Applied Research Brief: Behavior Change

A Field Test of a Web-based Substance Abuse Prevention Training Program for Health Promotion Professionals

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Abstract

1 ***Purpose.*** *To evaluate a multimedia substance abuse prevention (SAP) training program for health promotion (HP) practitioners designed to provide opportunities for behavioral modeling and skills building and to motivate and build confidence in ability to integrate SAP into HP offerings.*

Methods. *Using a posttest only design, 192 practitioners were randomly assigned to receive web-based (experimental group) or print-based (control group) training. Feelings about ability to conduct effective SAP programming, reactions to training materials, and knowledge about substance abuse and how to implement SAP were assessed. The experimental group also rated specific aspects of the web training.*

Results. *The experimental group gave high evaluation ratings, scored significantly higher on self-efficacy items, and gave significantly higher ratings on 12 of 15 reaction items.*

Conclusion. *Web-based training was more engaging, understandable, user-friendly, useful, comprehensive, and motivating than print-based training; it is believed to be more effective in helping to integrate substance abuse; and it will serve as a continuous resource. (Am J Health Promot 2006; 20(4):00–00.)*

Key Words: Substance Abuse, Prevention, TrainingHealth Promotion. Manuscript format: research; Research purpose: intervention testing/program evaluation; Study design: posttest only; Outcome measure: cognitive, behavioral; Setting: workplace, community; Health focus: substance abuse, health promotion; Strategy: education/training, skill building/behavior change; Target population: adults, health promotion/education professionals; Target population circumstances: no special circumstances

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INTRODUCTION

Despite the evidence that most heavy drinkers and illicit drug users are working adults, the workplace remains an underutilized vehicle for substance abuse prevention (SAP).[1] Although employee-assistance programs can potentially provide prevention services, they are almost entirely focused on providing treatment and only rarely engage in primary prevention.[2] In recognition of this problem, a small group of researchers engaged in creating and testing SAP programs for the workplace have generated evidence that workplace SAP can work, especially when integrated with broader health promotion programs.[3–5] By integrating substance abuse into the more positive framework of health promotion, the stigma associated with it—a major barrier to getting employers and employees to address substance abuse issues—can be overcome. However, workplace practitioners (e.g., wellness coordinators) have been slow to incorporate SAP, perhaps because of lack of training. Therefore, the development of a comprehensive, sophisticated training program should increase the extent to which SAP is an integral part of workplace programs.

The purpose of this research was to develop and test a web-based training program with extensive multimedia and interactivity, and engaging graphics that will provide the knowledge, skills, and motivation to integrate substance abuse messages and materials into standard programs (e.g., stress management). Program development was guided by an evolving cognitive-behavioral conceptual model formulated by Cook and Youngblood[2,6] and based on existing health behavior theories and constructs, including the work of Bandura and Prochaska and DiClemente.[7,8] By training professionals, it is hoped that SAP programming will reach more workers in a less stigmatized context and thus prevent or reduce substance abuse and its consequences.

Prevention Connection provides trainees with (1) an understanding of the *etiology* of substance abuse and the

major *prevention approaches* that can be applied; (2) information about *prevalence and health risks* of substance abuse; and (3) the motivation, skills, and materials needed to conduct SAP, with a special emphasis on strategies and materials for *integrating* prevention into standard programs.

METHODS

Design

The design was a posttest-only experiment in which 192 participants were randomly assigned to the *Prevention Connection* experimental group or to a control group that received print materials instead of the web-based program. Although this design is not as strong as a pretest-posttest design, it was chosen mainly because key sets of dependent measures, namely (1) reactions to the training materials and (2) evaluation of the web-based training could be given only at posttest. Moreover, we were less interested in quantifying specific gains than in demonstrating the posttraining superiority of the web-based training. This research went under formal human subjects review and was approved and was conducted in compliance with the American Psychological Association guidelines for the treatment of human subjects.[9]

Sample

A diverse sample of 192 health promotion professionals from the Worksite and Health Educator Groups of the American College of Sports Medicine (ACSM) were recruited from across the United States by an e-mail letter containing an overview of the project and details of participation. This "e-letter" was distributed to approximately 1000 professionals via the ACSM listserve. Participation was limited to the first 300 respondents. Of the initial sample of 283 respondents, 68% (n = 192) were retained, completing the training and impact questionnaire. Ongoing e-mail and telephone correspondence was maintained to prevent significant attrition. Random assignment of individuals to the experimental (n = 94) or control (n = 98) groups resulted in no significant differences between groups in terms of age, gender, and race/ethnicity. The average age of participants was 41 years, and the majority (79%) of participants were female and Caucasian (92%). Most participants were health promotion or human resources managers (51%).

Description of the* Prevention Connection *Program. The experimental group received the *Prevention Connection* program, containing comprehensive information on SAP and its integration into health promotion programs, in an interactive, web-based multimedia environment designed to be engaging and self-paced. The program consists of five major segments: (1) *"Opening and Introduction,"* (2) *"Background,"* (3) *"Materials and Procedures,"* (4) *"News,"* and (5) *"Resources and Links."*

The program opens with a series of still photos and audio, featuring *"Testimonials"* by practitioners who describe why it is important to include substance abuse issues in their offerings. The *"Introduction"* presents an interactive graphic displaying the main reasons why the inclusion of these issues is important, followed by *"Frequently Asked Questions."* The *"Background"* contains sections on workplace SAP, health behavior models, and information on drugs and their effects. The *"Materials and Procedures"* section is the central, largest segment containing the materials and methods needed to incorporate substance abuse into four types of programs—stress management, healthy eating, active lifestyle, and parenting. The final section within each topic is a *"Workshop"* that guides the trainees through the steps to creating their own integrated program. *"News"* contains abstracts summarizing research findings in workplace health promotion. *"Resources and Links"* provides a description of employee-focused, evidenced-based programs that can be used to implement SAP programming and active links to web sites of organizations and federal agencies containing science-based information.

Control group participants received a print-based training guide that included (1) an overview of the program; (2) educational information on alcohol and drugs; (3) background information and materials on preventing substance abuse and integrating messages into standard offerings; and (4) information on resources, including health promotion programming materials available in the field and links to national agencies and associations. This guide is similar in general purpose and content to that of the web-based program. However, with its use of video, audio, and interactive segments, the web-based program is different from the printed guide in both format and the experience it provides to the trainee.

Measures

In addition to sociodemographic items (i.e., age, gender, race/ethnicity, and job type), the impact assessment mainly comprised four sets of quantitative items: (a) self-efficacy and behavioral intentions, (b) reactions to the training materials (e.g., how engaging/appealing, comprehensive, and motivating they were), (c) knowledge of substance abuse topics, and (d) knowledge of how to implement substance abuse programming.

Self-efficacy, behavioral intentions, and reaction items were analyzed individually. The reaction items were adapted from measures the research team has used successfully in previous evaluations. The remaining two sets of knowledge items (alpha = .30 for both) yield an overall percent correct score. A final set of evaluation items (based specifically on program content) presented to experimental participants only include (a) three items assessing agreement with the following statements: "Web-based training programs are useful vehicles to providing training to HP professionals," "Web-based training programs are more motivating and compelling than traditional print materials," and "I like being able to access the program at any time or place convenient to me rather than attending a training workshop or class," and (b) seven items assessing the extent to which specific segments (e.g., "Testimonials") were valuable.

A 3-month follow-up survey was used to assess whether practitioners had taken or planned to take steps to integrate SAP into existing programs, shared materials or trained staff on how to integrate, or implemented an integrated program with employees.

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Table 1

Item	Program Group Means (SD)†		ANOVA	
	Experimental (n = 94)	Control (n = 98)	*F*	*p*
Feelings about ability to conduct effective substance abuse prevention (SAP)				
How confident are you that you can effectively integrate SAP materials into health promotion (HP) programs?	3.24 (0.65)**	2.98 (0.69)	7.03	.01
How difficult would it be to integrate SAP materials into HP programs?	2.78 (0.72)***	2.53 (0.78)	5.33	0.02
Do you feel you have an adequate knowledge base to integrate SAP materials into HP programs and interventions?	4.02 (0.93)***	3.68 (0.99)	5.93	0.02
Reactions to the training materials				
The materials were unusually engaging and appealing.	3.62 (0.87)*	2.84 (1.09)	29.842	0.001
The materials were easily understandable.	4.32 (0.63)*	3.93 (0.73)	15.998	0.001
The materials were user-friendly.	4.09 (0.83)*	3.38 (1.13)	23.631	0.001
The materials provided a wealth of information on how to integrate SAP into HP programs.	3.94 (0.84)*	3.15 (1.09)	29.506	0.001
The materials provided a wealth of information on drugs and their effects.	3.80 (0.89)	3.68 (0.97)	0.600	0.43
The materials provided a wealth of information on the importance of SAP for HP.	3.99 (0.75)	3.88 (0.91)	0.665	0.41
The materials gave me helpful tips on how to integrate SAP into HP programs.	4.26 (0.58)*	3.34 (0.98)	62.329	0.001
The materials provided good examples of how to integrate SAP into different types of HP programs.	4.16 (0.69)*	3.34 (1.0)	42.983	0.001
The materials were useful.	4.29 (0.68)*	3.91 (0.76)	13.768	0.001
The materials were comprehensive.	4.11 (0.80)*	3.64 (0.90)	14.351	0.001
The information was presented clearly.	4.21 (0.78)*	3.70 (0.90)	17.557	0.001
The materials motivated me to try to integrate SAP into HP programs.	3.63 (0.91)****	3.37 (1.05)	2.842	0.09
The materials encouraged me to learn how to integrate SAP into HP programs.	3.90 (0.88)	3.77 (0.92)	0.828	0.36
The materials will be effective in helping to incorporate SAP messages into HP programs.	4.05 (0.66)*	3.44 (0.96)	26.183	0.001
The materials will be a continuing resource for me.	4.04 (0.79)**	3.74 (0.85)	6.147	0.01

† SD indicates standard deviation; ANOVA, analysis of variance.
* $P < .001$.
** $P < .01$.
*** $P < .02$.
**** $P < .09$.

Intervention

Following random assignment to treatment condition, participants were sent a packet by mail that included instructions on how to complete the training, an impact questionnaire enclosed in a sealed envelope, and an order form for free supplemental video and print materials.

The supplemental material, entitled *Make the Connections*, was developed and tested previously by the research team and contains information on the connections between substance abuse and health topics (e.g., stress management, healthy eating). These materials were optional and were not part of the training. They are employee-focused prevention materials intended to be used by the practitioner in an employee workshop.

Participants in both groups were instructed to work through the entire training program, going through each component as if they were *trainees* going through the program rather than as if the training program was simply a web site or reference guide one could reference for specific pieces of information and then leave. Participants were told to complete the program at their own pace and convenience and to go back as often as they liked over the 6-week training period. Upon completion, participants were instructed to complete and return the

Table 2

Evaluation Ratings of the Web-based *Prevention Connection* Program (Experimental Group Only)

Item	Experimental Group Rating Means (SD)*
Three-item scale: 1 = strongly disagree to 5 = strongly agree	
Web-based training programs are useful vehicles for providing training to health promotion (HP) professionals.	4.22 (0.62)
Web-based training programs are more motivating and compelling than traditional print materials.	3.68 (0.92)
I like being able to access the program at any time or place convenient to me rather than attending a training workshop or class.	4.31 (0.78)
Seven value–item scale: 1 = not at all valuable to 5 = very valuable	
Background information on worksite prevention programs, models, and research	4.33 (0.79)
Testimonials from HP professionals	3.61 (1.12)
Good and bad examples of *integration, balance, and positioning*	4.40 (0.70)
Workshop topic outlines	4.57 (0.56)
Responses to *Frequently Asked Questions* (FAQs)	4.20 (0.76)
News articles	4.17 (0.76)
Resources and Links section.	4.44 (0.80)

* SD indicates standard deviation.

impact questionnaire. Participants were paid $50, were entered into a $500 drawing, received free access to the web-based *Prevention Connection* following the study, and could keep free supplemental materials.

Analysis

Analysis of variance was used to assess between-group differences on four sets of impact measures.

RESULTS

Analyses on self-efficacy items (Table 1) showed significant differences between groups across all items. Both groups showed strong behavioral intentions (means: experimental group, 3.66; control group, 3.60); however, there was no significant difference ($P < .09$). Results showed that experimental participants intended to integrate SAP into more types of programs than did control participants. The most popular programs in which to integrate were stress management, healthy eating, active lifestyle, and smoking cessation programs.

Analysis of the reaction items (Table 1) showed significant differences between groups on 11 of the 15 items. On the two knowledge measures, both groups scored very high (mean scores 91–92%) across items, resulting in a ceiling effect. Evaluation items (Table 2) presented only to experimental participants yielded consistently high ratings, with means of above "4" on a 5-point scale on 8 of 10 items.

Of the 192 participants who completed training, 153 (80%) completed the 3-month follow-up. Chi-square analysis indicated that the follow-up completion rate was significantly different ($\chi^2 = 8.44$, $p = .004$; 54% experimental and 46% control). Chi-square analysis showed no significant differences in the extent to which trainees had taken specific actions, although the findings show that as a result of going through the training program (either web- or print-based), steps had been taken by a notable proportion of the trainees (e.g., 22% had integrated messages/materials into an existing program, 50% intended to integrate in the future).

Among the 192 participants, 133 (69%) requested the employee-focused supplemental materials for use following the training to integrate materials into program offerings. Request rate by the two groups did not significantly differ (53% experimental, 47% control).

DISCUSSION

Summary

This study found that a web-based program designed to train health promotion professionals in how to integrate substance abuse messages and materials provided trainees with confidence, skills, and motivation to embed these materials into their programs. In contrast to trainees who received print materials, the users of the web-based program gave the program higher ratings across 11 of 15 items, indicating that the web-based program is more appealing, understandable, user-friendly, motivating, informative, useful, clear, and comprehensive than the print materials. There were no differences between groups in terms of knowledge, as both groups had very high scores. The trainees who received the web-based program also viewed specific program elements very favorably. The ability to access the web-based program at times and places of their choosing, rather than attending a workshop, was also viewed as a valued advantage by participants.

Limitations

One limitation of the study is that the research design is most appropriate for evaluating the posttraining superiority of one type of training program over another (i.e., web vs. print). The design did not lend itself to fully evaluating the impact of the training program in terms of change over time in cognitive, psychosocial,

and behavioral outcome variables from baseline to follow-up. A pretest-posttest design would be a stronger design for this purpose. Future research should not only involve the conduct of such an evaluation but, even more importantly, should include an assessment of the extent to which the knowledge, skills, and abilities gained from the training ultimately affected employee substance use attitudes and behaviors.

Implications

These findings indicate that web-based programs are a promising vehicle for training professionals to integrate SAP into popular health promotion programs. Moreover, web-based training might offer several advantages over traditional print-based approaches, particularly a multimedia program with interactivity.

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