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Promoting Skin Cancer Prevention Counseling by Pharmacists

Joni A. Mayer, PhD, Laura Eckhardt, MPH, Barbara M. Stepanski, MPH, James F. Sallis, PhD, John P. Elder, PhD, MPH, Donald J. Slymen, PhD, Lorri Creech, MPH, Gerald Graf, MS, Richard C. Palmer, MPH, Christy Rosenberg, MPH, and Sandra T. Souvignier, MPH

ABSTRACT

Objectives. This study evaluated the effects of an intervention on rates of skin cancer prevention counseling by pharmacists.

Methods. Fifty-four pharmacies were randomly assigned to intervention or control conditions. Intervention consisted of training, feedback, and prompts. Counseling rates before and after the intervention were obtained from study confederates.

Results. At pretest, the proportions of control and intervention sites providing counseling at least once were 7.4% and 0%, respectively (NS). At posttest, these proportions were 3.7% and 66.7%, respectively ($P < .001$).

Conclusions. The results indicated that the intervention was successful and that pharmacists can play an important role in educating the public about skin cancer prevention strategies. (*Am J Public Health.* 1998;88:1096–1099)

Introduction

To aid in the primary prevention of both melanoma and nonmelanoma skin cancers, US health organizations have endorsed the involvement of health professionals in promoting ultraviolet radiation (UVR) exposure reduction behaviors among the general population.[1,2] As one group of health professionals, pharmacists have great potential as skin cancer prevention educators because they are viewed as credible,[3] have the opportunity to help the patient select an appropriate sunscreen product, come into contact with large numbers of individuals, and routinely counsel patients on prescription and over-the-counter medications[4–7] and other health topics.[8–10] Results of an earlier survey conducted by our research group with a random sample of pharmacists indicated that although willingness to offer skin cancer prevention counseling was high, actual counseling rates were low.[11] The randomized, controlled trial described in this paper tested the effects of a multicomponent, pharmacy-based intervention called Project *SUNWISE* on skin cancer prevention counseling rates.

With the exception of James F. Sallis, who is with the Department of Psychology, the authors are with the Graduate School of Public Health, San Diego State University, San Diego, Calif.

Requests for reprints should be sent to Joni A. Mayer, PhD, Graduate School of Public Health, Hardy Tower 119, San Diego State University, San Diego, CA 92182-4162.

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Methods

Study Design and Settings

This study employed a randomized control group design, with pharmacy site as the unit of randomization. From 3 large pharmacy chains in San Diego County, 54 sites (out of 88) were selected on the basis of highest proportions of non-Hispanic Whites in the site's census tract[12]; skin cancer risk is highest in this group.[13,14] Within each chain, half of the selected sites were randomly assigned to the control group and half to the intervention group.

As part of the informed consent procedures, all pharmacists were informed that "on several occasions during the study, project staff will visit the pharmacy posing as patients and will note whether pharmacists discuss skin cancer prevention." Only one pharmacist requested that she not be observed by the study confederates.

Dependent Measures

The primary dependent measure was the rate of skin cancer prevention counseling by on-duty pharmacists as assessed by confederates. Eight individuals were trained to serve as evaluation confederates who posed as patients, and each rotated once through all 54 sites. Confederates initiated an interaction with the pharmacist using a "pretext," which was a pre-assigned question (one routinely asked by patients) about an over-the-counter or prescription medication. Pretexts, which were developed through extensive formative evaluation, consisted of 4 matched pairs of questions asked of the pharmacists; the items in each pair were counterbalanced between pre- and postintervention visits. The 8 pretexts were nested within confederates. Pretexts were designed to give varying levels of cues regarding UVR exposure and fell into 3 categories. Photosensitizer pretexts (one matched pair), which the investigators predicted would provide the strongest cues, asked about a photosensitizing drug. However, the questions were unrelated to the drug's photosensitizing side effects (e.g., "I am taking Minocin. Can I have a glass of wine or beer with dinner?"). Outdoor activity pretexts (2 pairs) noted that the patient would be spending time outdoors and inquired about a related product (e.g., "I'm going sailing this weekend. Is Dramamine the best thing to take for seasickness?"). General pretexts (1 pair) contained no cues related to UVR exposure or photosensitivity (e.g., "How long can I take a medication after it has expired?").

Each pharmacy was visited by evaluation confederates 4 times in the week immediately prior to intervention and 4 times in the week following intervention; there was a 7-week pretest–posttest interval. All visits occurred during the summer of 1996. Confederates were blinded to pharmacy study conditions.

On entering the pharmacy, the confederate asked to speak to the pharmacist if another staff person (e.g., a technician) was present. Pretexts were administered only to pharmacists permanently employed at the site. During the interaction, the confederate determined the pharmacist's identity from his or her name tag. Immediately upon exiting the pharmacy, the confederate recorded the pharmacist's name and specific verbal response to the pretext and noted whether or not the pharmacist gave the confederate a project-supplied skin cancer brochure and/or sunscreen sample.

To be considered counseling, the pharmacist's verbal response had to include a general or specific recommendation about reducing UVR exposure. For example, the following response to a photosensitizer pretext met the criterion for counseling: "This medication will increase your chance of burning and you should wear a good sunscreen." An example of a response that did not meet the criterion was "This medication can cause sun sensitivity, especially since you have fair skin."

During the intervention, the project provided large quantities of skin cancer prevention brochures. Brochure counts were used as a process measure to estimate the number of patients reached. The number of intervention pharmacists who obtained the continuing education unit (CEU) offered by the project was also monitored.

Intervention Procedures

The goal of the intervention was to train pharmacists to encourage all patients to reduce UVR exposure by verbal counseling or by providing a skin cancer brochure or sunscreen sample. Pharmacists were trained to counsel on the combination of avoidance of UVR exposure during peak sunlight hours and use of sunscreen with a sun protection factor of 15 or higher, protective clothing, and shade.[15] The intervention consisted of training provided by a videotape[16] and accompanying print materials; feedback on the site's weekly skin cancer prevention counseling performance, plus incentives for the "winning" performance; and environmental prompts. The 23-minute videotape contained didactic information about skin cancer prevention, a model ("Ask, Advise, and Assist") to help pharmacists give brief counseling to their patients,[17] and 6 brief scenes showing pharmacist–patient interactions. In each scene, the patient and pharmacist are discussing an issue (similar to the pretext topics) and the pharmacist provides skin cancer prevention counseling. Intervention pharmacists had the option of receiving 1 CEU if they completed the program's posttest.

Project staff delivered the video programs (one per pharmacist) to the intervention sites and met with each pharmacy manager to explain all intervention components. This pharmacist was instructed to distribute the remaining materials and explain the program to the other permanent pharmacists.

Approximately 3 weeks after the video programs were delivered, procedures related to the feedback component were initiated. Three times per week over a 3-week interval, 9 feedback confederates, who were different from the evaluation confederates, visited the intervention sites and administered pretexts similar to those used in the evaluation. Each confederate was assigned one pretext and visited each site once. There were 3 pretexts in each category (photosensitizer, outdoor activity, and general.) At each site, after each week's visits had been completed, written feedback on the site's counseling performance (percentage counseled out of the 3 opportunities) was posted on the employee bulletin board and placed in the pharmacists' mailboxes. The performance of the other intervention sites, as well as general feedback on number of brochures and samples given out, was also posted. Informal contacts by project staff were used to enhance the written feedback. For the feedback, in order to reward *any* attempts at skin cancer prevention education, a broader definition of counseling was used (i.e., either counseling verbally, giving a brochure, or giving a sunscreen sample). Pharmacists were

TABLE 1—Analysis of Verbal Counseling at Posttest Using Generalized Estimating Equations

	Regression Estimate	SE	*P*
Model 1			
Condition (1 = intervention, 0 = control)	3.72	1.023	< .001
Model 2			
Condition	3.53	1.012	< .001
Age (continuous)	0.004	0.022	.85
Sex (1 = female, 0 = male)	–0.011	0.571	.98

informed that the site in each chain having the highest performance would win a $50 donation to each pharmacist's favorite charity.

Prior to the initiation of the feedback confederate visits, each intervention site was stocked with skin cancer prevention brochures[18,19] and sunscreen samples, which were to be kept behind the counter and handed to patients. Additional prompts included buttons to be worn by the pharmacists, posters encouraging patients to "ask your pharmacist about skin cancer prevention," and ceramic mugs encouraging pharmacists to "tell your patients about skin cancer prevention."

Results

Observations

A total of 432 evaluation observations were attempted by the confederates. Eight (3.7%) of the data points for pretest had to be discarded because it was later discovered that the pharmacist on duty was not a permanent employee or was alternating between an intervention and a control site. Complete posttest data were available for analysis.

Across all observations, 138 pharmacists were observed. Of these, 33 were observed at pretest only, 25 were observed at posttest only, and 80 were observed at both times. Intervention site pharmacists (n = 71) had a mean age of 40 years and 54% were male. Control site pharmacists (n = 67) had a mean age of 42 years and 69% were male. The observed pharmacists constituted 78% of the permanent pharmacists who were employed at the 54 sites at the time of the study.

Counseling Outcomes

At pretest, 2 (7.4%) of the control sites and none of the intervention sites provided counseling after at least 1 of the pretexts. At posttest, 1 (3.7%) of the control sites and 18 (66.7%) of the intervention sites provided counseling. This posttest difference was significant (χ^2 [1] = 23.5, $P < .001$. Of the 18 intervention sites that provided counseling at posttest, 10 counseled only once, 5 counseled twice, 2 counseled 3 times, and only 1 counseled all 4 times. The 1 control site that counseled did so only once.

To assess group differences in verbal counseling while accounting for site clustering, generalized estimating equations were used.[20,21] The outcome variable was whether verbal counseling was performed following the pretext; this is a dichotomous variable. A logistic model, corresponding to a logit link and a binary mean-variance relation, was fitted; the model controlled for age and sex. Table 1 presents the results from this analysis. Verbal counseling was performed more frequently in the intervention sites than the control sites even after adjustment for pharmacists'age and sex.

As a secondary analysis, for intervention sites at posttest, the verbal counseling distributions by pretext type were assessed. The photosensitizer pretexts were followed by counseling 48.1% (13/27) of the time. The proportions for the outdoor activity and general pretexts were 29.6% (16/54) and 3.7% (1/27), respectively. A generalized estimating equation analysis accounting for clustering by site was performed. With general pretexts used as a reference, the log-odds of verbal counseling following outdoor pretexts was 2.39 ($P = .011$) and the log-odds of counseling following photosensitizer pretexts was 3.18 ($P = .002$).

At intervention sites during posttest confederate visits, pharmacists verbally counseled, distributed a brochure, and/or distributed a sunscreen sample on 40 occasions. Verbal counseling occurred on 30 (75%) of these occasions, and of these 30 occurrences, verbal counseling was accompanied by the distribution of a brochure and/or sunscreen sample 25 times (83%).

Process Data

A total of 10 373 brochures were distributed, with a site mean of 384 (SD = 319) and a range of 15 to 1300. As of July 1997, 34 (37%) of the 93 intervention pharmacists who had received the video program had applied for the CEU related to it.

Discussion

The results of this study indicate that the intervention was successful in increasing skin cancer prevention counseling by pharmacists, with two thirds of the intervention pharmacies providing counseling at least once at posttest. Counseling was more likely to occur during interactions related to photosensitizing medications or to the patient's being outdoors and was not likely to occur in response to the general pretexts.. By definition, the general pretexts provided no cues to the pharmacist regarding counseling. Additionally, the incorporation of skin cancer prevention counseling into some general conversations may have been perceived as insensitive or otherwise inappropriate.

Yet even if counseling occurred only during conversations about photosensitizing drugs, the public health impact could be substantial. There are at least 12 classes of photosensitizing drugs, encompassing hundreds of prescription and over-the-counter products.[22] At one site of a chain pharmacy, data that we collected over a 4-week interval indicated that 35.5% of the 4379 prescriptions filled produce photosensitivity (unpublished data, 1997). Discussion of UVR exposure reduction specific to photosensitizing medications provides a logical bridge to counseling on routine UVR exposure reduction for lowering one's risk of skin cancer and has the potential to reach numerous individuals.

The group feedback component of the intervention served to inform the pharmacists about their counseling performance and motivate them to counsel at higher rates. Anecdotally, although the procedure generally was well received, on several occasions pharmacists expressed frustration that the feedback was underestimating their (perceived) counseling rates. Also, if this strategy is to be institutionalized, a less labor-intensive monitoring system will be needed.

The objective outcome measure was an important strength of the study. However, it is possible that the intervention pharmacists at posttest recognized the pretexts and thus identified the study confederates. If this did occur, the posttest counseling rates would overestimate "true" counseling behavior. Anecdotal evidence indicates that the confederates generally remained incognito. Also, the distribution of over 10 000 brochures helps to substantiate that pharmacists were not "performing" only when interacting with the confederates. For this study, the confederate strategy offered the best approximation to actual patient counseling rates, without the potential biases of self-report and patient-report measures. This measurement approach has been used in several other studies of pharmacists' counseling performance.[23–26]

In conclusion, a combination of video-based training, feedback, and environmental prompts produced a significant, dramatic increase in pharmacists' skin cancer prevention counseling specific to encounters involving photosensitizing drugs and outdoor exposure. If implemented on a large scale, this relatively simple, low-cost intervention could have an important public health effect. Additional research should focus on dismantling the most important intervention components, understanding the specific roles played by the brochures and sunscreen samples relative to the verbal advice, determining how long-term effects can be achieved, and assessing the effects of counseling on patient behavior. □

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