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Web-based SBIRT Skills Training for Health Professional Students and Primary Care Providers

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Abstract

We have developed and assessed two innovative, case-based, interactive training programs on substance abuse, one for health professional students on alcohol and one for primary care providers on SBIRT. Both programs build skills in substance abuse screening, brief intervention, and referral to treatment (SBIRT). Real-world effectiveness trials involving medical students (n=10); nursing students (n=60) were completed; trials involving primary care providers (n=65) are in progress during 2011. Medical students and nursing students had similarly low baseline scores on assessments that benefited from training: knowledge, confidence and clinical performance measured via an online standardized patient case and encounter note all improved post-training. Preliminary results indicate that practicing providers improved on knowledge, attitude, and brief intervention skill performance after a similar training. Results suggest that SBIRT skills can be improved with this model for case-based interactive training programs, and thus, that this training has the potential to impact patient outcomes.

Keywords

SBIRT; screening; brief intervention; referral to treatment; simulated clinical experience; simulated electronic medical record

INTRODUCTION

Primary care providers, including physicians, nurses, and allied health professionals, can have a significant impact on substance use problems through providing screening, brief interventions, and referral to treatment (SBIRT). Unfortunately, despite recommendations [1] [2] [3], providers screen fewer than half of their patients for tobacco use and fewer than one-third for alcohol use, and many providers are not conducting brief interventions [1] [2]. Now is the time to better prepare providers, especially providers-in-training, for effective screening, brief interventions, and appropriate referrals for patients who abuse alcohol, tobacco, and other drugs.

With funding from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Institute on Drug Abuse (NIDA), we designed and implemented two unique web-based, case-based interactive programs: 1) Treating Alcohol Problems via SBIRT (www.LaraSig.com) for health professional students, and 2) SBIRT Core Training Program: Brief Screening and Treatment (www.SBIRTTraining.com), for primary care providers. The aim of both programs is to increase competence and performance through training in how to

screen for and identify substance abuse, plan and implement tailored brief interventions, and improve care management for brief treatment and referral skills severe problem/addiction treatment.

METHODS

Curricula and program goals were developed based on clinical practice guidelines, expert input, and anticipated Joint Commission measures [4] (Table 1). Each program contains multiple modules with interactive, clinical choice case vignettes, patient dialogue examples (text and video options), and a brief didactic portion focused on clinical guidelines. Forums and a searchable resource database supplement the main program.

Clinical skill development is enhanced via the use of engaging interactive tools such as polls, multiple checkbox quizzes, and case-based decision making. The polls allow learners to “vote” on a clinical decision and view their colleagues’ responses. The checkbox quizzes reinforce key concepts. Clinical choice questions based on case vignettes enhance clinical decision making skills; learners work through a case vignette by selecting the “best” clinical choice at each stage. Tools were reviewed by consultants to ensure clinical appropriateness. Actively engaging the learner increases the effectiveness of the intervention.

The program focuses on a series of online simulated clinical experiences, with a simulated electronic medical record that includes history of present illness, pertinent medical and social history, and relevant laboratory results. Both a live actor and a ‘Clinical Decisions’ version of the standardized patient (SP) are available to accommodate learner preference. In the live actor version, a remote SP actor uses Internet based “chat”; the learner is the patient’s clinician. Post encounter, the learner completes an interactive patient encounter note based on the SOAP format, orders labs, and prescribe medications. As an alternative, learners work through a case vignette and answer clinical questions in a “choose your own adventure” style series of clinical decisions, with multiple paths available (Clinical Decisions).

We evaluated the student program in a longitudinal study in Spring 2011; preliminary results are summarized here. Students from one medical (n=10 students) and one nursing school (n=60 students) participated in a real-world effectiveness study using the modules. We employed a one group pre-test/post-test design to evaluate attitude, clinical skills, competence, and knowledge. The evaluation study was conducted completely on-line at www.LaraSig.com.

Assessment instruments were validated via a small pilot study (n=5) of medical students [5] and expert review (Table II). Adapting the Theory of Planned Behavior [6], we also measured attitudes, and self-efficacy via surveys to obtain a proxy measure of intended future behavior as well as current information on the impact of the program on student awareness of treating patients. Increase in clinical skill competence and performance was measured pre and post program via an SP case clinical skills assessment – students were asked open and closed-ended questions to screen and provide a brief intervention for the patient, then completed a patient encounter note (SOAP note). A satisfaction survey measured impact of the overall program.

Primary care providers are participating in a similar evaluation of the materials developed for providers in practice. Over 65- physicians, residents, nurse practitioners and physician assistants have participated in a pre-test/post-test evaluation of knowledge, competence, attitude and self-efficacy. These studies were exempt from IRB, as determined by the Clinical Tools, Inc. Institutional Review Board.

RESULTS

Knowledge increased pre to post program for both student groups (see Table III); nursing students scores increased by a modest 3%, while medical student scores increased 12%. Self-efficacy rose dramatically after the program, with only 10% rating their self-efficacy as good or excellent before the intervention, and over 60% rating themselves as good or excellent after (Table III). All modules met the criteria of average satisfaction of 4.0 or higher on a 5 point scale (1=strongly disagree, 5=strongly agree) at each assessed measure.

Qualitative data analysis of the clinical assessment and patient note for the SP were performed using a series of key words. A majority (70%) of medical students correctly answered or identified pre-assessment questions, and showed a greater comprehension of screening and brief intervention techniques on post-assessments. Nursing students also showed comprehension of basic screening and brief intervention concepts post-intervention. In general, medical students and nursing students correctly identified the differential diagnosis (80%/ 61%); most (100% and 81%) included items that could be used in a brief intervention (Table III).

Although analysis is ongoing, similar trends are being revealed with practicing physicians and nurses. In general, nursing baseline knowledge is lower than physician for the SBIRT topics, yet clinical skills in screening and brief intervention improve for both groups.

DISCUSSION

Overall, performance of all groups is improving after the intervention when compared to the baseline level. The biggest gains are seen in self-efficacy related to screening and providing brief interventions, indicating a positive program effect on perceived clinical skill and increasing the likelihood of behavior change. Difference between the group of nursing students and the group of medical students (albeit a small group) bear further investigation. Although baseline knowledge was comparable, gains in knowledge were greater for medical students than for nursing students in our sample. One explanation is that the assessment measures were not appropriately tailored to their domains of expertise; a second possibility is that nursing students may not yet appreciate the significant role that they will play as professionals in a SBIRT treatment approach. The preliminary results from our study of practicing nurses and practicing physicians suggest that there is less variation between the professions, but more variation within the groups, in all measures. Further analyses will provide detail and examine the impact of practice setting, years in practice, and specialty on the performance of the practicing providers. Interestingly, for both students and providers of all professions, the greatest gains in knowledge, competence, attitude and self-efficacy are in the topic area of “brief intervention.”

The use of an SP clinical assessment component allows a more complete view of learners’ areas of strength and weakness in clinical practice. Highlighting clinical skills has a clear effect on improving performance in those areas. Substance abuse is a serious public health concern; increased training and confidence in approaching substance abuse may improve patient care and positively impact patient health.

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Table I

Program Descriptions

Program	Treating Alcohol Problems via SBIRT (www.LaraSig.com)	SBIRT Core Training Program: Brief Screening and Treatment (www.SBIRTTraining.com)
Program Goal	To provide health profession students with the necessary knowledge and skills training to be able to confidently interview, assess, and counsel patients with alcohol use disorders.	The learner will be able to appropriately screen for and identify substance abuse, plan and implement a tailored brief intervention, improve care management and referral skills for brief treatment or severe problem/addiction treatment, and will apply the SBIRT approach to substance abuse problems at an advanced level by individualizing these clinical skills to different patients.
Program Audience	Health professional students	Primary care providers, including physicians, nurses, and allied health professionals
Program Module Listing	<ul style="list-style-type: none"> Screening, Assessment, and Diagnosis of Alcohol Abuse and Dependence Brief Intervention and Treatment Referral for Alcohol Abuse Improving Patient Outcomes Through Communication and Coordinated Care 	<ul style="list-style-type: none"> Brief and Effective Screening for Hazardous Substance Use Brief Intervention and Other Treatments Referral to Treatment and Follow-up Care SBIRT in Practice
Program Unique Features	<ul style="list-style-type: none"> Case vignettes illustrate and develop clinical skills Clinical assessment illustrates competence in clinical skill 	<ul style="list-style-type: none"> Clinical practice through online simulated clinical experience Self-assessment to elicit practice change Chance to develop “action plan” for implementation in practice

Table II
Student Program Evaluation Process

Assessment	Time Points	Method
Knowledge	Pre and post program	11 question multiple choice exam
Attitudes	Pre and post program	10 question Likert scale survey ^a
Confidence and Perceived Competence	Pre and post program	8 question Likert scale survey ^a
Clinical Skill Competence	Pre and post program	6 (pre) and 10 (post) question multiple-choice/long answer exam
Clinical Comprehension	Post program	Patient note with history, differential diagnosis, and treatment plan
Satisfaction	Post program	9 question Likert scale survey ^a

^aLikert surveys were on a 5-point scale (1=strongly disagree; 5=strongly agree)

Table III

Summary of Results

Assessment	Medical Students (n=10)	Nursing Students (n=60)
Knowledge	<ul style="list-style-type: none"> Pre = 68% Post = 79% (p=0.02) 	<ul style="list-style-type: none"> Pre = 65% Post = 69% (p=0.17)
Self-efficacy in Screening ^a	<ul style="list-style-type: none"> Pre avg. 2.9 (0% Good or Excellent, n=0) Post avg. 3.9 (60% Good or Excellent; n=6) 	<ul style="list-style-type: none"> Pre avg. 2.5 (8% Good or Excellent, n=5) Post avg. 3.7 (61% Good or Excellent, n=33)
Self-efficacy in Brief Intervention ^a	<ul style="list-style-type: none"> Pre avg. 2.9 (10% Good or Excellent, n=1) Post avg. 3.9 (60% Good or Excellent, n=6) 	<ul style="list-style-type: none"> Pre avg. 2.5 (10% Good or Excellent, n=6) Post avg. 3.7 (63% Good or Excellent, n=34)
Clinical Comprehension	<ul style="list-style-type: none"> 90% (n=9) identified patient history 80% (n=8) provided correct differential diagnosis 60% (n=6) included brief intervention or screening in diagnostic work-up 	<ul style="list-style-type: none"> 71% (n=35) identified patient history 67% (n=33) provided correct differential diagnosis

^a Average on a 5 point Likert scale (1=poor; 5=excellent)