your way to avoid situations that reminded you of it? _____
C. … were constantly on guard, watchful, or easily startled? _____
D. … felt numb or detached from others, activities, or your surroundings? _____

Done: _____

8. Ask about positive coping around stress and/or trauma:

"What have been some of your positive ways of coping with stress or trauma?"
(Reflective listening, support positive mechanisms) Done: _____

9. Ask about coping that may have led to problems:

"What have been some unhelpful ways you may have dealt or coped with stress or trauma?"
(Reflective listening enhancing motivation to get help) Done: _____

10. Help prepare patient for referral by highlighting connections between traumatic stress and ongoing behavioral health problems.

"Often it can be hard to stop using these sometimes unhelpful coping mechanisms unless the stress and trauma are addressed. (What do you think)?"
(Reflective listening enhancing motivation to get help) Done: _____

11. Gauge motivation for referral if applicable (patient may not need one if no problems)

"Over the past few years, significant progress has been made in finding ways for people to deal with stress and trauma. We do offer supportive services here. Do you think you may have interest in seeing someone in order to talk further about these topics?"

Patient stated yes _____
Done: _____

12. Optional: Make a referral if applicable (patient stated yes and you will give internal or external referral) Done: _____
13. Optional: Offer the patient the PTSD pamphlet: Done: _____
14. Please mark the line that applies:
    Patient accepted SBIRT services but did not complete the T-SBIRT protocol _____
    Patient accepted SBIRT services and completed protocol _____
15. Calming or containment exercise used: No _____
    Yes _____