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BRIEF REPORT

## Development and evaluation of two instruments for assessing screening, brief intervention, and referral to treatment (SBIRT) competency

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### ABSTRACT

**Background:** Screening, brief intervention, and referral to treatment (SBIRT) is shown to be effective in identifying, intervening with, and making appropriate referrals for patients with unhealthy alcohol use. SBIRT training consists of knowledge-based and skill-based components and has increased the use of screening and intervention skills in clinical settings. This article reports on the development and evaluation of 2 SBIRT proficiency checklists for use across institutions to assess SBIRT skills in both simulated and clinical encounters. **Methods:** A national panel of 16 experts identified 137 discrete SBIRT skills items for the checklists. From this final list, 2 proficiency checklists were derived: the SBIRT Proficiency Checklist (SPC), composed of 22 questions for videotaped interviews, and the Clinical SBIRT Proficiency Checklist (CSPC), composed of 13 questions for direct clinical observation. An evaluation was conducted to test the reliability of the SPC and to assess the utility of the CSPC. **Results:** Two checklists for assessing SBIRT proficiency were developed by a collaborative workgroup. Fleiss' kappa analyses indicated moderate agreement. In addition, faculty recorded satisfaction with the CSPC for assessing residents on their SBIRT performance during clinical encounters. **Conclusions:** The SPC and the CSPC are practical tools for assessing competence with SBIRT and are easily integrated as standard instruments in a wide range of training settings. Future advancements to the checklists and their evaluation include modification of the SPC rating scale to be consistent with the CSPC, developing a training program for using the checklists, and further testing to improve interrater reliability.

### KEYWORDS

Assessment; proficiency checklist; SBIRT; substance abuse

### Introduction

Although unhealthy use of alcohol and drugs continues to be a common clinical issue with costly socioeconomic consequences, medical residents receive limited or less than adequate training in the clinical identification and treatment of these disorders.<sup>8</sup> To address this issue, the Substance Abuse and Mental Health Services Administration (SAMHSA) Center for Substance Abuse Treatment (CSAT) funded 17 grantees nationwide to develop and implement screening, brief intervention, and referral to treatment (SBIRT) training for medical residents over a 5-year period beginning in 2008 (SAMHSA Request for Application TI-08-003). The SBIRT training programs across these sites were modeled on existing evidence-based curricula<sup>6</sup> and included didactic (knowledge-based) components and clinical-experiential (skill-based) components. Whereas knowledge may be evaluated using quizzes or brief tests, the evaluation of skill acquisition requires an assessment instrument developed specifically to evaluate SBIRT skills. A small number of SBIRT skills assessment instruments exist, but many have not been validated<sup>9</sup> and others are specific to SBIRT approaches developed at individual institutions and thus cannot be disseminated for widespread use.<sup>4,10–12</sup> Because approaches to providing SBIRT

services vary across the United States, the authors were interested in identifying a common core of SBIRT skills and creating a universal instrument to evaluate competency with SBIRT skills. During the June 2010 SBIRT Grantee Meeting, participants from Baylor College of Medicine, Mercer University School of Medicine, and the University of Pittsburgh discussed the need for SBIRT skills checklists and collaboratively submitted a formal Technical Assistance request to SAMHSA to begin the Proficiency Checklist Workgroup (PCW).

The purpose of this collaborative effort was to develop (Phase I) and evaluate (Phase II) 2 SBIRT proficiency checklists for broad use, in the context of health professional SBIRT training and competency evaluation. Phase I included recruiting an expert panel followed by creating and rating SBIRT core checklist elements. Phase II included evaluating the reliability of the longer checklist (SBIRT Proficiency Checklist [SPC]) and assessing the utility of the shorter clinical version (Clinical SBIRT Proficiency Checklist [CSPC]).

### Methods

Instrument development and evaluation was based on a model used by Martz<sup>13</sup> that included 2 phases: (1) expert panel review

and rating of SBIRT core elements and (2) a two-pronged field study using the developed instruments. In Phase I, a panel of expert SBIRT professionals were recruited for developing and refining a master proficiency checklist. Qualifications for the SBIRT expert panel included involvement with training, practicing, precepting, and applying SBIRT. Those who exhibited strong evidence of these criteria were nominated to a final panel of 16 experts. Also in this phase, the PCW identified the need for 2 different proficiency checklists: a longer, more comprehensive instrument for assessing SBIRT simulations—the SPC, and a shorter instrument for providing immediate feedback when precepting medical residents in clinical settings—the CSPC. Phase II of the project was an evaluation of these checklists.

### Checklist development

The PCW identified 5 core SBIRT domains: Screening (SC), Brief Intervention (BI), Referral to Treatment (RT), Follow-up (FU), and Motivational Interviewing (MI) spirit. Specific skills related to these categories were gathered from SBIRT training programs across the United States into a composite list of 137 SBIRT skills. A survey was distributed to the SBIRT experts for rating these skills in regard to 8 elements<sup>13</sup>: parsimony, ease of use, pertinence, fairness, applicability, clarity, comprehensiveness, and concreteness. Analysis of data from this survey and elimination of overlapping items resulted in a reduction to 22 discrete skills. These resulting items were adapted to create 2 different proficiency checklists.

First, the SPC would act as a more comprehensive instrument for assessing SBIRT simulations during training. The SPC contained all 22 items rated on a 5-point Likert scale (1 = not met to 5 = met). Six video simulations covering 3 scenarios of providers interacting with patients presenting with unhealthy substance use were developed and posted on a private SBIRT workgroup page in a public forum. Preceptors viewed the 6 video simulations and assessed SBIRT competency using the SPC.

Second, although the SPC could be used for the assessment of clinical SBIRT encounters, PCW members recognized the need for a shorter checklist for the clinical setting. Through an iterative process of selection, PCW members reduced the redundancy and increased parsimony by combining individual questions to produce a second instrument. The CSPC, consisting of 13 items rated as either “present” or “not present,” was created for providing immediate feedback when precepting medical residents in clinical settings (Figure 1).

### Checklist evaluation

The proficiency checklists were evaluated through a multisite, institutional review board (IRB)-approved study between Baylor College of Medicine, Mercer University School of Medicine, and the University of Pittsburgh, which also served as the coordinating site for this study. Risk to human subjects was determined to be minimal, and informed consent was obtained through an IRB-approved written consent form.

The evaluation study began in January 2014 after a final list of preceptors was determined by the PCW. These 15 preceptors

were SBIRT Champions affiliated with 1 of the 3 PCW institutions. Each preceptor was sent a written procedure, consent forms, both checklists, and a CSPC satisfaction survey.

During the first stage of the checklist evaluation study, the preceptors completed the SPC while viewing simulations of medical professionals engaged in SBIRT with patients. It is important to note that these preceptors were not specifically trained to reliability in using the rating scales; rather, they used their prior training in SBIRT to rate the simulations.

In the subsequent stage of the evaluation study, preceptors were instructed to observe medical residents engaged in SBIRT with patients in clinical settings. The preceptors utilized the CSPC to evaluate residents’ performance and provide feedback, followed by completion of a CSPC satisfaction survey. Data from the checklists and completed satisfaction surveys were received by the research team through April 2014, entered into a database, and analyzed.

### Interrater reliability analyses

The interrater reliability (IRR)<sup>14</sup> of the preceptors’ ratings on the SPC was analyzed for 6 video simulations of each domain of SBIRT delivery: SC, BI, RT, FU, and MI. The comparison of multiple preceptors required use of Fleiss’ kappa.<sup>15</sup> The full range of the rating scale (1–5) builds in artificial disagreement and depresses kappas; therefore, Likert ratings for each component were reclassified as binary outcomes: 1, 2, or 3 was recoded as 0; and 4 or 5 was recoded as 1 (positive rating). Fleiss’ kappa was calculated jointly for all questions, preceptors, and video subjects (Table 1). Agreement by individual question and component with counts of positive ratings was also prepared. Kappas were recalculated after removing each individual component, preceptor, or simulation.

### Satisfaction

After using the CSPC to observe residents’ SBIRT encounters, each preceptor completed a satisfaction survey with a 7-point Likert scale from *Strongly disagree* to *Strongly agree* for the following 8 statements: *The checklist was easy to use; It is feasible to use this checklist in a clinical setting; The checklist was easy to understand; The checklist was appropriate for evaluating residents’ skills in SBIRT; The checklist was comprehensive; The checklist can likely be used across residency sites; The checklist is concise; and The checklist is impartial and unbiased.* Open-ended comments could also be provided.

### Results

Fourteen preceptors contributed data for analysis. Of these, 13 completed the SPC for all 6 simulations, 12 provided demographic and background information, and 11 provided CSPC satisfaction surveys. The affiliations of the 13 preceptors were as follows: 2 from the University of Pittsburgh; 3 from Baylor; and 8 from Mercer. Seven were male and 6 female. Of those who provided demographic information, most (92%) were white, the median age was 55 (range: 43–64), and most (92%) had at least 15 years of experience in their specialty. A variety of disciplines were represented, with 42% family medicine, 17%

**SBIRT Proficiency Checklist- Clinical Version**

<b>Screening (3 items)</b>	<b>Present</b>	<b>Not Present</b>
The practitioner accurately assesses quantity & frequency of alcohol and/or drug use.	<input type="checkbox"/>	<input type="checkbox"/>
Practitioner accurately identifies the patient's level of risk related to their alcohol or other drug use using an appropriate evidence based screening instrument.	<input type="checkbox"/>	<input type="checkbox"/>
Practitioner assesses possible consequences of the patient's behavior, such as physical, psychosocial and other consequences.	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments</b>		
<input type="text"/>		
<b>Brief Intervention (4 items)</b>	<b>Present</b>	<b>Not Present</b>
Practitioner asks permission to provide feedback about the patient's substance use.	<input type="checkbox"/>	<input type="checkbox"/>
Practitioner uses reflection and/or open-ended questions to allow patient to react to screening result.	<input type="checkbox"/>	<input type="checkbox"/>
Practitioner provides feedback about the risks associated with patient's substance use behavior.	<input type="checkbox"/>	<input type="checkbox"/>
Practitioner negotiates a goal with the patient based on steps he/she is willing to take.	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments</b>		
<input type="text"/>		
<b>Referral to Treatment (2 items)</b>	<b>Present</b>	<b>Not Present</b>
Practitioner recognizes the patient's need for substance treatment based on their screening score and/or medical/behavioral factors.	<input type="checkbox"/>	<input type="checkbox"/>
Practitioner suggests the use of specific community and specialty resources.	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments</b>		
<input type="text"/>		
<b>Follow-Up (1 item)</b>	<b>Present</b>	<b>Not Present</b>
Practitioner arranges appropriate follow-up (MD follow-up, referral to treatment, counseling, medication, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments</b>		
<input type="text"/>		
<b>Motivational Interviewing Spirit (3 items)</b>	<b>Present</b>	<b>Not Present</b>
Practitioner summarizes patient's stated reasons for change.	<input type="checkbox"/>	<input type="checkbox"/>
Practitioner negotiates a treatment plan in a collaborative manner.	<input type="checkbox"/>	<input type="checkbox"/>
Practitioner affirms the patient's strengths, ideas &/or successes	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments</b>		
<input type="text"/>		

Figure 1. Clinical SBIRT Proficiency Checklist (CSPC).

general internal medicine, and the remaining split between psychology, social work, therapy, and psychiatry. A majority (64%) practiced in an urban setting.

Of the 18 residents who were observed clinically, 10 were male and 8 female. The median age was 34 (range: 26–48), and their racial designations were varied: 25% white; 25% black; 40% Asian, Hispanic, or multiracial; and 10% no answer. Most (78%) specialized in family medicine, and all had 1 to 3 years of

experience in their specialty. The clinical settings were 39% urban, 39% suburban, and 22% rural.

Overall agreement (Table 1) was moderate with a kappa of 0.42 ( $P < .001$ ). To distinguish the underlying causes for disagreement, responses amongst preceptors, checklist question groups, individual checklist questions, and videos were analyzed to identify specific instances of disagreement and patterns within these instances. Interrater reliability analyses performed

**Table 1.** Fleiss' kappa for overall agreement.

	kappa	Z score	P value <sup>a</sup>
<b>Site</b>			
All	0.416	45.56	.000
Baylor	0.340	9.57	.000
Mercer	0.425	25.83	.000
University of Pittsburgh	0.487	5.69	.000
<i>Item removed from analysis</i>			
<b>Component</b>			
Screening (SC)	0.403	39.92	.000
Brief Intervention (BI)	0.470	41.73	.000
Motivational Interviewing (MI)	0.421	39.32	.000
Referral to Treatment (RT)	0.372	32.03	.000
Follow-up (FU)	0.439	45.85	.000
<b>Preceptor</b>			
1	0.439	44.57	.000
2	0.402	40.77	.000
3	0.415	42.11	.000
4	0.431	43.74	.000
5	0.416	42.18	.000
6	0.406	41.19	.000
7	0.426	43.23	.000
8	0.406	41.23	.000
9	0.434	44.09	.000
10	0.413	41.87	.000
11	0.416	42.22	.000
12	0.404	40.98	.000
13	0.405	41.12	.000
14	0.404	41.05	.000
<b>Video</b>			
1	0.411	41.12	.000
2	0.394	39.47	.000
3	0.402	40.18	.000
4	0.437	43.93	.000
5	0.446	44.66	.000

<sup>a</sup>P value is for test in which agreement is greater than random chance (kappa = 0).  $p < .001$ .

by dropping individual components also yielded kappas in the moderate agreement range (>0.40).

Based on additional analyses, there were several individuals responsible for a marginal decrease in agreement; however, there were no characteristics of these preceptors that indicated why they differed. Removing RT from the analyses caused agreement to drop to 0.39 ( $P < .000$ ), whereas removing BI raised the agreement to 0.47. Further examination of the BI questions revealed inconsistency with 2 BI questions: *Practitioner asks permission to provide feedback about the patient's substance use*; and *Practitioner uses reflection and/or open-ended questions to allow patient to react to screening result*.

Kappas were calculated to examine the overall agreement between the preceptors within each institution (Table 1). These analyses yielded kappas in the moderate agreement range (>0.40) for the University of Pittsburgh and Mercer and lower for Baylor (0.34).

Evaluation of results from the CSPC satisfaction survey showed preceptors' satisfaction with this checklist. Agreement of survey statements was favorable, averaging 5.8 to 6.5, on a Likert scale of 1 (strongly disagree) to 7 (strongly agree). The impartial and unbiased attribute of the checklists was rated highest amongst preceptors.

Responses to open-ended questions provided recommendations for improvement of the instrument, including the need for an "N/A" (not applicable) box in the RT section of the

checklist, since not all patients undergoing SBIRT are appropriate for referral and in the MI section regarding negotiating a treatment plan.

## Discussion

This project was successful in developing and beginning the evaluation of 2 checklists for assessing SBIRT proficiency across 3 family medicine residency programs in different regions of the United States. For the SPC, interrater comparisons of reliability (Fleiss' kappa) demonstrated moderate agreement between preceptors within each of the programs and across these programs, indicating that the extent of agreement was similar across programs. Given that training differed significantly between these programs and preceptors were not trained to reliability on the scales, the moderate agreement demonstrated in the use of this instrument suggests that it would be reasonable to use as a support to SBIRT training.

Future studies need to compare the reliability of the scales after preceptors have been trained to a reliability standard. In addition, validity of the scale needs to be further established by comparing to other SBIRT rating scales. Comments from preceptors with less agreement often revealed an accurate understanding of the component being assessed and the rating principles, but suggested that the individual preceptors may have chosen to err on either a liberal or conservative judgment in assessing specific behaviors. Assessing the impact of training on using the checklists is another area for potential further study.<sup>16</sup> Future studies should also focus on the use of this instrument with other health care provider trainees (i.e., nurses, pharmacists, social workers, etc.).

Preceptors indicated that the CSPC was appropriate, impartial, and unbiased and permitted them to provide individualized guidance to medical resident learners, particularly in the case of nuanced or borderline ratings. An examination of preceptor feedback contained on the instruments demonstrated how the instrument provided an effective opportunity for the preceptor to point out the residents' strengths and areas for improvement. It is suggested that future studies evaluate the learners' satisfaction with being assessed through the CSPC.

The checklists provide 2 options for evaluating SBIRT proficiency. This preliminary evaluation suggests that these instruments may be appropriate for use with various SBIRT training programs and show promise for widespread use in competency assessment and provision of clinical feedback as dissemination of this evidence-based practice continues throughout the US health care system.

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## Author contributions

S. S., A. K., and L. L. collaborated with coauthors in research conception and design. J.P. S. and J. H. B. collaborated with coauthors in research conception and design, provided assistance with interpretation of results, and contributed to writing and revision of the manuscript. K. M. G. implemented the research study and contributed to writing and revision of the manuscript. J. L. P. provided overall management of the study, collaborated with coauthors in research conception and design, was responsible for managing the collection of data and the interpretation of results, and contributed to writing and revision of the manuscript. A. A. collaborated with coauthors on research design, data analysis, and writing and revision of the manuscript.

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