INNOVATIONS IN EDUCATION AND CLINICAL PRACTICE

Investigation of a Brief Teaching Encounter Using Standardized Patients

Teaching Residents Alcohol Screening and Intervention

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OBJECTIVE: To investigate a brief teaching intervention using standardized patients (SPs) trained to improve residents' detection and advising of problem drinkers.

DESIGN: Pretest-posttest design assessing resident behavior and skills.

SUBJECTS: Nineteen internal medicine residents in a University Hospital General Internal Medicine Clinic.

INTERVENTION: Announced SPs were interviewed by residents and presented to faculty who provided brief instruction on the National Institute on Alcohol Abuse and Alcoholism guidelines for screening and brief counseling of problem drinkers.

MEASURE: Unannounced SPs assessed resident behavior and skills.

RESULTS: Following the teaching intervention, 2 times more residents screened for alcohol use and nearly 3 times more residents did brief counseling. Residents reported that the intervention was informative and valuable.

CONCLUSION: A single, 1-hour teaching intervention lead to a 2- to 3-fold increase in resident detection and advising of problem drinkers. SPs provide effective teaching encounters and a useful measure of resident behavior.

KEY WORDS: problem drinking; standardized patients; medical education.

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Alcohol use is characterized by a continuum of drinking behavior that can range from problem-free drinking to alcohol dependence. Between these two extremes lies problem drinking, an informal term describing a pattern of drinking that is associated with adverse consequences related to alcohol consumption. Problem drinkers do not

typically suffer multiple serious consequences but are at risk to do so if their drinking behavior continues.¹ Although no absolute quantity of alcohol use has been established as problem drinking, researchers have suggested problem drinking exceeds hazardous levels of drinking (>4 drinks/day; 12 g pure ethanol/drink; >3 days/week).^{2,3} Problem drinking can be characterized by alcohol abuse but not alcohol dependence as determined by Diagnostic and Statistical Manual of Mental Disorders, Fourth edition criteria.⁴ This form of drinking has been estimated to occur in up to 20% of the general population.⁵ This segment of the population experiences a higher rate of health problems and represents 20% to 40% of patients seeking health care in primary care settings.^{6,7} Physicians detect 20% to 50% of their patients' drinking problems, and an even smaller percent provide counseling.⁸⁻¹⁰

This present degree of medical inattention is a concern when cost-effective, brief clinical interventions exist. Randomized clinical trials have shown that problem drinkers who receive brief interventions are twice as likely to moderate their drinking compared to no intervention.¹¹⁻¹³ Brief interventions are by definition time-limited (less than an hour) therapeutic maneuvers performed during 1 to 5 sessions with the intention to change the behavior of problem drinking, nondependent individuals.¹⁴ To help primary care physicians, the National Institute on Alcohol Abuse and Alcoholism (NIAAA) developed The Physicians' Guide to Helping Patients with Alcohol Problems.¹⁵

We designed a practical, easily implemented educational intervention using standardized patients (SPs) and the NIAAA physician's guide. The goal was to test the effectiveness of this intervention using unannounced SPs trained to assess residents' alcohol screening and counseling skills.

METHODS

Eligible participants included all Internal Medicine residents who saw patients in the University of Wisconsin Hospital and Clinics General Internal Medicine Clinic. Voluntary participation of residents was solicited for a study of and instruction in preventive medicine practices. The specific goal of improving rates of alcohol

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screening and intervention was not revealed so that an unbiased assessment of knowledge and skills could be obtained. However, residents were informed that SPs would be scheduled into their clinics unannounced should they agree to participate in the study. The informed consent protocol was approved by the institutional review board.

Design

The study was a pretest-posttest design in which residents' knowledge and skills were assessed before and after a brief educational intervention. Other conventional techniques of measuring physician behavior, such as medical chart review or exit interviews, were considered; however, on the basis of our experience, we believed the SP model was equally if not more effective and accurate. During the assessment period, an unannounced SP was scheduled into the resident's regular afternoon clinic session. Faculty physicians (apart from the investigator) who staffed and supervised residents during their afternoon clinics were equally unaware of the unannounced SP visits. This was followed 1 to 2 months later by the educational intervention, a 1-hour appointment scheduled into the resident's clinic session. One to 2 months after the educational intervention, a different unannounced SP was scheduled to reassess resident behavior and knowledge.

Standardized Patients

A total of 3 SPs previously trained by standard techniques¹⁶ presented standardized case scenarios. Two SPs unknown to the residents were scheduled to assess resident behavior, and the third was known to residents as an integral component of the educational intervention. The 2 unannounced SPs were carefully incorporated into the resident's clinic schedule so that no distinction between real patients and SPs could be made. They were trained to evaluate residents' skills in history-taking, physical examination, and counseling. The initial unannounced SP was a 55-year-old man trained to present with new-onset high blood pressure, daily tobacco use, and excessive alcohol use (≥ 3 drinks/day). The post-intervention, unannounced SP was a 25-year-old woman who presented with abdominal pain, daily tobacco use, and excessive alcohol use. Each encounter was audiotaped by a hidden microphone carried in the SP's backpack or purse. After each encounter the SP completed a case checklist of resident skills and an interpersonal skills rating scale.

Educational Intervention

A single, 1-hour educational intervention was modeled after the primary care curriculum developed by Day et al. at the University of Wisconsin.¹⁷ The educational intervention took 1 hour and included an SP who was trained to reliably present with alcohol-related symp-

toms, daily tobacco use, and excessive alcohol use. There was a series of steps in this educational intervention: 1) the resident interviewed and examined the known SP; 2) the case was then presented to faculty who facilitated the assessment and plan; 3) the resident completed the interview with the SP, offering a diagnosis and treatment plan; and 4) the resident then returned to his/her faculty for feedback and teaching. The faculty (principal investigator) reviewed NIAAA guidelines on alcohol screening and brief intervention. The core algorithm, *Ask, Assess, and Advise* was emphasized as a simple, time-efficient approach to screening and intervening with patients (see Appendix A).

Measurement Instruments

Four instruments were used: a case checklist, an interviewing skills rating scale, a residents' knowledge scale, and a residents' evaluation rating scale of the educational intervention. The case checklist determined whether the resident asked, assessed, and/or advised in the SP's alcohol use. A resident was considered to have asked if any inquiry was made about alcohol use. He/she was considered to have assessed if the alcohol-related condition or physical dependency was addressed with the patient. Finally, a resident was considered to have advised if a change in drinking habits was discussed or a referral for treatment was made. The case checklist was completed by the unannounced SP immediately after each clinic encounter. The SP encounters were audiotaped and later reviewed by the principal investigator, using the same case checklist for quality control and consistency. SP ratings of the checklist were verified against the corresponding audiotape and yielded agreements of 90% to 100%.

Unannounced SPs also assessed the interviewing skills of the residents by completion of an inventory of interviewing skills scale, a modified version of the Arizona Clinical Interview Rating Scale.¹⁸ The modified scale addresses 3 areas: data gathering techniques, providing information, and patient satisfaction. The scale consists of 20 items and each item is rated on a 5-point Lickert scale.

A residents' knowledge instrument was developed to test basic knowledge of excessive alcohol use, screening, complications, and presentation. The items were multiple choice and fill-in. Finally, a questionnaire was prepared to obtain feedback from each participating resident in evaluation of the educational intervention. The questionnaire solicited responses on a 5-point Lickert scale as well as written comments addressing the acceptability and usefulness of the educational intervention.

Statistical Analysis

Three primary outcome variables addressing resident behavior and performance were assessed before and after the educational intervention. These variables included alcohol screening rate, alcohol assessment rate, and

alcohol intervention rate. The alcohol screening rate was defined as the proportion of residents who asked about alcohol during the encounters with the unannounced SPs. The assessment rate was defined as the proportion of residents who assessed the alcohol problem. The intervention rate was the proportion who advised referral, alcohol moderation, or abstinence. Two other variables measured were resident interview skills and knowledge. Statistical significance was determined by the paired *t* test of continuous variables and the McNemar χ^2 test of categorical variables, the primary outcome variables.

RESULTS

Nineteen of 21 eligible interns and residents in the University Hospital General Internal Medicine Clinic agreed to participate. One resident declined because of concern over conflict with his patient appointments, and the other objected to the presence of an unannounced SP in his clinic. Of the 19 residents, 74% were men and 26% were women; 21% were interns, 32% were second-year residents, and 47% were third-year residents. When the study sample was compared to the entire medicine resident group with regard to gender, type of training, or year of training, a significantly higher proportion of primary care trainees existed in the study sample. The percentages of women and senior residents were not significantly different between the two groups.

In Figure 1, approximately one half of the participating residents (52.6%) asked about alcohol use before the educational intervention compared to 94.6% who asked after the educational intervention (absolute change of 42%; 95% confidence interval [95% CI], 0.14 to 0.70; $P < .01$). Twenty-six percent assessed for alcohol use pre-intervention, and 73.6% assessed post-intervention; 26%

FIGURE 1. Alcohol screening rate, alcohol assessment rate, and alcohol intervention rate of residents ($N = 19$) before (pre-test) and after (post-test) a brief teaching intervention.

FIGURE 2. Alcohol and tobacco intervention rate of residents ($N = 19$) before (pre-test) and after (post-test) a brief teaching intervention.

advised pre-intervention, and 73.6% advised post-intervention (absolute change of 46.4%; 95% CI, 0.16 to 0.79; $P < .01$). In an attempt to control for maturation effects of residency training and education over the 6-month study period, the proportion of residents who advised tobacco cessation before and after the educational intervention was measured and compared to the proportion who advised about alcohol use (Fig. 2). The proportion of residents advising tobacco cessation pre-intervention did not change significantly 6 months later (68% vs 74%). In comparison, a significant change occurred in the proportion of residents advising patients about alcohol use pre- and post-intervention (26% vs 74%).

Alcohol screening and intervention rates did not significantly vary when controlled for year of residency training and whether residents had primary care training. Knowledge and interviewing skills scores did not significantly change after the educational intervention. Resident response to the teaching intervention was assessed using a Lickert scale with scores of 1 (completely useless) to 7 (definitely useful). Average scores were 6 for instruction by the faculty, 5.5 for handouts provided, 5.3 for standardized patient feedback, and 6 for overall experience. Close to 60% of residents reported the teaching encounter as a better experience than regular instruction in the general internal medicine clinic. Written statements by the participating residents included the following: "The SP was quite credible, making the exercise seem real"; "This process really humanizes the problem of EtOH (alcohol) abuse and, overall, I think that this encounter is an excellent educational adjunct"; "... this will definitely change my practice habits"; "... good teaching case with immediate feedback and teaching by staff to drive important points home with verbal/written reinforcement"; "...good opportunity to

explore my abilities to assess pts' (patients') EtOH related behavior (with) backup support from staff."

DISCUSSION

A unique, brief educational intervention in the primary care setting led to a 2- to 3-fold improvement in rates of alcohol screening and advising in a volunteer group of residents over a 1- to 2-month period. Significant changes in performance were not affected by year of residency training, training track, or gender. In addition, residents provided positive feedback regarding the teaching encounter. Although knowledge and interviewing skills of the residents did not change significantly after the educational intervention, this was not unexpected. Often, repetitive patient encounters and follow-up care over years of practicing medicine are needed to instill a sense of expertise, confidence, and skill in addressing patient-related habits (alcohol use, smoking, exercise, and diet). The benefits of the brief intervention are its brevity, experiential basis, and acceptability to learners. Other benefits are the inclusion of core elements of the NIAAA guide, *The Physicians' Guide to Helping Patients with Alcohol Problems*, which specifically targets problem drinkers and emphasizes the algorithm Ask, Assess, and Advise, common to treatment of other chronic illnesses. Standardized patients provide unique teaching encounters and effective measures of resident behavior. When adequately trained, SPs can reliably record information obtained from history and physical examination encounters with interrater scores of 0.80 to 0.90.¹⁶ In addition, academic detailing (one-to-one teaching in the physician's office) with or without the use of standardized patients has been identified as the most effective strategy for changing physician skills.¹⁹

The pretest and posttest design of our study lacks a control group and therefore allows for a significant risk of unknown confounding variables or intervening experiences that can affect residents' behavior throughout their training years. The pretest and posttest SPs were symptomatically different and therefore residents may have responded more readily to abdominal pain when screening for alcohol use as compared to high blood pressure. In addition, the SPs presented with tobacco use, which may have also affected resident behavior and triggered questions about alcohol use during pretest and posttest SP encounters. The principal investigator and the faculty teacher for the study were the same and the generalizability of the teaching intervention effects may be limited. Finally, the teaching intervention was limited to a single session, and there is no indication that the improvements in resident behavior will persist beyond the 6-month study period. Soumerai and Avorn²⁰ note that not only brevity but also repetition and reinforcement are necessary components to successful educational interventions. Future trials will require further testing of the educational intervention with control or comparison groups in different clinical settings with different clinicians and educators.

In conclusion, results of this brief study are favorable and support further investigation in the teaching and sensitization of residents to alcohol problems using standardized patients. We believe that greater application and future clinical trials are warranted in teaching residents alcohol screening and intervention.

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APPENDIX A

Steps for Alcohol Screening and Brief Intervention from NIAAA¹¹

The Physicians' Guide to Helping Patients with Alcohol Problems

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